LIBRA JOURNAL CLUB
26 June – 2 July 2023

Our legal office confirmed that articles NOT OPEN ACCESS cannot be distributed to the members of the list. Thus, we will transmit only the titles of articles.
ABSTRACTS of almost all these articles are available from PubMed, and full papers can be obtained through your institutions' library.
OPEN ACCESS articles are available by accessing the articles from PubMed using just the PMID for the search (eg PMID: 35514131 without . at the end)

(copd OR "Pulmonary Disease, Chronic Obstructive"[Mesh])

Table representation of search results timeline featuring number of search results per year.

Year	Number of Results
2022	6
2023	62

TEXT AVAILABILITY

- ☐ Abstract
- ☐ Free full text
- ☐ Full text

ARTICLE ATTRIBUTE

- ☐ Associated data

ARTICLE TYPE

- Books and Documents
- Clinical Study
- Clinical Trial
- Consensus Development Conference
- Controlled Clinical Trial
- Editorial
- English Abstract
- Guideline
- Letter
- Meta-Analysis
- Practice Guideline
- Pragmatic Clinical Trial
- Randomized Controlled Trial
- Review
- Systematic Review

PUBLICATION DATE

- 1 year
- 5 years
- 10 years
- From 2023/6/25 to 2023/7/2

AGE

- Adult: 19+ years

Additional filters Reset all filters

Search Results

62 results

Page

Clin Respir J
.
. 2023 Jul 1.
doi: 10.1111/crj.13656. Online ahead of print.

Long-term effects of air pollution on hospital admissions and mortality for chronic obstructive pulmonary disease in Beijing, China

Rui-Xia Zhu[1], Jin Chen[1]
Affiliations expand

- PMID: 37392082

- DOI: 10.1111/crj.13656

Abstract

Objective: We aimed to clarify the association between air pollution and hospital admissions for chronic obstructive pulmonary disease (COPD) and mortality in Beijing, China.

Methods: In this retrospective study, we recruited 510 COPD patients from 1 January 2006 to 31 December 2009. The patient data were obtained from the electronic medical records of Peking University Third Hospital in Beijing. Air pollution and meteorological data were obtained from the Institute of Atmospheric Physics of the Chinese Academy of Sciences. Monthly COPD hospital admissions, mortality and air pollution data were analysed using Poisson regression in generalised additive models adjusted for mean temperature, pressure and relative humidity.

Results: There were positive correlations between sulfur dioxide (SO_2), particulate matter with an aerodynamic diameter ≤ 10 μm (PM_{10}) and COPD hospital admissions in the

single-pollutant model. An increase of 10 μg/m^3 in SO_2 and PM_{10} were associated with an increase of 4.053% (95% CI: 1.470-5.179%) and 1.401% (95%CI: 0.6656-1.850%) in COPD hospital admissions. In the multiple-pollutant model [SO_2 and nitrogen dioxide (NO_2) combinations], there was only a positive correlation between SO_2 and COPD hospital admissions. An increase of 10 μg/m^3 in SO_2 were associated with an increase of 1.916% (95% CI: 1.118-4.286%) in COPD hospital admissions. There was no correlation between three pollutant combinations and COPD hospital admissions. We did not find correlations between air pollution and COPD mortality in either single- or multiple-pollutant models.

Conclusions: SO_2 and PM_{10} may be important factors for the increase in COPD hospital admissions in Beijing, China.

Keywords: COPD hospital admissions; COPD mortality; air pollution.

- 37 references

SUPPLEMENTARY INFO

Grant supportexpand
Proceed to details
Cite

Share
2
Health Sci Rep
-
-
-
. 2023 Jun 27;6(6):e1371.
doi: 10.1002/hsr2.1371. eCollection 2023 Jun.

Prevalence and clinical impact of anemia in patients diagnosed with chronic obstructive pulmonary disease: A cross-sectional study

Suman Rimal[1], Santa K Das[2], Anita Basnet[3], Tej P Rauniyar[1], Kundan Raj Pandey[1], Sandip Kuikel[4]
Affiliations expand

- PMID: 37388270

- PMCID: PMC10300243

- DOI: 10.1002/hsr2.1371

Abstract

Background and aims: Unlike classically described polycythemia, anemia is found to be more prevalent in patients with chronic obstructive pulmonary disease (COPD). Anemia increases the cost of hospital stay and causes an increased risk of adverse outcomes including death in COPD patients. This study was done to find the prevalence of anemia in COPD patients, the factors associated, and the outcomes of anemic COPD.

Methods: It was a quantitative, descriptive-analytical, and cross-sectional study conducted in Tribhuvan University Teaching Hospital's medical wards and the Emergency Room from September 2019 to September 2020. A simple random sampling method was used. Clinical information was obtained, and patients were followed up 3 months after discharge to document the number of exacerbations and deaths if present.

Results: The patients in our study had a mean age of 70.80 ± 11.16 years. Most were female. Most (85.5%) had a history of exposure to firewood smoke. Twenty-three percent of the patients had anemia and these patients had significantly greater mortality 3 months postdischarge. Middle-old and old were more likely to have anemia with odds ratio (OR) of 2.55 (confidence interval [CI]: 0.48-13.5) and 13.6 (CI: 1.12-24.2), respectively. Current smokers had less likelihood of having anemia (OR: 0.05, CI: 0.006-0.49). Multivariate analysis showed that age, sex, and smoking status were significant determinants of anemia in COPD. There was no association between anemia and duration of hospital stay. However, mortality was higher at 3 months in COPD patients with anemia ($p < 0.001$).

Conclusion: In COPD patients, anemia is prevalent comorbidity that is significantly linked to higher mortality but not to exacerbations. It is unknown, though, if treating anemia in COPD patients will affect the patient's outcome. Additional research in this area may be possible.

Keywords: COPD; anemia; chronic obstructive pulmonary disease; impact; prevalence.

Conflict of interest statement

The authors declare no conflict of interest.

- 27 references
- 2 figures

Proceed to details
Cite

Share
3
Stud Health Technol Inform

. 2023 Jun 29;305:525-528.
doi: 10.3233/SHTI230549.

Combining NLP and Machine Learning for Differential Diagnosis of COPD Exacerbation Using Emergency Room Data

Fatemeh Shah-Mohammadi[1], Joseph Finkelstein[1]
Affiliations expand

- PMID: 37387083

- DOI: 10.3233/SHTI230549

Abstract

Chronic Obstructive Pulmonary Disease (COPD) exacerbation exhibits a set of overlapping symptoms with various forms of cardiovascular disease, which makes its early identification challenging. Timely identification of the underlying condition that caused acute admission of COPD patients in the emergency room (ER) may improve patient care and reduce care costs. This study aims to use machine learning combined with natural language processing (NLP) of ER notes to facilitate differential diagnosis in COPD patients admitted to ER. Using unstructured patient information extracted from the notes documented at the very first hours of admission to the hospital, four machine learning models were developed and

tested. The random forest model demonstrated the best performance with F1 score of 93%.

Keywords: Chronic obstructive pulmonary disease; NLP; differential diagnosis; machine learning.

Proceed to details
Cite

Share
4
Eur Respir J

. 2023 Jun 29;2202364.
doi: 10.1183/13993003.02364-2022. Online ahead of print.

Quantifying COPD as a Risk Factor for Cardiac Disease in a Primary Prevention Cohort

Laura C Maclagan[1], Ruth Croxford[1], Anna Chu[1], Don D Sin[2], Jacob A Udell[1,3,4,5,6], Douglas S Lee[1,4,5,6], Peter C Austin[1,4], Andrea S Gershon[7,4,5,6]
Affiliations expand

- PMID: 37385658

- DOI: 10.1183/13993003.02364-2022

Abstract

Background: Despite COPD being a risk factor for cardiovascular disease (CVD) and knowing that risk stratification for CVD primary prevention is important, little is known about the real world risk of CVD among people with COPD with no history of CVD. This knowledge would inform CVD management to people with COPD. The current study aimed to examine risk of major adverse cardiac events (MACE, including acute myocardial infarction, stroke or cardiovascular death) in a large, complete real-world population with COPD without previous CVD.

Methods: We conducted a retrospective population cohort study using health administrative, medication, laboratory, electronic medical record and other data from Ontario, Canada. People without a history of CVD with and without physician diagnosed COPD were followed between 2008 and 2016 and cardiac risk factors and comorbidities compared. Sequential cause-specific hazard models adjusting for these factors determined the risk of MACE in people with COPD.

Results: Among ~5.8 million individuals in Ontario aged 40 years and older without CVD, 152 125 had COPD. After adjustment for cardiovascular risk factors, comorbidities and other variables, the rate of MACE was 25% higher in persons with compared to without COPD (HR=1.25, 95% CI [1.23, 1.27]).

Conclusions: In a large real-world population without CVD, people with physician diagnosed COPD were 25% more likely to have a major CVD event, after adjustment for CVD risk and other factors. This rate is comparable to the rate in people with diabetes and calls for more aggressive CVD primary prevention in the COPD population.

Eur Respir J

. 2023 Jun 29;2300218.
doi: 10.1183/13993003.00218-2023. Online ahead of print.

Airway smooth muscle area to predict steroid responsiveness in COPD patients receiving triple therapy (HISTORIC): a randomised, placebo–

controlled, double-blind, investigator-initiated trial

Daiana Stolz[1,2,3,4], Eleni Papakonstantinou[5,2,3,4], Maria Pascarella[5], Kathleen Jahn[5], Aline Siebeneichler[5], Andrei M Darie[5], Matthias J Herrmann[5], Werner Strobel[5], Anna Salina[5], Leticia Grize[5], Spasenija Savic Prince[6], Michael Tamm[5,2]
Affiliations expand

- PMID: 37385657

- DOI: 10.1183/13993003.00218-2023

Abstract

Although inhaled corticosteroids (ICS) are highly effective in asthma, they provide significant but modest clinical benefit in COPD. Here, we tested the hypothesis that high bronchial airway smooth muscle (ASMC) area in COPD is associated to ICS responsiveness.In this investigator-initiated and -driven, double-blind, randomised, placebo-controlled trial (HISTORIC), 190 COPD patients, GOLD stage B-D, underwent bronchoscopy with endobronchial biopsy. Patients divided in groups A and B with high ASMC area (HASMC: >20% of the bronchial tissue area) and with low ASMC area (LASMC: ≤20% of the bronchial tissue area), respectively and followed a run-in period of 6 weeks on open-label triple inhaled therapy with aclidinium/formoterol/budesonide (ACL/FOR/BUD:400/12/400 mcg/bid). Subsequently, patients were randomised to receive either ACL/FOR/BUD or ACL/FOR/Placebo and followed for 12 months. The primary end point of the study was the difference in post-bronchodilator FEV_1 over 12 months between patients with LASMC and HASMC receiving or not receiving ICS.In patients with LASMC, ACL/FOR/BUD did not significantly improve FEV_1 over 12 months, as compared to ACL/FOR/placebo p=0.675. In patients with HASMC, however, ACL/FOR/BUD significantly improved FEV_1, as compared to ACL/FOR/placebo p=0.020. Over 12 months, the difference of FEV_1 change between the group of ACL/FOR/BUD and the group of ACL/FOR/placebo was 50.6 mL·year^{-1} within the group of patients with LASMC and 183.0 mL·year^{-1} within the group of patients with HASMC.COPD patients with HASMC respond better to ICS than patients with LASMC, suggesting that this type of histological analysis may predict ICS responsiveness in COPD patients receiving triple therapy.

Eur Respir J
. 2023 Jun 29;2201374.
doi: 10.1183/13993003.01374-2022. Online ahead of print.

Antiviral CD8+ T cell immune responses are impaired by cigarette smoke and in COPD

Jie Chen[1,2,3,4], Xinyuan Wang[1,5,4], Adrian Schmalen[6,7], Sophia Haines[1], Martin Wolff[8], Huan Ma[8], Huabin Zhang[9], Mircea Gabriel Stoleriu[1,10], Johannes Nowak[1], Misako Nakayama[1], Marta Bueno[11], Judith Brands[11], Ana L Mora[11,12], Janet S Lee[13], Susanne Krauss-Etschmann[8,14], Anna Dmitrieva[15,16], Marion Frankenberger[1], Thomas P Hofer[17], Elfriede Noessner[17], Andreas Moosmann[18], Jürgen Behr[19], Katrin Milger[19], Cornelia A Deeg[6], Claudia A Staab-Weijnitz[1], Stefanie M Hauck[7], Heiko Adler[15,16], Torsten Goldmann[20], Karoline I Gaede[21], Jochen Behrends[22], Ilona E Kammerl[1,4], Silke Meiners[23,14,24,4]
Affiliations expand

- PMID: 37385655

- DOI: 10.1183/13993003.01374-2022

Abstract

Background: Virus infections drive COPD exacerbations and progression. Anti-viral immunity centers on the activation of virus-specific CD8+ T cells by viral epitopes presented on MHC class I molecules of infected cells. These epitopes are generated by the immunoproteasome, a specialized intracellular protein degradation machine, which is induced by anti-viral cytokines in infected cells.

Methods: We here analysed the effects of CS on cytokine and virus-mediated induction of the immunoproteasome *in vitro*, *ex vivo* and *in vivo* using RNA and Western blot analyses.

CD8+ T cell activation was determined in co-culture assays with CS-exposed Influenza A virus (IAV)-infected cells. Mass-spectrometry-based analysis of MHC class I-bound peptides uncovered the effects of CS on inflammatory antigen presentation in lung cells. IAV-specific CD8+ T cell numbers were determined in peripheral patients' blood using tetramer-technology.

Results: CS impaired the induction of the immunoproteasome by cytokine signaling and viral infection in lung cells *in vitro*, *ex vivo* and *in vivo*. CS also altered the peptide repertoire of antigens presented on MHC class I under inflammatory conditions. Importantly, MHC class I-mediated activation of IAV-specific CD8+ T cells was dampened by CS. COPD patients exhibited reduced numbers of circulating IAV-specific CD8+ T cells compared to healthy controls and asthmatics.

Conclusion: Our data indicate that cigarette smoke interferes with MHC class I antigen generation and presentation and thereby contributes to impaired activation of CD8+ T cells upon virus infection. This adds important mechanistic insight on how cigarette smoke mediates increased susceptibility of smokers and COPD patients to viral infections.

Adv Ther

. 2023 Jun 29.
doi: 10.1007/s12325-023-02583-1. Online ahead of print.

DElaying Disease Progression In COPD with Early Initiation of Dual Bronchodilator or Triple Inhaled

PharmacoTherapy (DEPICT): A Predictive Modelling Approach

Dave Singh[1,2], Diego Litewka[3], Rafael Páramo[4], Adrian Rendon[5], Abdullah Sayiner[6], Suzana E Tanni[7], Sudeep Acharya[8], Bhumika Aggarwal[8], Afisi S Ismaila[9,10], Raj Sharma[11], Peter Daley-Yates[12]
Affiliations expand

- PMID: 37382864

- DOI: 10.1007/s12325-023-02583-1

Abstract

Introduction: Clinical studies demonstrate an accelerated decline in lung function in patients with moderate chronic obstructive pulmonary disease (COPD) (Global Initiative for Chronic Obstructive Lung Disease [GOLD] grade 2) versus severe and very severe COPD (GOLD grades 3 and 4). This predictive modelling study assessed the impact of initiating pharmacotherapy earlier versus later on long-term disease progression in COPD.

Methods: The modelling approach used data on decline in forced expiratory volume in 1 s (FEV_1) extracted from published studies to develop a longitudinal non-parametric superposition model of lung function decline with progressive impact of exacerbations from 0 per year to 3 per year and no ongoing pharmacotherapy. The model simulated decline in FEV_1 and annual exacerbation rates from age 40 to 75 years in COPD with initiation of long-acting anti-muscarinic antagonist (LAMA)/long-acting $beta_2$-agonist (LABA) (umeclidinium (UMEC)/vilanterol (VI)) or triple (inhaled corticosteroid (ICS)/LAMA/LABA; fluticasone furoate (FF)/UMEC/VI) therapy at 40, 55 or 65 years of age.

Results: Model-predicted decline in FEV_1 showed that, compared with 'no ongoing' therapy, initiation of triple or LAMA/LABA therapy at age 40, 55 or 65 years preserved an additional 469.7 mL or 236.0 mL, 327.5 mL or 203.3 mL, or 213.5 mL or 137.5 mL of lung function, respectively, by the age of 75. The corresponding average annual exacerbation rates were reduced from 1.57 to 0.91, 1.06 or 1.23 with triple therapy or to 1.2, 1.26 and 1.4 with LAMA/LABA therapy when initiated at 40, 55 or 65 years of age, respectively.

Conclusions: This modelling study suggests that earlier initiation of LAMA/LABA or triple therapy may have positive benefits in slowing disease progression in patients with COPD. Greater benefits were demonstrated with early initiation therapy with triple versus LAMA/LABA.

Keywords: COPD exacerbation; Chronic obstructive pulmonary disease (COPD); Dual bronchodilator therapy (LAMA/LABA); GOLD grades; Lung function decline; Triple therapy (ICS/LAMA/LABA).

- 65 references

Review

Sr Care Pharm

. 2023 Jul 1;38(7):266-275.
doi: 10.4140/TCP.n.2023.266.

Chronic Obstructive Pulmonary Disease, Part 2: A Review of Pharmacotherapy Options

Taylor Naberhaus[1]
Affiliations expand

- PMID: 37381136

- DOI: 10.4140/TCP.n.2023.266

Abstract

The Global Initiative for Chronic Obstructive Lung Disease Report provides guidance on prevention and management of chronic obstructive pulmonary disease (COPD), a

pulmonary syndrome largely impacting older adults. Management of COPD in this patient population is often further complicated because of medication and disease state interactions. Pharmacists are in a unique position to impact patients with COPD through counseling on proper medication selection, disease state education, adherence, and proper inhaler technique.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

BMC Pulm Med

. 2023 Jun 28;23(1):232.
doi: 10.1186/s12890-023-02471-y.

Effect of individualized PEEP titration by ultrasonography on perioperative pulmonary protection and postoperative cognitive function in patients with chronic obstructive pulmonary disease

Lai-Feng Luo[#1,2], Yu-Mei Lin[#1], Ying Liu[1], Xiao-Hua Gao[1], Chui-Yu Li[1], Xiao-Qi Zhang[1], Jian-Hua Wu[3], Zhi-Yuan Chen[4]
Affiliations expand

- PMID: 37380978

- PMCID: PMC10304307

- DOI: 10.1186/s12890-023-02471-y

Free PMC article

Abstract

Objective: To evaluate the effect of the individualized positive end-expiratory pressure (PEEP) lung protection ventilation strategy by combining driving pressure (ΔP) and pulmonary ultrasound (LUS)-based titration on lung function and postoperative cognitive function in patients with chronic obstructive pulmonary disease (COPD) during laparoscopic surgery.

Methods: A total of 108 patients with COPD undergoing laparoscopic gastrointestinal surgery under general anesthesia were included in this study. They were randomly divided into three groups (n = 36): traditional volume ventilation group (Group C), fixed PEEP 5 cmH_2O group (Group P), and ΔP combined with LUS-based PEEP titration in the resuscitation room group (Group T). All three groups were given volume ventilation mode, I:E = 1:2; In group C, VT was 10 mL/kg and PEEP was 0 cmH_2O; In groups P and T, VT was 6 mL/kg and PEEP was 5 cmH_2O; After mechanical ventilation for 15 min in Group T, ΔP in combination with LUS was used to titrate PEEP. The oxygenation index (PaO2/FiO2), airway platform pressure (Pplat), dynamic lung compliance (Cdyn), Montreal Cognitive Assessment (MoCA), and venous interleukin-6(IL-6) were recorded at the corresponding time points, and the final PEEP value in Group T was recorded.

Results: The final PEEP value of Group T was (6.4 ± 1.2) cmH_2O; Compared with groups C and P: PaO_2/FiO_2 and Cdyn in Group T were significantly increased ($P < 0.05$) and value of IL-6 was significantly decreased ($P < 0.05$) at the corresponding time points. Compared with group C, the MoCA score on day 7 after surgery in Group T was significantly higher ($P < 0.05$).

Conclusion: Compared with the traditional ventilation strategy, the individualized ΔP combined with LUS-based PEEP titration in patients with COPD during the perioperative period of laparoscopic surgery can play a better role in lung protection and can improve postoperative cognitive function.

Keywords: Chronic obstructive pulmonary disease (COPD); Cognitive function; Individualized PEEP; Interleukin-6 (IL-6); Montreal Cognitive Assessment (MoCA); Pulmonary ultrasound (LUS).

Conflict of interest statement

The authors declare that they have no competing interests.

- 25 references
- 2 figures

SUPPLEMENTARY INFO

MeSH terms, Substances, Grant supportexpand

FULL TEXT LINKS

Read free full text at BMC

Proceed to details

Cite

Share

10

Respiration

-
-
-

. 2023 Jun 28;1-10.

doi: 10.1159/000531011. Online ahead of print.

Effect of Pulmonary Rehabilitation on COPD Assessment Test Items in Individuals Classified as GOLD Group E

Michele Vitacca[1], Mara Paneroni[1], Antonio Spanevello[2,3], Mauro Maniscalco[4], Aldo Diasparra[5], Maria Aliani[6], Nicolino Ambrosino[7]

Affiliations expand

- PMID: 37379816

- DOI: 10.1159/000531011

Abstract

Background: A new Global Initiative for Chronic Obstructive Lung Disease (GOLD) classification has been proposed, based also on COPD Assessment Test (CAT).

Objectives: The aim of this large, multicenter, retrospective study was to determine the impact of pulmonary rehabilitation (PR) on CAT items in individuals with COPD, GOLD group E, recovering from an exacerbation (ECOPD). As secondary aims, we evaluated whether gender, associated chronic respiratory failure (CRF), and age might influence results.

Methods: Data of 2,213 individuals with available paired pre- and post-PR CAT were analyzed. Other common outcome measures were also assessed.

Results: After PR, total CAT improved from 20.8 ± 7.8 to 12.4 ± 6.9 (p = 0.000), and 1,911 individuals (86.4%) reached the minimal clinically important difference (MCID). All CAT items improved significantly without any significant difference among them. However, item "confidence with disease" improved significantly more in males than in females (p = 0.009). Total CAT and six out of eight items improved significantly more in individuals with CRF than in those without (all p < 0.001). Total CAT and three items improved significantly more in younger than in older individuals (p = 0.023). Only presence of CRF was significantly associated with the probability of improving total CAT more than the MCID.

Conclusion: In individuals with COPD, GOLD group E, recovering from ECOPD, PR improves all CAT items; however, gender, associated CRF and age may influence the effect size, suggesting the need to evaluate all items in addition to total CAT score.

Keywords: Dyspnea; Exacerbation; Exercise capacity; Exercise training; Health status.

11

EBioMedicine

. 2023 Jun 26;93:104686.

doi: 10.1016/j.ebiom.2023.104686. Online ahead of print.

Plasma protein biomarkers for early prediction of lung cancer

Michael P A Davies[1], Takahiro Sato[2], Haitham Ashoor[2], Liping Hou[3], Triantafillos Liloglou[4], Robert Yang[2], John K Field[5]
Affiliations expand

- PMID: 37379654

- DOI: 10.1016/j.ebiom.2023.104686

Free article

Abstract

Background: Individual plasma proteins have been identified as minimally invasive biomarkers for lung cancer diagnosis with potential utility in early detection. Plasma proteomes provide insight into contributing biological factors; we investigated their potential for future lung cancer prediction.

Methods: The Olink® Explore-3072 platform quantitated 2941 proteins in 496 Liverpool Lung Project plasma samples, including 131 cases taken 1-10 years prior to diagnosis, 237 controls, and 90 subjects at multiple times. 1112 proteins significantly associated with haemolysis were excluded. Feature selection with bootstrapping identified differentially expressed proteins, subsequently modelled for lung cancer prediction and validated in UK Biobank data.

Findings: For samples 1-3 years pre-diagnosis, 240 proteins were significantly different in cases; for 1-5 year samples, 117 of these and 150 further proteins were identified, mapping to significantly different pathways. Four machine learning algorithms gave median AUCs of 0.76-0.90 and 0.73-0.83 for the 1-3 year and 1-5 year proteins respectively. External validation gave AUCs of 0.75 (1-3 year) and 0.69 (1-5 year), with AUC 0.7 up to 12 years prior to diagnosis. The models were independent of age, smoking duration, cancer histology and the presence of COPD.

Interpretation: The plasma proteome provides biomarkers which may be used to identify those at greatest risk of lung cancer. The proteins and the pathways are different when lung cancer is more imminent, indicating that both biomarkers of inherent risk and biomarkers associated with presence of early lung cancer may be identified.

Funding: Janssen Pharmaceuticals Research Collaboration Award; Roy Castle Lung Cancer Foundation.

Keywords: Early-detection; Lung cancer prediction; Plasma; Proteins; Proteomics.

Conflict of interest statement

Declaration of interests This work was funded through a Research Collaboration Agreement between Janssen Pharmaceuticals and the University of Liverpool: MD & JKF received research funding from Janssen Pharmaceuticals (a Johnson & Johnson company). TS, HA, LH & RY are employees of Johnson & Johnson, the company has filed a patent to on use of plasma protein biomarkers in lung cancer interception. TL declares no conflict of interest. Both parties shared responsibility for: study design; collection, analysis and interpretation of experimental data; writing the report and the decision to publish.

Clin Invest Med

. 2023 Jun 28;46(2):E7-17.

doi: 10.25011/cim.v46i2.40272.

Video Education Program for Proper use of Inhalation Devices in Elderly COPD Patients

Hong Zhu[1], Shouquan Qin[1], Meng Wu[2]

Affiliations expand

- PMID: 37379166

- DOI: 10.25011/cim.v46i2.40272

Abstract

Purpose: This research investigated the utility of a QR code-based video pharmaceutical education program to guide the proper use of the inhalation device in elderly chronic obstructive pulmonary disease (COPD) patients.

Methods: The patients were recruited for this prospective study during a COPD hospitalization, with 96 patients in the control group (CG) receiving conventional hospital care and 93 patients in the intervention group (IG) receiving QR code-based video pharmaceutical education from hospitalization to six months after discharge to improve proper utilization of inhalation technology The outcome measures used to assess the effectiveness of the education program were the COPD Assessment Test (CAT), inhaler use accuracy, inhaler technique score, Beliefs about Medicines Questionnaire (BMQ) score and patient satisfaction.

Results: Compared with CG, inhaler use accuracy and inhaler use scores improved in the IG group, while BMQ-Concern and CAT scores were significantly lower ($P<0.05$). Improvements in patient quality-of-life and satisfaction were reported.

Conclusions: This study revealed that the QR code-based video pharmaceutical education program can improve the quality of life and satisfaction of elderly COPD patients.

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand
Proceed to details
Cite

Share
13

Review

Pediatr Pulmonol

. 2023 Jun 28.
doi: 10.1002/ppul.26570. Online ahead of print.

Update in postinfectious bronchiolitis obliterans

Alejandro Teper[1], Alejandro J Colom[1], Ralf Schubert[2], Pera-Silvija Jerkic[2]
Affiliations expand

- PMID: 37378463

- DOI: 10.1002/ppul.26570

Abstract

Postinfectious bronchiolitis obliterans (PiBO) is a rare and severe form of chronic obstructive lung disease caused by an infectious injury to the lower respiratory tract. The most commonly recognized inciting stimuli leading to PiBO are airway pathogens, such as adenovirus and Mycoplasma. PiBO is characterized by persistent and nonreversible airway obstruction, with functional and radiological evidence of small airway involvement. The literature has limited information on the aetiology, clinical profile, treatment, and outcome of PiBO.

Keywords: adenovirus; chronic obstructive pulmonary disease; respiratory failure.

- 75 references

SUPPLEMENTARY INFO

Publication types, Grant supportexpand

FULL TEXT LINKS

WILEY Full Text Article
Proceed to details
Cite

Share
14
ERJ Open Res

. 2023 Jun 26;9(3):00078-2023.
doi: 10.1183/23120541.00078-2023. eCollection 2023 May.

High urinary desmosine is associated with long-term mortality in patients with COPD

Changhwan Kim[1,2,3], Yousang Ko[2,4,3], Jae Seung Lee[2,5], Chin Kook Rhee[2,6], Jin Hwa Lee[2,7], Ji-Yong Moon[2,8], Seong Yong Lim[2,9], Kwang Ha Yoo[2,10], Joon Beom Seo[2,11], Yeon-Mok Oh[2,5], Sang-Do Lee[2,5], Yong Bum Park[2,4]
Affiliations expand

- PMID: 37377655
- PMCID: PMC10291305
- DOI: 10.1183/23120541.00078-2023

Free PMC article

Abstract

COPD patients with high baseline urinary desmosines demonstrated significantly higher mortality than those with lower urinary desmosines. High urinary desmosine is independently associated with an increased risk of long-term mortality in COPD patients. https://bit.ly/4015xZ9.

Conflict of interest statement

Conflict of interest: None declared.

- 13 references
- 1 figure

FULL TEXT LINKS

Proceed to details
Cite

Observational Study

Respir Res
.
. 2023 Jun 27;24(1):172.
doi: 10.1186/s12931-023-02472-9.

Fibrin degradation products and survival in patients with chronic obstructive pulmonary disease: a protocolized prospective observational study

Peter Kamstrup[1], Pradeesh Sivapalan[1], Christian Rønn[1], Ema Rastoder[1], Daniel Modin[2], Anna Kjaer Kristensen[1], Elisabeth Bendstrup[3,4], Rikke Sørensen[5], Tor Biering-Sørensen[2], Charlotte Suppli Ulrik[6,7], Jørgen Vestbo[8,9], Jens-Ulrik Jensen[10,11]
Affiliations expand

- PMID: 37370121
- PMCID: PMC10294503
- DOI: 10.1186/s12931-023-02472-9

Free PMC article

Abstract

Background: Patients with chronic obstructive pulmonary disease (COPD) have a high incidence of cardiovascular disease including thromboembolisms. Fibrin degradation products, like D-dimer, have been associated with death from all causes in healthy individuals and COPD patients. We aimed to determine the (i) association between D-

dimer levels and all-cause mortality and time being alive and out of a hospital, (ii) possible modifying effect of anticoagulant treatment,, and (iii) distribution of D-dimer in patients with moderate to severe COPD.

Methods: Results of routinely measured stable phase D-dimer samples from COPD-outpatients at Copenhagen University Hospital - Herlev and Gentofte, COPD-outpatient clinic were collected using the Danish registries. These were used to examine whether COPD-patients with a D-dimer level in the upper quartile, had a higher risk of death from all causes within 365 days.

Results: In the unadjusted Cox proportional hazards regression we found an association between high D-dimer and all-cause mortality: Hazard ratio (HR): 2.3 (95% Confidence Interval (CI) 1.1-4.7). In the fully adjusted regression, the HR was 1.8 (CI 0.8-3.9). We did not find any interaction between D-dimer and anticoagulant or antiplatelet therapy. For the secondary outcome, proportion of days alive and out of hospital in 365 days (pDAOH), the unadjusted multiple linear regression had an association between high D-dimer level and pDAOH: -2.7% points (pp) (CI -3.9 pp - -1.5 pp), which was attenuated to -1,7pp (-2.9pp - -0.4pp) in the fully adjusted regression.

Conclusions: In patients with moderate to severe COPD, patients with a high level of D-dimer were more likely to die; however, the signal was not strong in the adjusted analyses and our results do not support unselected risk stratification with D-dimer in COPD-outpatients.

Keywords: All-cause mortality; Biomarker; COPD; Cohort; D-dimer.

Conflict of interest statement

Outside the submitted work: C.S.U. has received grants from Sanofi, Boehringer Ingelheim, AstraZeneca, and Novartis and speaker fees from Orion Pharma, AstraZeneca, and TEVA and consulting fees from Chiesi, Orion Pharma, AstraZeneca, GSK, and TEVA, and been on advisory boards for Novartis, Sanofi, Glaxo-Smith Kline, Chiesi, AstraZeneca, and Boehringer Ingelheim. E.B. has received speaker fees from Boehringer Ingelheim, Hoffmann la Roche, AstraZeneca, GSK, and Daiichi Sankyo, and support for attending meetings/travel from Boehringer Ingelheim, and Hoffmann la Roche and participation on DSMB or advisory board for Boehringer Ingelheim, AbbVie, and Galapagos. T.B-S. received consulting fees from GSK and Sanofi Pasteur and received speaker payments from Bayer, Sanofi Pasteur, and GSK and support for meetings/travel from AstraZeneca and received equipment for his department from GE. R.S. received support for attending meetings/travel from Abbott. All other authors report no conflicts of interest.

- 28 references
- 4 figures

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

Read free full text at BMC

Proceed to details

Cite

Share

16

Meta-Analysis

BMJ Open

. 2023 Jun 26;13(6):e067432.
doi: 10.1136/bmjopen-2022-067432.

Association between chronic obstructive pulmonary disease and periodontal disease: a systematic review and meta-analysis

Mei Yang[#1], Ran Peng[#1,2], Xiaoou Li[#1], Junjie Peng[1], Lin Liu[3], Lei Chen[4]
Affiliations expand

- PMID: 37369414

- DOI: 10.1136/bmjopen-2022-067432

Free article

Abstract

Objectives: Studies have suggested contradictory results on the relationship between chronic obstructive pulmonary disease (COPD) and periodontal disease (PD). The aim of

this study was to determine whether PD increased the risk of COPD and COPD-related clinical events.

Design: A systematic review and meta-analysis.

Data sources: PubMed, Ovid EMBASE and Ovid CENTRAL were searched from inception to 22 February 2023.

Eligibility criteria for studies: We included trials and observational studies evaluating association of PD with the risk of COPD or COPD-related events (exacerbation and mortality), with statistical adjustment for smoking.

Data extraction and synthesis: Two investigators independently extracted data from selected studies using a standardised Excel file. Quality of studies was evaluated using the Newcastle-Ottawa Scale. OR with 95% CI was pooled in a random-effect model with inverse variance method.

Results: 22 observational studies with 51 704 participants were included. Pooled analysis of 18 studies suggested that PD was weakly associated with the risk of COPD (OR: 1.20, 95% CI 1.09 to 1.32). However, in stratified and subgroup analyses, with strict adjustment for smoking, PD no longer related to the risk of COPD (adjusting for smoking intensity: OR: 1.14, 95% CI 0.86 to 1.51; smokers only: OR: 1.46, 95% CI 0.92 to 2.31; never smokers only: OR: 0.93, 95% CI 0.72 to 1.21). Moreover, PD did not increase the risk of COPD-related exacerbation or mortality (OR: 1.18, 95% CI 0.71 to 1.97) in the pooled result of four studies.

Conclusions: This study demonstrates PD confers no risk for COPD and COPD-related events when strictly adjusted by smoking. Large-scale prospective cohort studies with control of potential confounding factors are warranted to validate the present findings.

Keywords: chronic airways disease; emphysema; oral medicine; respiratory medicine (see thoracic medicine).

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

PLoS One
. 2023 Jun 27;18(6):e0287549.
doi: 10.1371/journal.pone.0287549. eCollection 2023.

The effects of pulmonary rehabilitation on inflammatory biomarkers in patients with chronic obstructive pulmonary disease: Protocol for a systematic review and meta-analysis

Anastasia N L Newman[1], Ana Oliveira[1,2,3], Roger Goldstein[2,4,5,6], Christopher Farley[1], Parameswaran Nair[7], Dina Brooks[1,2,4,5,6]
Affiliations expand

- PMID: 37368891
- PMCID: PMC10298755
- DOI: 10.1371/journal.pone.0287549

Free PMC article

Abstract

Introduction: Chronic obstructive pulmonary disease (COPD) is a common, preventable lung disease which affects more than 300 million people worldwide. People with COPD have elevated levels of inflammatory biomarkers, which are linked to physiological

alterations in the respiratory system and extrapulmonary manifestations. Pulmonary rehabilitation (PR) is one of the strategies used in the management of individuals with COPD irrespective of severity, however its effect on systemic inflammation is poorly understood. We report the protocol of a systematic review on the effects of PR on systemic inflammation in patients with COPD.

Materials and methods: Using the search terms "chronic obstructive pulmonary disease", "pulmonary rehabilitation", and "inflammatory biomarkers" and their synonyms, five databases (AMED, CINAHL, Ovid MEDLINE, MEDLINE (Pubmed), EMBASE) will be searched from their inception to identify primary literature evaluating the effects of PR on systemic inflammation. Two reviewers will independently screen titles, abstracts, and full texts for eligibility using the Covidence web-based software. Eligible studies must be published in a peer-reviewed journal and include: (1) participants with COPD undergoing PR with an exercise component of at least 4 weeks in length and (2) a measure of systemic inflammation (e.g., bloodwork or sputum sample) as an outcome of interest. We will use the Cochrane Risk of Bias Tools (ROB2 and ROBINS-I) and will rate the quality of the evidence using the Grading of Recommendations, Assessment, Development and Evaluations (GRADE) tool. This protocol has followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA-P) guidelines and is registered with the International Prospective Register of Systematic Reviews (PROSPERO).

Conclusion: The results of this systematic review will summarize the status of the evidence highlighting the effect of PR on systemic inflammation. A manuscript will be drafted and submitted to a peer-reviewed journal and shared at conferences.

Conflict of interest statement

The authors have declared that no competing interests exist.

Ann Am Thorac Soc
.
. 2023 Jun 26.
doi: 10.1513/AnnalsATS.202304-366VP. Online ahead of print.

Pulmonary Rehabilitation in COPD: Medicine's Best Kept Secret That Could Save Medicare a Billion Dollars a Year

Christopher L Mosher[1], Michael Belman[2], Chris Garvey[3], Richard Casaburi[4]
Affiliations expand

- PMID: 37364287

- DOI: 10.1513/AnnalsATS.202304-366VP

No abstract available

Am J Respir Crit Care Med
.
. 2023 Jun 26.
doi: 10.1164/rccm.202306-0944OC. Online ahead of print.

Ensifentrine, a Novel PDE3 and PDE4 Inhibitor for the Treatment of COPD: Randomized, Double-Blind, Placebo-controlled, Multicenter, Phase III Trials (The ENHANCE Trials)

Antonio Anzueto[1], Igor Z Barjaktarevic[2], Thomas M Siler[3], Tara Rheault[4], Thomas Bengtsson[5], Kathleen Rickard[6], Frank Sciurba[7]; ENHANCE investigators
Affiliations expand

- PMID: 37364283

- DOI: 10.1164/rccm.202306-0944OC

Abstract

Rationale: Ensifentrine is a novel, selective, dual phosphodiesterase (PDE)3 and PDE4 inhibitor with bronchodilator and anti-inflammatory effects. Replicate Phase 3 trials of nebulized ensifentrine were conducted (ENHANCE-1 and ENHANCE-2) to assess these effects in patients with COPD.

Objectives: To evaluate the efficacy of ensifentrine compared to placebo on lung function, symptoms, quality of life and exacerbations in patients with COPD.

Methods: Phase 3, multi-center, randomized, double-blind, parallel-group, placebo-controlled trials, conducted between September 2020 and December 2022 at 250 research centers/pulmonology practices in 17 countries. Patients 40-80 years with moderate/severe, symptomatic COPD enrolled.

Main results: 760 (ENHANCE-1) and 789 (ENHANCE-2) patients were randomized and treated, with 69% and 55% taking concomitant LAMA or LABA, respectively. Post-bronchodilator FEV1 was 52% and 51% of predicted normal. Ensifentrine treatment significantly improved average FEV1 AUC0-12h vs placebo (ENHANCE-1: 87mL [95% CI 55,119]; ENHANCE-2: 94mL [65,124]; both $p<0.001$). Ensifentrine treatment significantly improved symptoms (E-RS) and quality of life (SGRQ) vs placebo at Week 24 in ENHANCE-1, but not ENHANCE-2. Ensifentrine treatment reduced the rate of moderate/severe exacerbations vs placebo over 24 weeks (ENHANCE-1: RR=0.64 [0.40,1.00], p=0.050; ENHANCE-2: RR=0.57 [0.38,0.87], p=0.009) and increased time to first exacerbation

(ENHANCE-1: HR=0.62 [0.39,0.97], p=0.038; ENHANCE-2: HR=0.58 [0.38,0.87], p=0.009). Adverse event rates were similar to placebo.

Conclusions: Ensifentrine significantly improved lung function in both trials, with results supporting exacerbation rate and risk reduction in a broad COPD population and in addition to other classes of maintenance therapies. Clinical trial registrations available at www.

Clinicaltrials: gov, IDs: NCT04535986, NCT04542057.

Keywords: COPD; PDE3 and PDE4 inhibitor; ensifentrine; nebulized.

20

Ann Am Thorac Soc

. 2023 Jun 26.

doi: 10.1513/AnnalsATS.202211-964OC. Online ahead of print.

Cardiovascular Autonomic Function and Incident COPD Hospitalizations in ARIC

David M MacDonald[1], Yuekai Ji[2], Selcuk Adabag[3], Alvaro Alonso[4], Lin Yee Chen[5], Benjamin E Henkle[6], Stephen Juraschek[7], Faye L Norby[8], Pamela L Lutsey[9], Ken M Kunisaki[10 6]

Affiliations expand

- PMID: 37364277

- DOI: 10.1513/AnnalsATS.202211-964OC

Abstract

Rationale: The autonomic nervous system extensively innervates the lungs but its role in COPD outcomes has not been well-studied.

Objective: We assessed relationships between cardiovascular autonomic nervous system measures (heart rate variability [HRV] and orthostatic hypotension [OH]) and incident COPD hospitalization in the Atherosclerosis Risk in Communities (ARIC) study.

Methods: Cox proportional hazards regression models to estimate hazard ratios (HRs) and 95% confidence intervals (CIs) between baseline (1987-1989) autonomic function measures (HRV measures from 2-minute electrocardiograms and OH variables) and incident COPD hospitalizations through 2019. Models included demographics, smoking status, lung function, co-morbidities, and physical activity. We also performed analyses stratified by baseline airflow obstruction.

Measurements and main results: Of the11,625 participants (mean age 53.8 years, 56.5% female), 26.3% identified as Black. Baseline mean (±SD) percent predicted FEV1 was 94 ± 17% and 2,599 (22.4%) had airflow obstruction. Over a median follow-up time of 29 years, there were 2,406 incident COPD hospitalizations. Higher HRV (i.e. better autonomic function) was associated with lower risk of incident COPD hospitalization. Markers of worse autonomic function (OH and greater orthostatic changes in systolic and diastolic blood pressure) were associated with higher risk of incident COPD hospitalization [HR (95% CI) for presence of OH 1.51 (1.25 to 1.92)]. In stratified analyses, results were more robust in participants without baseline airflow obstruction.

Conclusion: In this large, multicenter, prospective community cohort, better cardiovascular autonomic function at baseline was associated with lower risk of subsequent hospitalization for COPD, particularly among participants without evidence of lung disease at baseline.

Review

Expert Opin Investig Drugs

. 2023 Jun 26.
doi: 10.1080/13543784.2023.2230138. Online ahead of print.

Experimental drugs in clinical trials for COPD: Artificial Intelligence via Machine Learning approach to predict the successful advance from early-stage development to approval

Luigino Calzetta[1], Elena Pistocchini[2], Alfredo Chetta[1], Paola Rogliani[2], Mario Cazzola[2]
Affiliations expand

- PMID: 37364225

- DOI: 10.1080/13543784.2023.2230138

Abstract

Introduction: Therapeutic advances in drug therapy of chronic obstructive pulmonary disease (COPD) really effective in suppressing the pathological processes underlying the disease deterioration are still needed. Artificial Intelligence (AI) via Machine Learning (ML) may represent an effective tool to predict clinical development of investigational agents.

Areal covered: Experimental drugs in Phase I and II development for COPD from early 2014 to late 2022 were identified in the ClinicalTrials.gov database. Different ML models, trained from prior knowledge on clinical trial success, were used to predict the probability that experimental drugs will successfully advance toward approval in COPD, according to Bayesian inference as follows: ≤25% low probability, >25% and ≤ 50% moderate probability, >50% and ≤ 75% high probability, and > 75% very high probability.

Expert opinion: The Artificial Neural Network and Random Forest ML models indicated that, among the current experimental drugs in clinical trials for COPD, only the bifunctional muscarinic antagonist - β_2-adrenoceptor agonists (MABA) navafenterol and batefenterol, the inhaled corticosteroid (ICS)/MABA fluticasone furoate/batefenterol, and the bifunctional phosphodiesterase (PDE) 3/4 inhibitor ensifentrine resulted to have a moderate to very high probability of being approved in the next future, however not before 2025.

Keywords: Artificial Intelligence; COPD; MABA; Machine learning; ensifentrine; experimental drugs; phosphodiesterase inhibitor; precision medicine.

Respir Care

. 2023 Jul;68(7):961-972.
doi: 10.4187/respcare.10782.

Exacerbations of COPD

Brian W Carlin[1]
Affiliations expand

- PMID: 37353338
- PMCID: PMC10289624 (available on 2024-07-01)
- DOI: 10.4187/respcare.10782

Abstract

COPD exacerbations are associated with significant morbidity, mortality, and increased health care expenditures. The recently published Global Initiative for Chronic Obstructive Lung Disease (GOLD) recommendations have further refined the definition of an exacerbation. A better understanding of the risk factors associated with the development of an exacerbation exists, and improvements are being made in earlier detection

approaches. Pharmacologic treatment strategies have been the cornerstone of effective therapy. In addition, both pharmacologic and non-pharmacologic strategies have been proven successful in the prevention of future exacerbations. Newer technologies, including the use of artificial intelligence and wearable monitoring devices, are now being used to help in the earlier detection of exacerbations. Such preventive and earlier detection strategies can help to develop a more personalized care model and improve outcomes for patients with COPD.

Keywords: COPD; exacerbation of COPD.

Respir Care

-
-
-

. 2023 Jul;68(7):881-888.
doi: 10.4187/respcare.10612.

Understanding Early COPD

Bo Young Lee[1], MeiLan K Han[2]
Affiliations expand

- PMID: 37353336

- PMCID: PMC10289618 (available on 2024-07-01)

- DOI: 10.4187/respcare.10612

Abstract

Whereas COPD is currently defined as the presence of spirometric obstruction, the pathologic changes in individuals at risk including chronic mucus hypersecretion and emphysema have been recognized for centuries. At the same time, we have struggled to define criteria that would help us identify patients at an early stage, prior to the development of pulmonary function abnormality. The concept of GOLD 0 was introduced in the hopes that symptoms would help to identify those at greatest risk for progression. While symptoms are a risk factor, in particular chronic bronchitis, the term was abandoned as the majority of individuals at risk who progress to COPD do not have symptoms. Since then, the related terms pre-COPD and early COPD have been introduced. They are similar in that the term pre-COPD identifies individuals based on symptoms, physiologic, or radiographic abnormality that do not meet criteria for COPD but are clearly at risk. The term early COPD extends that concept further, focusing on individuals who have early physiologic or radiographic abnormality but at the same time are young, thereby excluding those with late mild disease who may be less likely to progress. Whereas individuals with early COPD are now being recruited for observational studies, we are still challenged with determining the best way to identify patients at risk who should undergo additional testing as well as developing specific therapies for patients with early-stage disease.

Keywords: age; chronic bronchitis; emphysema; lung function decline; pre-COPD; respiratory symptoms; small airways disease.

Conflict of interest statement

Dr Han discloses relationships with GlaxoSmithKline, AstraZeneca, Boehringer Ingelheim, Cipla, Chiesi, Novartis, Pulmonx, Teva, Verona, Merck, Mylan, Sanofi, DevPro, Aerogen, Polarian, Regeneron, UpToDate, Altesa Biopharma, Medscape, NACE, MDBriefCase, Integrity, the National Institutes of Health, Sunovion, Nuvaira, Gala Therapeutics, Biodesix, Medtronic, Meissa Vaccines, the COPD Foundation, and the American Lung Association. Dr Lee has disclosed no conflicts of interest.

Respir Care
.
. 2023 Jul;68(7):983-997.
doi: 10.4187/respcare.10520.

Pulmonary Rehabilitation in Persons With COPD

Chris Garvey[1]
Affiliations expand

- PMID: 37353335
- PMCID: PMC10289613 (available on 2024-07-01)
- DOI: 10.4187/respcare.10520

Abstract

Pulmonary rehabilitation (PR) is a high-value intervention for persons with COPD and other chronic lung diseases. It is associated with improvement in exercise capacity, dyspnea, health-related quality of life, and depression as well as a reduction in hospitalization and improved survival when PR follows COPD-related hospitalizations. PR is underused in the United States and other countries despite strong evidence of both clinical effectiveness and cost-effectiveness. Additional challenges include a lack of equitable reimbursement and poor access, particularly in rural settings. Models, for example, virtual PR, may be an option for improving access but coverage in the United States by Medicare is tenuous. In addition, virtual PR models have considerable heterogeneity, which challenges uniform efficacy and selection of optimal candidates.

Keywords: COPD; dyspnea; exercise; function; rehabilitation.

Conflict of interest statement

Ms Garvey has disclosed a relationship with Boehringer Inhelheim.

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

25

Respir Care

-
-
-

. 2023 Jul;68(7):998-1012.
doi: 10.4187/respcare.10876.

Oxygen Therapy in COPD

Michael W Hess[1]

Affiliations expand

- PMID: 37353334

- PMCID: PMC10289616 (available on 2024-07-01)

- DOI: 10.4187/respcare.10876

Abstract

Long-term oxygen therapy (LTOT) is a mainstay treatment for patients with severe resting hypoxemia secondary to chronic respiratory conditions including COPD. The evidence for LTOT is based on two trials that are now several decades old but have been insufficiently

revisited. Therefore, many questions remain about precisely which patients experience the most benefit from LTOT, as well as how to define that benefit. Most studies have examined LTOT's effect on longevity rather than its impact on quality of life. In addition, many challenges exist in training both clinicians and patients on best practices for LTOT and associated equipment. Reimbursement policies have reduced the kinds of equipment available to the LTOT patient community, presenting additional challenges. This paper will review the current evidence for LTOT in COPD, the challenges involved with providing optimal therapy, and potential avenues of modernizing this essential intervention.

Keywords: COPD; long-term oxygen therapy; oxygen; oxygen concentrator; portable oxygen concentrator; quality of life; supplemental oxygen.

Conflict of interest statement

Mr Hess has disclosed no conflicts of interest.

Understanding COPD Etiology, Pathophysiology, and Definition

Jeffrey L Curtis[1]

Affiliations expand

- PMID: 37353333

- PMCID: PMC10289621 (available on 2024-07-01)

- DOI: 10.4187/respcare.10873

Abstract

COPD, one of the leading worldwide health problems, currently lacks truly disease-modifying medical therapies applicable to most patients. Developing such novel therapies has been hampered by the marked heterogeneity of phenotypes between individuals with COPD. Such heterogeneity suggests that, rather than a single cause (particularly just direct inhalation of tobacco products), development and progression of COPD likely involve both complex gene-by-environment interactions to multiple inhalational exposures and a variety of molecular pathways. However, there has been considerable recent progress toward understanding how specific pathological processes can lead to discrete COPD phenotypes, particularly that of small airways disease. Advances in imaging techniques that correlate to specific types of histological damage, and in the immunological mechanisms of lung damage in COPD, hold promise for development of personalized therapies. At the same time, there is growing recognition that the current diagnostic criteria for COPD, based solely on spirometry, exclude large numbers of individuals with very similar disease manifestations. This concise review summarizes current understanding of the etiology and pathophysiology of COPD and provides background explaining the increasing calls to expand the diagnostic criteria used to diagnose COPD and some challenges in doing so.

Keywords: COPD; nosology; pathophysiology; small airways disease.

Conflict of interest statement

Dr Curtis discloses relationships with AstraZeneca PLC, Novartis AG, and CSL Behring LLC.

Respir Care
.
. 2023 Jul;68(7):1013-1022.
doi: 10.4187/respcare.10788.

Home Noninvasive Ventilation for COPD

Jeremy E Orr[1]
Affiliations expand

- PMID: 37353331
- PMCID: PMC10289625 (available on 2024-07-01)
- DOI: 10.4187/respcare.10788

Abstract

Patients with hypercapnic COPD appear to represent a phenotype driven by specific physiology including air trapping and mechanical disadvantage, sleep hypoventilation, and sleep apnea. Such individuals appear to be at high risk for adverse health outcomes. Home noninvasive ventilation (NIV) has been shown to have the potential to help compensate for physiological issues underlying hypercapnia. In contrast to older literature, contemporary clinical trials of home NIV have been shown to improve patient-oriented outcomes including quality of life, hospitalizations, and mortality. Advancements in the use of NIV, including the use of higher inspiratory pressures, may account for recent success. Successful practical application of home NIV thus requires an adequate understanding of patient selection, devices and modes, and strategies for titration. The emergence of telemonitoring holds promise for further improvements in patient care by facilitating titration, promoting adherence, troubleshooting issues, and possibly predicting exacerbations. Given the complexity of home NIV, clinicians and health systems might

consider establishment of dedicated home ventilation programs to provide such care. In addition, incorporation of respiratory therapist expertise is likely to improve success. Traditional fee-for-service structures have been a challenge for financing such programs, but ongoing changes toward value-based care are likely to make home NIV programs more feasible.

Keywords: COPD; lung; noninvasive ventilation; sleep.

Conflict of interest statement

Dr Orr discloses a relationship with ResMed (Advisory Board).

Review

Respir Care

. 2023 Jul;68(7):889-913.
doi: 10.4187/respcare.10757.

The Role of Pulmonary Function Testing in the Diagnosis and Management of COPD

Jeffrey M Haynes[1], David A Kaminsky[2], Gregg L Ruppel[3]
Affiliations expand

- PMID: 37353330
- PMCID: PMC10289615 (available on 2024-07-01)
- DOI: 10.4187/respcare.10757

Abstract

Pulmonary function testing (PFT) has a long and rich history in the definition, diagnosis, and management of COPD. For decades, spirometry has been regarded as the standard for diagnosing COPD; however, numerous studies have shown that COPD symptoms, pathology, and associated poor outcomes can occur, despite normal spirometry. Diffusing capacity and imaging studies have called into question the need for spirometry to put the "O" (obstruction) in COPD. The role of exercise testing and the ability of PFTs to phenotype COPD are reviewed. Although PFTs play an important role in diagnosis, treatment decisions are primarily determined by symptom intensity and exacerbation history. Although a seminal study positioned FEV_1 as the primary predictor of survival, numerous studies have shown that tests other than spirometry are superior predictors of mortality. In years past, using spirometry to screen for COPD was promulgated; however, this only seems appropriate for individuals who are symptomatic and at risk for developing COPD.

Keywords: chronic obstructive; diagnosis; exercise test; pulmonary diffusing capacity; pulmonary disease; respiratory function tests; spirometry.

Respir Care
•
•
•
. 2023 Jul;68(7):939-960.
doi: 10.4187/respcare.10825.

Surgical and Interventional Approaches in COPD

Gerard J Criner[1]
Affiliations expand

- PMID: 37353329

- PMCID: PMC10289622 (available on 2024-07-01)

- DOI: 10.4187/respcare.10825

Abstract

Many patients suffer from complaints of dyspnea, cough, and sputum production, clinical symptoms that hallmark the structural abnormalities that are present in patients with COPD. Although pharmacologic and non-pharmacologic medical therapies help reduce these symptoms, many of these symptoms, especially dyspnea, remain unchecked and contribute to the burden of disease in patients with COPD. Over the last 3 decades, several surgical and interventional treatments delivered via a bronchoscopic approach have been developed to complement medical therapies and show promise to improve patient outcomes. Surgical and interventional treatments target structural abnormalities of the airway and lung parenchyma that can be identified with a combination of imaging and physiological testing, factors that are key to select patients most likely to benefit from these treatments. This paper reviews surgical and bronchoscopic interventional treatment options for patients with emphysema and airways disorders.

Keywords: BLVR; COPD; LVRS; chronic bronchitis; emphysema.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

30

Respir Care

-
-
-

. 2023 Jul;68(7):973-982.
doi: 10.4187/respcare.10560.

Acute Hypercapnic Respiratory Failure in COPD

Neil R MacIntyre[1]

Affiliations expand

- PMID: 37353327

- PMCID: PMC10289623 (available on 2024-07-01)

- DOI: 10.4187/respcare.10560

Abstract

COPD is a progressive inflammatory process affecting both the airways and alveolar structures of the lungs. Exacerbations of COPD are episodes of acute worsening of this inflammatory process, often triggered by infections. The most severe exacerbations are characterized by substantial air trapping and inspiratory muscle overload, which leads to hypercapnic respiratory failure. Pharmacologic therapies focus on intense bronchodilator administration (usually by aerosol), corticosteroids, and antibiotics. Respiratory life support technologies are often needed for severe exacerbations and range from carefully titrated supplemental O_2 administration to positive-pressure ventilation (both invasive and

noninvasive). Future life support strategies will likely involve extracorporeal life support technologies.

Keywords: COPD; COPD exacerbations; air trapping (intrinsic PEEP); hypercapnic respiratory failure; inspiratory muscle overload; positive-pressure ventilation (invasive and noninvasive).

Conflict of interest statement

Dr MacIntyre discloses relationships with Baxter and Inogen.

Review

Respir Care

. 2023 Jul;68(7):871-880.
doi: 10.4187/respcare.11035.

COPD Phenotyping

Stephanie A Christenson[1]
Affiliations expand

- PMID: 37353326

- PMCID: PMC10289620 (available on 2024-07-01)

- DOI: 10.4187/respcare.11035

Abstract

COPD is a heterogeneous condition, the onset and trajectory of which is influenced not only by tobacco exposure but also an individual's genetics and the exposures they accumulate over their life course. In such a complex chronic disease, phenotyping individuals based on similar clinical or molecular characteristics can aid in guiding appropriate therapeutic management. Treatable traits, characteristics for which evidence exists for a specific favorable treatment response, are increasingly incorporated into COPD clinical guidelines. But the COPD phenotyping literature is evolving. Innovations in lung imaging and physiologic metrics, as well as omics technologies and biomarker science, are contributing to a better understanding of COPD heterogeneity. This review summarizes the evolution of COPD phenotyping, the current use of phenotyping to direct clinical care, and how innovations in clinical and molecular approaches to unraveling disease heterogeneity are refining our understanding of COPD phenotypes.

Keywords: COPD; asthma-COPD; phenotype.

Conflict of interest statement

Dr Christenson discloses relationships with AstraZeneca, Sanofi/Regeneron, and GlaxoSmithKline.

-

. 2023 Jun 21;32(168):220243.
doi: 10.1183/16000617.0243-2022. Print 2023 Jun 30.

Meditative movement for breathlessness in advanced COPD or cancer: a systematic review and meta-analysis

Claire M Nolan[1,2], Lisa Jane Brighton[3,4], Yihan Mo[3], Joanne Bayly[3,5], Irene J Higginson[3], William D-C Man[2,6,7], Matthew Maddocks[3]
Affiliations expand

- PMID: 37343961
- PMCID: PMC10282812
- DOI: 10.1183/16000617.0243-2022

Free PMC article

Abstract

The effect of meditative movement, which includes yoga, tai chi and qi gong, on breathlessness in advanced disease is unknown. This systematic review aims to comprehensively assess the evidence on the effect of meditative movement on breathlessness (primary outcome), health-related quality of life, exercise capacity, functional performance and psychological symptoms (secondary outcomes) in advanced disease. 11 English and Chinese language databases were searched for relevant trials. Risk of bias was assessed using the Cochrane tool. Standardised mean differences (SMDs) with 95% confidence intervals were computed. 17 trials with 1125 participants (n=815 COPD, n=310 cancer), all with unclear or high risk of bias, were included. Pooled estimates (14 studies, n=671) showed no statistically significant difference in breathlessness between meditative movement and control interventions (SMD (95% CI) 0.10 (-0.15-0.34); Chi^2=30.11; I^2=57%; p=0.45), irrespective of comparator, intervention or disease category. Similar results were observed for health-related quality of life and exercise capacity. It was not possible to perform a meta-analysis for functional performance and psychological

symptoms. In conclusion, in people with advanced COPD or cancer, meditative movement does not improve breathlessness, health-related quality of life or exercise capacity. Methodological limitations lead to low levels of certainty in the results.

Conflict of interest statement

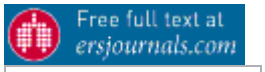
Conflict of interest: C.M. Nolan reports personal fees from Novartis, consultancy work (not reimbursed) with Vicore Pharma and grants from the National Institute for Health and Care Research outside the submitted work. W.D-C. Man reports grants from the National Institute for Health and Care Research (NIHR), outside the submitted work. M. Maddocks reports grants from NIHR, outside the submitted work. The remaining authors have nothing to disclose.

- 47 references
- 5 figures

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS



Proceed to details

Cite

Share

33

Review

Expert Opin Drug Deliv

-
-
-

. 2023 Jun 27;1-14.
doi: 10.1080/17425247.2023.2228681. Online ahead of print.

Delivering monoclonal antibodies via inhalation: a systematic review of clinical trials in asthma and COPD

Rossella Laitano[1], Luigino Calzetta[2], Francesco Cavalli[1], Mario Cazzola[1], Paola Rogliani[1]
Affiliations expand

- PMID: 37342873

- DOI: 10.1080/17425247.2023.2228681

Abstract

Introduction: Advances in understanding the pathophysiology of asthma and chronic obstructive pulmonary disease (COPD) led to investigation of biologic drugs targeting specific inflammatory pathways. No biologics are licensed for COPD while all the approved monoclonal antibodies (mAbs) for severe asthma treatment are systemically administered. Systemic administration is associated with low target tissue exposure and risk of systemic adverse events. Thus, delivering mAbs via inhalation may be an attractive approach for asthma and COPD treatment due to direct targeting of the airways.

Areas covered: This systematic review of randomized control trials (RCTs) evaluated the potential role of delivering mAbs via inhalation in asthma and COPD treatment. Five RCTs were deemed eligible for a qualitative analysis.

Expert opinion: Compared to systemic administration, delivering mAbs via inhalation is associated with rapid onset of action, greater efficacy at lower doses, minimal systemic exposure, and lower risk of adverse events. Although some of the inhaled mAbs included in this study showed a certain level of efficacy and safety in asthmatic patients, delivering mAbs via inhalation is still challenging and controversial. Further adequately powered and well-designed RCTs are needed to assess the potential role of inhaled mAbs in the treatment of asthma and COPD.

Keywords: Asthma; COPD; inhaled; monoclonal antibodies; systematic review.

Review

Drugs Aging
. 2023 Jul;40(7):605-619.
doi: 10.1007/s40266-023-01038-0. Epub 2023 Jun 14.

Pharmacotherapies in Older Adults with COPD: Challenges and Opportunities

Maria Gabriella Matera[1], Nicola A Hanania[2], Mauro Maniscalco[3,4], Mario Cazzola[5]
Affiliations expand

- PMID: 37316689
- PMCID: PMC10300166
- DOI: 10.1007/s40266-023-01038-0

Free PMC article

Abstract

Older adults have a higher prevalence of chronic obstructive pulmonary disease (COPD), which will likely increase substantially in the coming decades owing to aging populations and increased long-term exposure to risk factors for this disease. COPD in older adults is characterized by low-grade chronic systemic inflammation, known as inflamm-aging. It contributes substantially to age-associated pulmonary changes that are clinically expressed by reduced lung function, poor health status, and limitations in activities of daily living. In addition, inflamm-aging has been associated with the onset of many comorbidities commonly encountered in COPD. Furthermore, physiologic changes that are often seen

with aging can influence the optimal treatment of older patients with COPD. Therefore, variables such as pharmacokinetics, pharmacodynamics, polypharmacy, comorbidities, adverse drug responses, drug interactions, method of administration, and social and economic issues that impact nutrition and adherence to therapy must be carefully evaluated when prescribing medication to these patients because each of them alone or together may affect the outcome of treatment. Current COPD medications focus mainly on alleviating COPD-related symptoms, so alternative treatment approaches that target the disease progression are being investigated. Considering the importance of inflamm-aging, new anti-inflammatory molecules are being evaluated, focusing on inhibiting the recruitment and activation of inflammatory cells, blocking mediators of inflammation thought to be important in the recruitment or activation of these inflammatory cells or released by these cells. Potential therapies that may slow the aging processes by acting on cellular senescence, blocking the processes that cause it (senostatics), eliminating senescent cells (senolytics), or targeting the ongoing oxidative stress seen with aging need to be evaluated.

Conflict of interest statement

Mario Cazzola, Nicola A. Hanania, Mauro Maniscalco, and Maria Gabriella Matera have no conflicts of interest that are directly relevant to the content of this article.

- 120 references

Review

Eur Respir Rev

. 2023 Jun 7;32(168):230003.

doi: 10.1183/16000617.0003-2023. Print 2023 Jun 30.

The role of diet and nutrition in the management of COPD

Rosanne J H C G Beijers[1], Michael C Steiner[2], Annemie M W J Schols[3]
Affiliations expand

- PMID: 37286221

- PMCID: PMC10245132

- DOI: 10.1183/16000617.0003-2023

Free PMC article

Abstract

In 2014, the European Respiratory Society published a statement on nutritional assessment and therapy in COPD. Since then, increasing research has been performed on the role of diet and nutrition in the prevention and management of COPD. Here, we provide an overview of recent scientific advances and clinical implications. Evidence for a potential role of diet and nutrition as a risk factor in the development of COPD has been accumulating and is reflected in the dietary patterns of patients with COPD. Consuming a healthy diet should, therefore, be promoted in patients with COPD. Distinct COPD phenotypes have been identified incorporating nutritional status, ranging from cachexia and frailty to obesity. The importance of body composition assessment and the need for tailored nutritional screening instruments is further highlighted. Dietary interventions and targeted single or multi-nutrient supplementation can be beneficial when optimal timing is considered. The therapeutic window of opportunity for nutritional interventions during and recovering from an acute exacerbation and hospitalisation is underexplored.

Conflict of interest statement

Conflicts of interest: All authors have no conflicts of interest to declare.

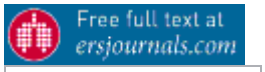
Comment in

- doi: 10.1183/16000617.0028-2023
- 86 references

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS



Proceed to details

Cite

Share

36

Review

Eur Respir Rev

-
-
-

. 2023 Jun 7;32(168):220222.
doi: 10.1183/16000617.0222-2022. Print 2023 Jun 30.

Pulmonary rehabilitation and physical interventions

Thierry Troosters[1,2], Wim Janssens[2,3], Heleen Demeyer[4,2,5], Roberto A Rabinovich[6,7]

Affiliations expand

- PMID: 37286219
- PMCID: PMC10245142
- DOI: 10.1183/16000617.0222-2022

Free PMC article

Abstract

Pulmonary rehabilitation has established a status of evidence-based therapy for patients with symptomatic COPD in the stable phase and after acute exacerbations. Rehabilitation should have the possibility of including different disciplines and be offered in several formats and lines of healthcare. This review focusses on the cornerstone intervention, exercise training, and how training interventions can be adapted to the limitations of patients. These adaptations may lead to altered cardiovascular or muscular training effects and/or may improve movement efficiency. Optimising pharmacotherapy (not the focus of this review) and oxygen supplements, whole-body low- and high-intensity training or interval training, and resistance (or neuromuscular electrical stimulation) training are important training modalities for these patients in order to accommodate cardiovascular and ventilatory impairments. Inspiratory muscle training and whole-body vibration may also be worthwhile interventions in selected patients. Patients with stable but symptomatic COPD, those who have suffered exacerbations and patients waiting for or who have received lung volume reduction or lung transplantation are good candidates. The future surely holds promise to further personalise exercise training interventions and to tailor the format of rehabilitation to the individual patient's needs and preferences.

Conflict of interest statement

Conflict of interest: None declared.

Comment in

- doi: 10.1183/16000617.0028-2023

- 116 references
- 2 figures

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

37
JAMA
•
•
•
. 2023 Jun 27;329(24):2114-2115.
doi: 10.1001/jama.2023.4390.

COPD Mortality, Goals-of-Care Conversations in Serious Illness, and Advocating for Climate Change Science and Gun Violence Prevention-Highlights From the American Thoracic Society Conference

Kristin Walter

- PMID: 37285141

- DOI: 10.1001/jama.2023.4390

No abstract available

Plain language summary

This Medical News article is an interview with Debra Boyer, MD, MHPE, chair of the 2023 American Thoracic Society Conference.

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

Observational Study

Adv Ther

. 2023 Jul;40(7):3263-3278.
doi: 10.1007/s12325-023-02524-y. Epub 2023 May 31.

EVELUT®: A Real-World, Observational Study Assessing Dyspnoea and Symptom Burden in COPD Patients Switched from LABA/ICS to LAMA/LABA or LAMA/LABA/ICS

Roland Buhl[1], Michael Dreher[2], Muriel Mattiucci-Guehlke[3], Rachel Emerson-Stadler[4], Sebastian Eckhardt[5], Christian Taube[6], Claus F Vogelmeier[7]
Affiliations expand

- PMID: 37256536

- PMCID: PMC10230142

- DOI: 10.1007/s12325-023-02524-y

Free PMC article

Abstract

Introduction: The Global Initiative for Chronic Obstructive Lung Disease (GOLD 2023) no longer recommends a long-acting β_2-agonist (LABA) plus inhaled corticosteroid (ICS) combination for the treatment of chronic obstructive pulmonary disease (COPD). In patients treated with LABA/ICS, who continue to experience symptoms without frequent or

severe exacerbations, GOLD now recommends switching to long-acting muscarinic antagonist (LAMA)/LABA instead of escalating to triple therapy (TT; LAMA/LABA/ICS), which previously was also a recommended option. EVELUT®, a real-life, observational study, compared these two treatment strategies in terms of symptom relief and health status improvement.

Methods: Patients with symptomatic COPD at low exacerbation risk (GOLD B) were switched, at their physicians' discretion, from LABA/ICS to either fixed-dose LAMA/LABA (tiotropium/olodaterol, Respimat® [Tio/Olo]) or fixed or free TT. Primary endpoints were change in modified Medical Research Council (mMRC) and COPD Assessment Test™ (CAT™) scores after 12 weeks.

Results: The safety set contained 463 patients (Tio/Olo, n = 329; TT, n = 134). In a propensity score-matched set (Tio/Olo, n = 121; TT, n = 121), improvement in mMRC score was similar in patients on Tio/Olo (-0.23; 95% confidence interval [CI] -0.11, -0.36) and TT (-0.25; 95% CI -0.13, -0.38). Improvement in total CAT score was slightly larger in patients on Tio/Olo (-3.45; 95% CI -2.45, -4.45) versus TT (-2.51; 95% CI -1.62, -3.40). In both groups, Physician's Global Evaluation scores increased, with 69-89% of patients satisfied with their treatment overall. Marginally more patients on Tio/Olo responded to treatment versus TT (Δ mMRC score ≥ 1; 25% vs. 22%; Δ CAT score ≥ 2, 68% vs. 56%).

Conclusion: In patients with symptomatic COPD at low exacerbation risk, treatment can be switched from LABA/ICS to LAMA/LABA without compromising clinical benefit, compared with escalating to LAMA/LABA/ICS. Switching from LABA/ICS to LAMA/LABA can provide symptom relief and improve health status without exposure to the risks associated with ICS.

Clinical trial registration: ClinicalTrials.gov: NCT03954132.

Keywords: COPD; EVELUT; LABA/ICS; LAMA/LABA; LAMA/LABA/ICS; Observational; Triple therapy.

Conflict of interest statement

Roland Buhl reports grants and personal fees from Boehringer Ingelheim, GlaxoSmithKline, Novartis and Roche, and personal fees from AstraZeneca, Berlin-Chemie, Chiesi, Cipla, Sanofi and Teva, outside the submitted work. Michael Dreher has received speaking fees from Actelion, AstraZeneca, Bayer, Berlin Chemie, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Hamilton, Heinen und Löwenstein, InterMune, Linde, Novartis, Pfizer, Philips Respironics, ResMed, Roche and Weinmann; honoraria for advising from Almirall, Boehringer Ingelheim, Hamilton, Linde, Novartis, Pfizer, Philips Respironics, ResMed and Roche; and grants from Linde, Philips Respironics, ResMed, Land NRW and the German Federal Ministry of Education and Research (BMBF). Muriel Mattiucci-Guehlke and Rachel

Emerson-Stadler are full-time employees of Boehringer Ingelheim. Sebastian Eckhardt works for Alcedis GmbH and was contracted by Boehringer Ingelheim for this work. Christian Taube reports no conflict of interest. Claus F Vogelmeier has given presentations at symposia and/or served on scientific advisory boards sponsored by Aerogen, AstraZeneca, Boehringer Ingelheim, CSL Behring, Chiesi, GlaxoSmithKline, Grifols, Insmed, Menarini, Novartis, Nuvaira, Roche, Sanofi and MedUpdate.

- 27 references
- 5 figures

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances, Associated dataexpand

FULL TEXT LINKS

SpringerLink FULL-TEXT ARTICLE
Proceed to details
Cite

Share
39

Editorial

Respir Investig
.
. 2023 Jul;61(4):485-486.
doi: 10.1016/j.resinv.2023.04.006. Epub 2023 May 17.

Anemia and iron deficiency in chronic obstructive pulmonary disease

Sumito Inoue[1]
Affiliations expand

- PMID: 37207515

- DOI: 10.1016/j.resinv.2023.04.006

No abstract available

Keywords: Anemia; Chronic obstructive pulmonary disease; iron deficiency.

Conflict of interest statement

Conflict of Interest SI received lecture fees from Astra Zeneca, KYORIN Pharmaceutical, and Novartis.

ERJ Open Res

. 2023 May 2;9(3):00476-2022.
doi: 10.1183/23120541.00476-2022. eCollection 2023 Jul.

Hospitalisation outcomes in pneumococcal-vaccinated *versus* - unvaccinated patients with exacerbation of COPD: results from the HOPE COPD Study

Rajesh Venkitakrishnan[1], Anand Vijay[1], Jolsana Augustine[2], Divya Ramachandran[2], Melcy Cleetus[2], Aparna S Nirmal[1], Susan John[2]
Affiliations expand

- PMID: 37143841

- PMCID: PMC10152243

- DOI: 10.1183/23120541.00476-2022

Free PMC article

Abstract

Background: Infectious exacerbations are crucial events that dictate the natural course of COPD patients. Pneumococcal vaccination has been shown to decrease incidence of community-acquired pneumonia in COPD patients. There is a paucity of data on outcomes of hospitalisation in pneumococcal-vaccinated COPD patients in comparison with unvaccinated subjects. The objectives of the present study were to evaluate the difference in hospitalisation outcomes in pneumococcal-vaccinated *versus* -unvaccinated COPD subjects hospitalised with acute exacerbation.

Methods: This was a prospective analytical study on 120 subjects hospitalised with acute COPD exacerbation. 60 patients with prior pneumococcal vaccination and 60 unvaccinated patients were recruited. Outcomes of hospitalisation such as mortality rate, need for assisted ventilation, length of hospital stay, need for intensive care unit (ICU) care and length of ICU stay were collected and compared between two groups with appropriate statistical tools.

Results: 60% of unvaccinated patients (36 out of 60) required assisted ventilation, whereas only 43.3% of vaccinated subjects (26 out of 60) needed assisted ventilation (p-value of 0.04). Most of the secondary outcomes were better in the vaccinated group. The mean$\pm_{SD}$ length of ICU stay in the vaccinated group was 0.67±1.11 days compared to 1.77±1.89 days in the unvaccinated group. The mean$\pm_{SD}$ length of hospital stay was 4.50±1.64 days and 5.47±2.03 days in the vaccinated and unvaccinated group, respectively (p-value of 0.005).

Conclusions: COPD patients who have received prior pneumococcal vaccination have better outcomes when they are hospitalised for an acute exacerbation. Pneumococcal vaccination may be recommended for all patients with COPD who are at risk of hospitalisation with acute exacerbation.

Conflict of interest statement

Conflicts of interest: None to declare.

- 30 references
- 3 figures

FULL TEXT LINKS

Proceed to details
Cite

Share
41

Review

Curr Opin Pulm Med
.
. 2023 Jul 1;29(4):259-269.
doi: 10.1097/MCP.0000000000000969. Epub 2023 May 4.

Telemedicine and home monitoring for COPD – a narrative review of recent literature

Vitalii Poberezhets[1], Marise J Kasteleyn[2,3]
Affiliations expand

- PMID: 37140553
- DOI: 10.1097/MCP.0000000000000969

Abstract

Purpose of review: Home monitoring is one of the methods of using telemedical technologies aimed to provide care at home and maintain a connection between patients and healthcare providers. The purpose of this review is to describe recent advancements in the use of home monitoring for the care and management of chronic obstructive pulmonary disease (COPD) patients.

Recent findings: Recent studies focused on remote monitoring for patients with COPD proved the positive effect of home monitoring interventions on the frequency of

exacerbations and unscheduled healthcare visits, duration of patients' physical activity, proved sensitivity and overall specificity of such interventions and highlighted the effectiveness of self-management.Assessing end-user experience revealed high satisfaction levels among patients and healthcare staff who used home monitoring interventions. The majority of physicians and staff responded positively about the interventions' facilitation of communication with patients. Moreover, healthcare staff considered such technologies useful for their practice.

Summary: Home monitoring for COPD patients improves medical care and disease management despite minor drawbacks and obstacles to its wide implementation. Involving end-users in evaluating and co-creating new telemonitoring interventions has the potential to improve the quality of remote monitoring for COPD patients in the near future.

- 24 references

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

42

Review

Eur Respir Rev

. 2023 May 3;32(168):220237.
doi: 10.1183/16000617.0237-2022. Print 2023 Jun 30.

Quality of life in patients with chronic respiratory failure on home mechanical ventilation

Rebecca F D'Cruz[1,2], Georgios Kaltsakas[3,2], Eui-Sik Suh[3,4], Nicholas Hart[3,2]
Affiliations expand

- PMID: 37137507

- PMCID: PMC10155047

- DOI: 10.1183/16000617.0237-2022

Free PMC article

Abstract

Home mechanical ventilation (HMV) is a treatment for chronic respiratory failure that has shown clinical and cost effectiveness in patients with underlying COPD, obesity-related respiratory failure and neuromuscular disease (NMD). By treating chronic respiratory failure with adequate adherence to HMV, improvement in patient-reported outcomes including health-related quality of life (HRQoL) have been evaluated using general and disease-specific quantitative, semi-qualitative and qualitative methods. However, the treatment response in terms of trajectory of change in HRQoL is not uniform across the restrictive and obstructive disease groups. In this review, the effect of HMV on HRQoL across the domains of symptom perception, physical wellbeing, mental wellbeing, anxiety, depression, self-efficacy and sleep quality in stable and post-acute COPD, rapidly progressive NMD (such as amyotrophic lateral sclerosis), inherited NMD (including Duchenne muscular dystrophy) and obesity-related respiratory failure will be discussed.

Conflict of interest statement

Conflict of interest: R.F D'Cruz has received consulting fees from ResMed and AstraZeneca; and payment or honoraria from ResMed and Fisher & Paykel, all outside the submitted work. Conflict of interest: G. Kaltsakas has nothing to disclose. Conflict of interest: E-S. Suh has received grants or contracts from Philips Respironics; and consulting fees from Philips, all outside the submitted work. Conflict of interest: N. Hart has received consulting fees from ResMed and from Philips; payment or honoraria from Fisher & Paykel and Philips; and support for attending meetings and/or travel from Fisher & Paykel, all outside the submitted work; N. Hart has patents planned, issued or pending: Myotrace Patent, held by Guy's and St Thomas' Foundation Trust.

- 126 references

- 3 figures

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

Am J Med Sci

. 2023 Jul;366(1):76-78.
doi: 10.1016/j.amjms.2023.04.001. Epub 2023 Apr 10.

Outcomes of hospitalized patients with COPD exacerbation with bronchiectasis compared to COPD exacerbation and bronchiectasis exacerbation patients

Saqib H Baig[1], Michael J Stephen[2]
Affiliations expand

- PMID: 37040828

- DOI: 10.1016/j.amjms.2023.04.001

No abstract available

Conflict of interest statement

Declaration of Competing Interests No conflict of interests for all authors.

J Electrocardiol
.
. 2023 Jul-Aug;79:100-107.
doi: 10.1016/j.jelectrocard.2023.03.085. Epub 2023 Apr 3.

Relationship between abnormal P-wave axis, chronic obstructive pulmonary disease and mortality in the general population

Richard Kazibwe[1], Muhammad Imtiaz Ahmad[2], T K Luqman-Arafat[3], Haiying Chen[4], Joseph Yeboah[5], Elsayed Z Soliman[6]
Affiliations expand

- PMID: 37030109

- DOI: 10.1016/j.jelectrocard.2023.03.085

Abstract

Background: It is unclear whether the presence of a vertical P-wave axis on electrocardiogram modifies the association of COPD with mortality.

Objective: To examine the association and interaction of abnormal P-wave axis and COPD with mortality.

Study design and methods: The analysis included 7359 with ECG data from the Third National Health and Nutrition Examination Survey (NHANES-III) who were free of cardiovascular disease (CVD) at enrollment. Abnormal P-wave axis (aPWA) was defined as values above 75°. COPD was self-reported as either a diagnosis of emphysema or chronic bronchitis. National Death Index was used to identify the date of death and cause of death. Using multivariable Cox proportional hazard analysis, we examined the association of COPD with all-cause mortality by aPWA status.

Results: Over a median follow-up of 14 years, 2435 deaths occurred. Participants with concomitant presence of aPWA and COPD experienced higher death rates (73.9 per 1000 person-years (PY)) compared to either COPD or aPWA alone (36.4 per 1000 PY and 31.1 per 1000 PY), respectively. In multivariable-adjusted models, a stronger association between COPD and mortality was noted in the presence compared to the absence of aPWA (HR 95% CI): 1.71 (1.37-2.13) vs. 1.22(1.00-1.49), respectively (interaction P-value = 0.02). Similarly, a stronger association between aPWA and mortality was observed in the presence compared to the absence of COPD (HR 95% CI): 1.66(1.26-2.19) vs. 1.18(1.06-1.31), respectively (interaction P-value = 0.02). Similar higher death rates and mortality risk was observed when spirometry-confirmed COPD and aPWA were present together than in isolation.

Conclusion: The concomitant presence of aPWA and COPD leads to a significantly higher mortality rate compared to the presence either COPD or aPWA alone as a clinical variable. P-wave axis, reported routinely on ECG printout, can potentially identify patients with COPD who need intensive control of risk factors and disease management.

Keywords: And nutrition examination survey; COPD; Mortality; P-wave axis; The third National Health.

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

. 2023 Apr 5;32(168):220207.
doi: 10.1183/16000617.0207-2022. Print 2023 Jun 30.

The role of telemonitoring in patients on home mechanical ventilation

Ries van den Biggelaar[1], Anda Hazenberg[2,3], Marieke L Duiverman[4,3]
Affiliations expand

- PMID: 37019457

- PMCID: PMC10074164

- DOI: 10.1183/16000617.0207-2022

Free PMC article

Abstract

There is a growing number of patients being treated with long-term home mechanical ventilation (HMV). This poses a challenge for the healthcare system because in-hospital resources are decreasing. The application of digital health to assist HMV care might help. In this narrative review we discuss the evidence for using telemonitoring to assist in initiation and follow-up of patients on long-term HMV. We also give an overview of available technology and discuss which parameters can be measured and how often this should be done. To get a telemonitoring solution implemented in clinical practice is often complex; we discuss which factors contribute to that. We discuss patients' opinions regarding the use of telemonitoring in HMV. Finally, future perspectives for this rapidly growing and evolving field will be discussed.

Conflict of interest statement

Conflict of interest: M.L. Duiverman has received research grants from RESMED, Philips, Lowenstein, Vivisol, Sencure and Fisher & Paykel and speaking fees from Chiesi and Breas, outside the submitted work. The remaining authors have nothing to disclose.

Comment in

- New insights into acute and chronic respiratory failure: highlights from the Respiratory Failure and Mechanical Ventilation Conference 2022.
  Heunks L, Duiverman ML. Eur Respir Rev. 2023 Apr 5;32(168):230027. doi: 10.1183/16000617.0027-2023. Print 2023 Jun 30. PMID: 37019460 **Free PMC article.**

- Cited by 1 article
- 55 references
- 1 figure

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

Clin Lung Cancer

. 2023 Jul;24(5):407-414.
doi: 10.1016/j.cllc.2023.02.006. Epub 2023 Mar 4.

Differences in VA and Non-VA Pulmonary Nodules: All Evaluations Are not Created Equal

Melissa L New[1], Erin A Hirsch[2], William J Feser[2], Stephen P Malkoski[3], Kavita Garg[4], York E Miller[5], Anna E Baron[2]
Affiliations expand

- PMID: 37012147

- PMCID: PMC10293033 (available on 2024-07-01)

- DOI: 10.1016/j.cllc.2023.02.006

Abstract

Background: Indeterminate pulmonary nodules present a common challenge for clinicians who must recommend surveillance or intervention based on an assessed risk of malignancy.

Patients and methods: In this cohort study, patients presenting for indeterminate pulmonary nodule evaluation were enrolled at sites participating in the Colorado SPORE in Lung Cancer. They were followed prospectively and included for analysis if they had a definitive malignant diagnosis, benign diagnosis, or radiographic resolution or stability of their nodule for > 2 years.

Results: Patients evaluated at the Veterans Affairs (VA) and non-VA sites were equally as likely to have a malignant diagnosis (48%). The VA cohort represented a higher-risk group than the non-VA cohort regarding smoking history and chronic obstructive pulmonary disease (COPD). There were more squamous cell carcinoma diagnoses among VA malignant nodules (25% vs. 10%) and a later stage at diagnosis among VA patients. Discrimination and calibration of risk calculators produced estimates that were wide-ranging and different when comparing between risk score calculators as well as between VA/non-VA cohorts. Application of current American College of Chest Physicians guidelines to our groups could have resulted in inappropriate resection of 12% of benign nodules.

Conclusion: Comparison of VA with non-VA patients shows important differences in underlying risk, histology of malignant nodules, and stage at diagnosis. This study highlights the challenge in applying risk calculators to a clinical setting, as the model discrimination and calibration were variable between calculators and between our higher-risk VA and lower-risk non-VA groups.

Microabstract: Risk stratification and management of indeterminate pulmonary nodules (IPNs) is a common clinical problem. In this prospective cohort study of 282 patients with IPNs from Veterans Affairs (VA) and non-VA sites, we found differences in patient and nodule characteristics, histology and diagnostic stage, and risk calculator performance. Our findings highlight challenges and shortcomings of current IPN management guidelines and tools.

Keywords: Lung cancer; Pulmonary Nodule; Risk calculator; Smoking; Veterans.

Published by Elsevier Inc.

Conflict of interest statement

Disclosure No author on this paper has a financial disclosure or conflict of interest with the work presented here.

Editorial

Thorax

. 2023 Jul;78(7):635-636.
doi: 10.1136/thorax-2023-220030. Epub 2023 Mar 27.

Respiratory effects of air pollution: time to stop this deadly trajectory

Sara De Matteis[1,2]

Affiliations expand

- PMID: 36972978

- DOI: 10.1136/thorax-2023-220030

No abstract available

Keywords: Asthma; Asthma Epidemiology; COPD epidemiology; Lung Cancer.

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

Meta-Analysis

Heart Lung
.
.
.
. 2023 Jul-Aug;60:116-126.
doi: 10.1016/j.hrtlng.2023.02.016. Epub 2023 Mar 23.

The use of high-flow nasal cannula in patients with chronic obstructive pulmonary disease under exacerbation and stable phases: A systematic review and meta-analysis

Huan Yang[1], Dong Huang[1], Jian Luo[2], Zongan Liang[3], Jie Li[4]
Affiliations expand

- PMID: 36965283

- DOI: 10.1016/j.hrtlng.2023.02.016

Free article

Abstract

Background: High-flow nasal cannula (HFNC) has been increasingly utilized in patients with chronic obstructive pulmonary disease (COPD); however, the effects on reducing the need for intubation or reintubation remain unclear.

Objectives: We aimed to investigate whether HFNC therapy was superior to conventional oxygen therapy (COT) or noninvasive ventilation (NIV) in patients with COPD.

Methods: A literature search was performed in electronic databases until October 1st, 2022. The primary outcome was the need for intubation/reintubation. All analyses were performed using R (version 4.0.3) and STATA SE (version 15.1).

Results: When HFNC therapy was compared with NIV in patients with COPD under initial respiratory support and postextubation, no significant differences were found in the risk of intubation (RR 0.84, 95% CI 0.36 to 1.98) and reintubation (RR 1.35, 95% CI 0.73 to 2.50). Compared to NIV, HFNC therapy did not decrease the partial pressure of carbon dioxide or increase the partial pressure of oxygen to the fraction of inspired oxygen. However, HFNC therapy was associated with a lower incidence of skin breakdown (RR 0.52, 95% CI 0.39 to 0.69) and a higher comfort score (SMD 0.90, 95% CI 0.60 to 1.20) than NIV. When HFNC therapy was compared with COT during initial respiratory treatment for COPD exacerbation, a lower risk of treatment failure was found (RR 0.58, 95% CI 0.37 to 0.89). When HFNC therapy was compared with long-term oxygen therapy, quality of life (measured by SGRQ-C) was significantly improved (SMD -0.42, 95% CI -0.69 to -0.14).

Conclusion: HFNC therapy might be used as an alternative to NIV for COPD exacerbation with mild-moderate hypercapnia under close monitoring and is a potential domiciliary treatment for stable COPD.

Keywords: Chronic obstructive pulmonary disease (COPD); Conventional oxygen therapy (COT); High-flow nasal cannula (HFNC); Intubation; Noninvasive ventilation (NIV).

Conflict of interest statement

Declaration of Competing Interest Dr. Li discloses research funding from Fisher & Paykel Healthcare Ltd, Aerogen Ltd, American Association for Respiratory Care, and Rice Foundation, and speaker fees from American Association for Respiratory Care, Aerogen Ltd, Heyer Ltd, and Fisher & Paykel Healthcare Ltd. Other authors declare that they have no competing interests.

- Cited by 1 article

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

ELSEVIER OPEN ACCESS

Proceed to details

Cite

Share

49

J Thorac Cardiovasc Surg

. 2023 Jul;166(1):e23-e37.
doi: 10.1016/j.jtcvs.2023.03.009. Epub 2023 Mar 17.

Intratracheally injected human-induced pluripotent stem cell-derived pneumocytes and endothelial cells engraft in the distal lung and ameliorate emphysema in a rat model

Wafa Altalhi[1], Tong Wu[2], Gregory R Wojtkiewicz[3], Sydney Jeffs[2], Kenji Miki[2], Harald C Ott[4]
Affiliations expand

- PMID: 36933786

- DOI: 10.1016/j.jtcvs.2023.03.009

Abstract

Objectives: Pulmonary emphysema is characterized by the destruction of alveolar units and reduced gas exchange capacity. In the present study, we aimed to deliver induced

pluripotent stem cell-derived endothelial cells and pneumocytes to repair and regenerate distal lung tissue in an elastase-induced emphysema model.

Methods: We induced emphysema in athymic rats via intratracheal injection of elastase as previously reported. At 21 and 35 days after elastase treatment, we suspended 80 million induced pluripotent stem cell-derived endothelial cells and 20 million induced pluripotent stem cell-derived pneumocytes in hydrogel and injected the mixture intratracheally. On day 49 after elastase treatment, we performed imaging, functional analysis, and collected lungs for histology.

Results: Using immunofluorescence detection of human-specific human leukocyte antigen 1, human-specific CD31, and anti--green fluorescent protein for the reporter labeled pneumocytes, we found that transplanted cells engrafted in 14.69% ± 0.95% of the host alveoli and fully integrated to form vascularized alveoli together with host cells. Transmission electron microscopy confirmed the incorporation of the transplanted human cells and the formation of a blood-air barrier. Human endothelial cells formed perfused vasculature. Computed tomography scans revealed improved vascular density and decelerated emphysema progression in cell-treated lungs. Proliferation of both human and rat cell was higher in cell-treated versus nontreated controls. Cell treatment reduced alveolar enlargement, improved dynamic compliance and residual volume, and improved diffusion capacity.

Conclusions: Our findings suggest that human induced pluripotent stem cell-derived distal lung cells can engraft in emphysematous lungs and participate in the formation of functional distal lung units to ameliorate the progression of emphysema.

Keywords: cell therapy; distal lung tissue regeneration; emphysema; endothelial cells; induced pluripotent stem cells; pneumocytes.

. 2023 Jul;72(3):394-401.
doi: 10.1016/j.alit.2023.01.004. Epub 2023 Mar 1.

Questionnaire for diagnosing asthma-COPD overlap in COPD: Development of ACO screening questionnaire (ACO-Q)

Yuki Suzuki[1], Hiroyuki Nagase[2], Hikaru Toyota[1], Sho Ohyatsu[3], Konomi Kobayashi[1], Yuri Takeshita[1], Yuuki Uehara[1], Saya Hattori[1], Mana Ishizuka[1], Hirokazu Sakasegawa[1], Michio Kuramochi[1], Tadashi Kohyama[3], Naoya Sugimoto[1]
Affiliations expand

- PMID: 36868950

- DOI: 10.1016/j.alit.2023.01.004

Free article

Abstract

Background: The considerable prevalence and worse outcomes of asthma-COPD overlap (ACO) in COPD have been reported, and optimal introduction of ICS is essential for ACO. However, diagnostic criteria for ACO consist of multiple laboratory tests, which is challenging during this COVID-19 era. The purpose of this study was to create a simple questionnaire to diagnose ACO in patients with COPD.

Methods: Among 100 COPD patients, 53 were diagnosed with ACO based on the Japanese Respiratory Society Guidelines for ACO. Firstly, 10 candidate questionnaire items were generated and further selected by a logistic regression model. An integer-based scoring system was generated based on the scaled estimates of items.

Results: Five items, namely a history of asthma, wheezing, dyspnea at rest, nocturnal awakening, and weather- or season-dependent symptoms, contributed significantly to the diagnosis of ACO in COPD. History of asthma was related to FeNO >35 ppb. Two points were assigned to history of asthma and 1 point to other items in the ACO screening questionnaire (ACO-Q), and the area under the receiver operating characteristic curve was 0.883 (95% CI: 0.806-0.933). The best cutoff point was 1 point, and the positive predictive

value was 100% at a cutoff of 3 points or higher. The result was reproducible in the validation cohort of 53 patients with COPD.

Conclusions: A simple questionnaire, ACO-Q, was developed. Patients with scores ≥3 could be reasonably recommended to be treated as ACO, and additional laboratory testing would be recommended for patients with 1 and 2 points.

Keywords: Asthma; Asthma-COPD overlap; COPD; FeNO; Questionnaire.

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

51

Review

Heart Lung

. 2023 Jul-Aug;60:8-14.
doi: 10.1016/j.hrtlng.2023.02.017. Epub 2023 Mar 1.

The impact of chronic obstructive pulmonary disease on the prognosis outcomes of patients with percutaneous coronary intervention or coronary artery bypass grafting: A meta-analysis

Yanqi Li[1], Huiqiu Zheng[1], Wenyan Yan[1], Ning Cao[1], Tao Yan[1], Hao Zhu[1], Han Bao[2]

Affiliations expand

- PMID: 36868093

- DOI: 10.1016/j.hrtlng.2023.02.017

Abstract

Background: Coronary artery disease (CAD) is one of the main types of cardiovascular disease and is characterized by myocardial ischemia as a result of narrowing of the coronary arteries.

Objective: To evaluate the impact of chronic obstructive pulmonary disease (COPD) on outcomes in patients with CAD treated by percutaneous coronary intervention (PCI) or coronary artery bypass grafting (CABG).

Methods: We searched PubMed, Embase, Web of Science, and Cochrane Library for observational studies and post-hoc analyses of randomized controlled trials published before Jan 20, 2022, in English. Adjusted odds ratios (ORs), risk ratios (RRs), and hazard ratios (HRs) for short-term outcomes (in-hospital and 30-day all-cause mortality) and long-term outcomes (all-cause mortality, cardiac death, major adverse cardiac events) were extracted or transformed.

Results: Nineteen studies were included. The risk of short-term all-cause mortality was significantly higher in patients with COPD than in those without COPD (RR 1.42, 95% CI 1.05-1.93), as were the risks of long-term all-cause mortality (RR 1.68, 95% CI 1.50-1.88) and long-term cardiac mortality (HR 1.84, 95% CI 1.41-2.41). There was no significant between-group difference in the long-term revascularization rate (HR 1.01, 95% CI 0.99-1.04) or in short-term and long-term stroke rates (OR 0.89, 95% CI 0.58-1.37 and HR 1.38, 95% CI 0.97-1.95). Operation significantly affected heterogeneity and combined results for long-term mortality (CABG, HR 1.32, 95% CI 1.04-1.66; PCI, HR 1.84, 95% CI 1.58-2.13).

Conclusions: COPD was independently associated with poor outcomes after PCI or CABG after adjustment for confounders.

Keywords: Chronic obstructive pulmonary disease; Coronary artery bypass grafting; Coronary artery disease; Percutaneous coronary intervention.

Conflict of interest statement

Declaration of Competing Interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

J Pain Symptom Manage

. 2023 Jul;66(1):e1-e34.
doi: 10.1016/j.jpainsymman.2023.01.014. Epub 2023 Feb 14.

Specialist Palliative Care Referral Practices Among Oncologists, Cardiologists, Respirologists: A Comparison of National Survey Studies

Michael Bonares[1], Lisa W Le[2], Camilla Zimmermann[3], Kristen Wentlandt[4]
Affiliations expand

- PMID: 36796528

- DOI: 10.1016/j.jpainsymman.2023.01.014

Abstract

Context: Although patients with nonmalignant diseases have palliative care needs similar to those of cancer patients, they are less likely to receive specialist palliative care (SPC).

Referral practices of oncologists, cardiologists, and respirologists could provide insight into reasons for this difference.

Objectives: We compared referral practices to SPC among cardiologists, respirologists, and oncologists, discerned from surveys (the Canadian Palliative Cardiology/Respirology/Oncology Surveys).

Methods: Descriptive comparison of survey studies; multivariable linear regression analysis of association between specialty and referral frequency. Surveys for each specialty were disseminated to physicians across Canada in 2010 (oncologists) and 2018 (cardiologists, respirologists).

Results: The combined response rate of the surveys was 60.9% (1568/2574): 603 oncologists, 534 cardiologists, and 431 respirologists. Perceived availability of SPC services was higher for cancer than for noncancer patients. Oncologists were more likely to make a referral to SPC for a symptomatic patient with a prognosis of <one year. Cardiologists and respirologists were more likely to make a referral to services at a prognosis of <one month; and to refer earlier if palliative care was renamed supportive care. Cardiologists and respirologists had a lower frequency of referrals than oncologists, adjusting for demographic and professional characteristics ($P < 0.0001$ in both groups).

Conclusion: For cardiologists and respirologists in 2018, perceived availability of SPC services was poorer, timing of referral later, and frequency of referral lower than among oncologists in 2010. Further research is needed to identify reasons for differences in referral practices and to develop interventions to overcome them.

Keywords: Palliative care; cancer; chronic obstructive pulmonary disease; health care disparity; heart failure; referral.

. 2023 Jul;78(7):698-705.
doi: 10.1136/thorax-2022-219489. Epub 2023 Feb 2.

Air pollution associated with incidence and progression trajectory of chronic lung diseases: a population-based cohort study

Xiaojie Wang[1], Lan Chen[1], Miao Cai[1], Fei Tian[1], Hongtao Zou[1], Zhengmin Min Qian[2], Zilong Zhang[1], Haitao Li[3], Chongjian Wang[4], Steven W Howard[5], Yang Peng[6,7], Li'e Zhang[6,7], Elizabeth Bingheim[2], Hualiang Lin[8], Yunfeng Zou[9,10]
Affiliations expand

- PMID: 36732083

- DOI: 10.1136/thorax-2022-219489

Abstract

Background: No prior study has examined the effects of air pollution on the progression from healthy to chronic lung disease, subsequent chronic lung multimorbidity and further to death.

Methods: We used data from the UK Biobank of 265 506 adults free of chronic lung disease at recruitment. Chronic lung multimorbidity was defined as the coexistence of at least two chronic lung diseases, including asthma, chronic obstructive pulmonary disease and lung cancer. The concentrations of air pollutants were estimated using land-use regression models. Multistate models were applied to assess the effect of air pollution on the progression of chronic lung multimorbidity.

Results: During a median follow-up of 11.9 years, 13 863 participants developed at least one chronic lung disease, 1055 developed chronic lung multimorbidity and 12 772 died. We observed differential associations of air pollution with different trajectories of chronic lung multimorbidity. Fine particulate matter showed the strongest association with all five transitions, with HRs (95% CI) per 5 μg/m^3 increase of 1.31 (1.22 to 1.42) and 1.27 (1.01 to 1.57) for transitions from healthy to incident chronic lung disease and from incident

chronic lung disease to chronic lung multimorbidity, and 1.32 (1.21 to 1.45), 1.24 (1.01 to 1.53) and 1.91 (1.14 to 3.20) for mortality risk from healthy, incident chronic lung disease and chronic lung multimorbidity, respectively.

Conclusion: Our study provides the first evidence that ambient air pollution could affect the progression from free of chronic lung disease to incident chronic lung disease, chronic lung multimorbidity and death.

Keywords: COPD epidemiology; asthma epidemiology; lung cancer.

Conflict of interest statement

Competing interests: None declared.

- Cited by 1 article

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

FULL TEXT LINKS

BMJ Full Text

Proceed to details

Cite

Share

54

J Cardiopulm Rehabil Prev

. 2023 Jul 1;43(4):270-276.
doi: 10.1097/HCR.0000000000000766. Epub 2023 Jan 12.

Home-Based Pulmonary Rehabilitation and Health Coaching in Fibrotic Interstitial Lung Disease:

IMPLEMENTATION AND QUALITATIVE ASSESSMENT OF A PILOT TELEHEALTH PROGRAM

Jennifer D Duke[1], Teng Moua, Jennifer L Ridgeway, Madison Roy, Maria Benzo, Johanna Hoult, Roberto Benzo
Affiliations expand

- PMID: 36728336

- PMCID: PMC10290571 (available on 2024-07-01)

- DOI: 10.1097/HCR.0000000000000766

Abstract

Purpose: Pulmonary rehabilitation is a behavioral modification intervention shown to improve exercise tolerance and patient-reported quality of life in patients with fibrotic interstitial lung disease. Home-based rehabilitation may provide easier access for those who struggle to complete center-based rehabilitation programs due to increased symptom burden or frailty.

Methods: We present the quantitative and qualitative findings of a pilot study of 21 patients with fibrotic interstitial lung disease who participated in a 12-wk home-based pulmonary rehabilitation program with activity monitoring and health coaching.

Results: Pre- and post-intervention patient-reported outcome questionnaires suggested improvements in dyspnea and respiratory-related quality of life but were underpowered to meet statistical significance. Half had increases in mean daily step counts while a quarter declined because of disease progression. Qualitative analysis of semistructured participant interviews suggested a significant baseline disease burden with related secondary impacts, including anxiety regarding disease progression and prognosis. Many who participated had no specific program expectations or self-determined goals but still found the program impactful, particularly on their abilities to adapt and cope with the disease.

Conclusion: Our study suggests feasibility in a diverse set of patients with varying severity and diagnostic subtypes. We also provide quantitative and qualitative aspects of program impact on patient well-being and highlight the complex interaction between measured physical and self-reported outcomes and disease experience.

Conflict of interest statement

The authors declare no conflicts of interest.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grant supportexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

55

Am J Prev Med

. 2023 Jul;65(1):126-130.
doi: 10.1016/j.amepre.2023.01.002. Epub 2023 Jan 25.

Percentage Up to Date With Chest Computed Tomography Among Those Eligible for Lung Cancer Screening

Andrea N Burnett-Hartman[1], Nikki M Carroll[2], Jennifer M Croswell[3], Robert T Greenlee[4], Stacey A Honda[5], Christine M Neslund-Dudas[6], Roger Y Kim[7], Katharine A Rendle[7], Anil Vachani[7], Debra P Ritzwoller[2]

Affiliations expand

- PMID: 36707314

- PMCID: PMC10293017 (available on 2024-07-01)

- DOI: 10.1016/j.amepre.2023.01.002

Abstract

Introduction: Authors aimed to calculate the percentage up-to-date with testing in the context of lung cancer screening across 5 healthcare systems and evaluate differences according to patient and health system characteristics.

Methods: Lung cancer screening–eligible individuals receiving care within the five systems in the Population-based Research to Optimize the Screening Process Lung consortium from October 1, 2018 to September 30, 2019 were included in analyses. Data collection was completed on June 15, 2021; final analyses were completed on April 1, 2022. Chest computed tomography scans and patient characteristics were obtained through electronic health records and used to calculate the percentage completing a chest computed tomography scan in the previous 12 months (considered up-to-date). The association of patient and healthcare system factors with being up-to-date was evaluated with adjusted prevalence ratios and 95% CIs using log-binomial regression models.

Results: There were 29,417 individuals eligible for lung cancer screening as of September 30, 2019; 8,333 (28.3%) were up-to-date with testing. Those aged 65-74 years (prevalence ratio=1.19; CI=1.15, 1.24, versus ages 55-64), those with chronic obstructive pulmonary disease (prevalence ratio=2.05; CI=1.98, 2.13), and those in higher SES census tracts (prevalence ratio=1.22; CI=1.16, 1.30, highest quintile versus lowest) were more likely to be up-to-date. Currently smoking (prevalence ratio=0.91; CI=0.88, 0.95), having a BMI ≥30 kg/m^2 (prevalence ratio=0.83; CI=0.77, 0.88), identifying as Native Hawaiian or other Pacific Islander (prevalence ratio=0.79; CI=0.68, 0.92), and having a decentralized lung cancer screening program (prevalence ratio=0.77; CI=0.74, 0.80) were inversely associated with being up-to-date.

Conclusions: The percentage up-to-date with testing among those eligible for lung cancer screening is well below up-to-date estimates for other types of cancer screening, and disparities in lung cancer screening participation remain.

Conflict of interest statement

Conflict of Interest Disclosures: Dr. Burnett-Hartman reports research funding paid to her institution from Biodesix, outside the submitted work. Dr. Kim reports research funding paid to his institution from Siemens, outside of the submitted work. Dr. Rendle reports grant funding paid to her institution from Pfizer and AstraZeneca, outside of the submitted work, and serves as a paid advisor for Merck, outside of the submitted work. Dr. Vachani reports personal fees as a scientific advisor to the Lung Cancer Initiative at Johnson & Johnson and grants to his institution from MagArray, Inc., Precyte, Inc., and Optellum Ltd.

outside of the submitted work. Dr. Vachani is also an advisory board member of the Lungevity Foundation (unpaid). All other authors have no financial disclosures.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grant supportexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

56

J Thorac Imaging

. 2023 Jul 1;38(4):W52-W63.
doi: 10.1097/RTI.0000000000000698. Epub 2023 Jan 20.

Automated Coronary Artery Calcium and Quantitative Emphysema in Lung Cancer Screening: Association With Mortality, Lung Cancer Incidence, and Airflow Obstruction

Maurizio Balbi[1,2], Federica Sabia[1], Roberta E Ledda[1,2], Gianluca Milanese[2], Margherita Ruggirello[3], Mario Silva[2], Alfonso V Marchianò[3], Nicola Sverzellati[2], Ugo Pastorino[1]
Affiliations expand

- PMID: 36656144

- PMCID: PMC10287055

- DOI: 10.1097/RTI.0000000000000698

Free PMC article

Abstract

Purpose: To assess automated coronary artery calcium (CAC) and quantitative emphysema (percentage of low attenuation areas [%LAA]) for predicting mortality and lung cancer (LC) incidence in LC screening. To explore correlations between %LAA, CAC, and forced expiratory value in 1 second (FEV 1) and the discriminative ability of %LAA for airflow obstruction.

Materials and methods: Baseline low-dose computed tomography scans of the BioMILD trial were analyzed using an artificial intelligence software. Univariate and multivariate analyses were performed to estimate the predictive value of %LAA and CAC. Harrell C -statistic and time-dependent area under the curve (AUC) were reported for 3 nested models (Model survey : age, sex, pack-years; Model survey-LDCT : Model survey plus %LAA plus CAC; Model final : Model survey-LDCT plus selected confounders). The correlations between %LAA, CAC, and FEV 1 and the discriminative ability of %LAA for airflow obstruction were tested using the Pearson correlation coefficient and AUC-receiver operating characteristic curve, respectively.

Results: A total of 4098 volunteers were enrolled. %LAA and CAC independently predicted 6-year all-cause (Model final hazard ratio [HR], 1.14 per %LAA interquartile range [IQR] increase [95% CI, 1.05-1.23], 2.13 for CAC ≥400 [95% CI, 1.36-3.28]), noncancer (Model final HR, 1.25 per %LAA IQR increase [95% CI, 1.11-1.37], 3.22 for CAC ≥400 [95%CI, 1.62-6.39]), and cardiovascular (Model final HR, 1.25 per %LAA IQR increase [95% CI, 1.00-1.46], 4.66 for CAC ≥400, [95% CI, 1.80-12.58]) mortality, with an increase in concordance probability in Model survey-LDCT compared with Model survey ($P < 0.05$). No significant association with LC incidence was found after adjustments. Both biomarkers negatively correlated with FEV 1 ($P < 0.01$). %LAA identified airflow obstruction with a moderate discriminative ability (AUC, 0.738).

Conclusions: Automated CAC and %LAA added prognostic information to age, sex, and pack-years for predicting mortality but not LC incidence in an LC screening setting. Both biomarkers negatively correlated with FEV 1 , with %LAA enabling the identification of airflow obstruction with moderate discriminative ability.

Conflict of interest statement

The authors declare no conflicts of interest.

- Cited by 1 article

- 45 references
- 8 figures

SUPPLEMENTARY INFO

MeSH terms, Substances, Grant supportexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

57

Review

J Cardiopulm Rehabil Prev

. 2023 Jul 1;43(4):259-269.
doi: 10.1097/HCR.0000000000000764. Epub 2022 Dec 14.

Smoking Cessation Interventions for Patients With Chronic Obstructive Pulmonary Disease: A NARRATIVE REVIEW WITH IMPLICATIONS FOR PULMONARY REHABILITATION

Sulamunn R M Coleman[1], Katherine E Menson, David A Kaminsky, Diann E Gaalema
Affiliations expand

- PMID: 36515573

- PMCID: PMC10264547 (available on 2024-07-01)

- DOI: 10.1097/HCR.0000000000000764

Abstract

Purpose: Reducing disease burden in patients with chronic obstructive pulmonary disease (COPD) focuses, in part, on helping patients become more functional through programs such as pulmonary rehabilitation (PR). Smoking cessation may be a prerequisite or component of PR, and determining which smoking interventions (eg, behavioral, pharmacotherapy, combination) are most effective can help guide efforts to extend them to patients with COPD. The purpose of this narrative review was to summarize evidence from studies testing smoking cessation interventions in patients with COPD and discuss how these interventions may be integrated into PR programs.

Review methods: Searches were conducted in the PubMed and Web of Science databases. Search terms included "(smoking cessation) AND (RCT OR clinical trial OR intervention) AND (pulmonary OR chronic bronchitis OR emphysema OR COPD)." Published original studies were included if they used a prospective, experimental design, tested a smoking cessation intervention, reported smoking cessation rate, and included patients with COPD or a subgroup analysis focused on smokers with COPD.

Summary: Twenty-seven distinct studies were included in the review. Most studies tested multitreatment smoking cessation interventions involving some form of counseling in combination with pharmacotherapy and/or health education. Overall, smoking cessation interventions may help promote higher rates of smoking abstinence in patients with COPD, particularly multifaceted interventions that include intensive counseling (eg, individual, group, and telephone support), smoking cessation medication or nicotine replacement therapy, and health education.

Conflict of interest statement

The authors declare no conflicts of interest.

J Thorac Cardiovasc Surg
.
. 2023 Jul;166(1):251-262.e3.
doi: 10.1016/j.jtcvs.2022.10.050. Epub 2022 Nov 15.

Pulmonary Open, Robotic, and Thoracoscopic Lobectomy study: Outcomes and risk factors of conversion during minimally invasive lobectomy

Luis J Herrera[1], Lana Y Schumacher[2], Matthew G Hartwig[3], Charles T Bakhos[4], Rishindra M Reddy[5], Eric Vallières[6], Michael S Kent[7]
Affiliations expand

- PMID: 36509569

- DOI: 10.1016/j.jtcvs.2022.10.050

Free article

Abstract

Objective: Conversion to thoracotomy continues to be a concern during minimally invasive lobectomy. The aim of this propensity-matched cohort study is to analyze the outcomes and risk factors of intraoperative conversion during video-assisted thoracoscopic surgery (VATS) and robotic lobectomy (RL).

Methods: Data from consecutive lobectomy cases performed for clinical stage IA to IIIA lung cancer was retrospectively collected from the Pulmonary Open, Robotic, and Thoracoscopic Lobectomy study consortium of 21 institutions from 2011 to 2019. The propensity-score method of inverse-probability of treatment weighting was used to balance the baseline characteristics across surgical approaches. Univariate logistic

regression models were applied to test risk factors for conversion. Multivariable logistic regression analysis was conducted using a stepwise model selection method.

Results: Seven thousand two hundred sixteen patients undergoing lobectomy were identified: RL (n = 2968), VATS (n = 2831), and open lobectomy (n = 1417). RL had lower conversion rate compared with VATS (3.6% vs 12.9%; P < .0001). In the multivariable regression model, tumor size and neoadjuvant therapy were the most significant risk factors for conversion, followed by prior cardiac surgery, congestive heart failure, chronic obstructive pulmonary disease, VATS approach, male gender, body mass index, and forced expiratory volume in 1 minute. Conversions for anatomical reasons were more common in VATS than RL (66.6% vs 45.6%; P = .0002); however, conversions for vascular reasons were more common in RL than VATS (24.8% vs 14%; P = .01). The rate of emergency conversions was comparable between RL and VATS (0.5% vs 0.7%; P = .25) with no intraoperative mortalities.

Conclusions: Converted minimally invasive lobectomies were not associated with worse perioperative mortality compared with open lobectomy. Compared with VATS lobectomy, RL is associated with a lower probability of conversion in this propensity-score matched cohort study.

Keywords: PORTaL study; VATS lobectomy; conversion; lung cancer; outcomes; robotic lobectomy.

Comment in

- Commentary: Minimally invasive lobectomy for lung cancer: Safely finishing what you started.
  Brownlee AR, Soukiasian HJ.J Thorac Cardiovasc Surg. 2023 Jul;166(1):263-264. doi: 10.1016/j.jtcvs.2022.11.006. Epub 2022 Nov 12.PMID: 36509567 No abstract available.

59

Review

Qual Life Res

.
. 2023 Jul;32(7):1843-1857.
doi: 10.1007/s11136-022-03310-z. Epub 2022 Dec 1.

What is the impact of home non-invasive ventilation on the health-related quality of life of patients with chronic obstructive pulmonary disease? A systematic review

Alison Breen[1], Pinar Avsar[2], Zena Moore[3,4,5,6,7,8], Tom O'Connor[3,4,7], Linda Nugent[3,4], Declan Patton[3,4,9]
Affiliations expand

- PMID: 36456732

- DOI: 10.1007/s11136-022-03310-z

Abstract

Objectives: To ascertain the impact of home non-invasive ventilation (NIV) on the health-related quality of life (HRQL) of patients with moderate-to-severe chronic obstructive pulmonary disease (COPD).

Design: Systematic review.

Methods: A preliminary search of computerised databases (CINAHL, Medline, Clinical Key, Cochrane) was conducted in June 2021, without any limitations on publication date. Inclusion criteria focused on home NIV prescribed for patients with moderate-to-severe COPD. Identified papers were critically appraised for rigour and validity. Data were extracted, analysed, and a narrative synthesis completed.

Results: The review included eight studies, including five randomised controlled trials. Variations in the HRQL scores meant that the data were difficult to collate. Nevertheless, the studies did indicate an overall improved HRQL for those using NIV at home.

Conclusion: This systematic review determines that home NIV does positively impact the HRQL of those with COPD. However, the limited quality of primary studies highlights the need for more in-depth research in this area to bring about optimal standardisation of clinical practice in relation to the use of NIV at home.

Keywords: Chronic obstructive pulmonary disease; Home non-invasive ventilation; Quality of life; Systematic review.

- 28 references

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

60

Thorax

-
-
-

. 2023 Jul;78(7):690-697.
doi: 10.1136/thorax-2022-219334. Epub 2022 Dec 1.

Airflow limitation and mortality during cancer screening in the National Lung Screening Trial: why quantifying airflow limitation matters

Robert P Young[1], Ralph C Ward[2], Raewyn J Scott[3], Greg D Gamble[3], Gerard Silvestri[2]

Affiliations expand

- PMID: 36456179

- DOI: 10.1136/thorax-2022-219334

Abstract

Importance: Current eligibility criteria for lung cancer (LC) screening are derived from randomised controlled trials and primarily based on age and smoking history. However, the individual benefits of screening are highly variable and potentially attenuated by co-morbidities such as advanced airflow limitation (AL).

Objective: To examine the relationship between the presence and severity of AL and screening outcomes.

Methods: This was a secondary analysis of 18 463 high-risk smokers, a substudy from the National Lung Screening Trial, who underwent pre-bronchodilator spirometry at baseline and median follow-up of 6.1 years. We used descriptive statistics and a competing risk proportional hazards model to examine differences in screening outcomes by chronic obstructive pulmonary disease severity group.

Results: The risk of developing LC increased with worsening AL (effect size=0.34, p<0.0001), as did the risk of dying of LC (effect size=0.35, p<0.0001). While those with severe AL (Global Initiative for Obstructive Lung Disease, GOLD grade 3-4) had the highest risk of LC and the highest LC mortality, they also had fewer adenocarcinomas (effect size=-0.20, p=0.008) and a lower surgery rate (effect size=-0.16, p=0.014) despite comparable staging, and greater non-LC mortality relative to LC mortality (effect size=0.30, p<0.0001). In participants with no AL, screening with CT was associated with a significant reduction in LC deaths relative to chest X-ray (30.3%, 95% CI 4.5% to 49.2%, p<0.05). The clinically relevant but attenuated reduction in those with AL (18.5%, 95% CI -8.4% to 38.7%, p>0.05) could be attributed to GOLD 3-4, where no appreciable mortality reduction was observed.

Conclusion: Despite a greater risk of LC, severe AL was not associated with any apparent reduction in LC mortality following screening.

Keywords: COPD epidemiology; Lung Cancer.

Conflict of interest statement

Competing interests: None declared.

- Cited by 1 article

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

BMJ Full Text

Proceed to details

Cite

Share

61

J Clin Nurs

-
-
-

. 2023 Jul;32(13-14):3543-3556.
doi: 10.1111/jocn.16433. Epub 2022 Jun 28.

Disease-related knowledge in people with chronic obstructive pulmonary disease and their informal caregivers: A multilevel modelling analysis

Maria Matarese[1], Karen S Lyons[2], Michela Piredda[1], Maria Grazia De Marinis[1]
Affiliations expand

- PMID: 35765175

- DOI: 10.1111/jocn.16433

Abstract

Aims and objectives: To assess the level of chronic obstructive pulmonary disease (COPD)-related knowledge within patient and informal caregiver dyads, and to identify factors influencing the knowledge level considering the interdependence within the dyads.

Background: Patients with COPD and their informal caregivers present poor disease knowledge and different characteristics are associated with their level of knowledge. Disease knowledge and related characteristics have been assessed separately in patients and informal caregivers, without considering possible influence within the dyads.

Design: Cross-sectional study.

Methods: A convenience sample of dyads was recruited in outpatient and inpatient settings in Central and South Italy. The Bristol COPD Knowledge Questionnaire was used to measure disease knowledge. Sociodemographic, clinical and caregiving characteristics, self-efficacy and depression were measured in patients and caregivers. Multilevel modelling was used to analyse COPD knowledge at the level of the dyad to control for interdependency between patients and informal caregivers. The STROBE guidelines for cross-sectional studies were followed for study reporting.

Results: We recruited 133 dyads. The total level of correct knowledge shared by dyads was 32.89%. Dyads presented higher levels of correct knowledge about disease symptoms, smoking cessation and vaccination, and lower about COPD treatment. Younger patients with greater self-efficacy, who attended pulmonary rehabilitation and were cared for by a spouse/partner with low levels of depression, and informal caregivers who were patients' spouse/partner were more likely to have higher levels of disease-related knowledge.

Conclusions: Our study advances dyadic research in COPD. Future studies should investigate the effects of shared knowledge and incongruent knowledge (where one member knows more than the other) on patient self-care and caregiver contribution to patient self-care.

Relevance to clinical practice: Our study shows what knowledge nurses should provide in educational programmes directed at patients and caregivers, and which dyads have greater knowledge deficits, to whom offer targeted educational interventions.

Keywords: assessment; caregiver; chronic obstructive pulmonary disease; knowledge; patient; self-care.

- 45 references

SUPPLEMENTARY INFO

MeSH terms, Grant supportexpand

Review

Clin Exp Med

. 2023 Jul;23(3):751-758.
doi: 10.1007/s10238-022-00833-0. Epub 2022 May 5.

A systematic review and meta-analysis of homocysteine concentrations in chronic obstructive pulmonary disease

Angelo Zinellu[#1], Elisabetta Zinellu[#2], Maria Carmina Pau[3], Alessandro G Fois[2,3], Sabrina Mellino[1], Barbara Piras[3], Valentina Scano[3], Sara S Fois[3], Arduino A Mangoni[4], Ciriaco Carru[1], Pietro Pirina[5,6]
Affiliations expand

- PMID: 35513742
- PMCID: PMC10284974
- DOI: 10.1007/s10238-022-00833-0

Free PMC article

Abstract

Patients with chronic obstructive pulmonary disease (COPD) often suffer from other conditions, such as cardiovascular disease, that further increase the risk of adverse

outcomes in this group. Serum homocysteine concentrations are positively associated with cardiovascular risk and have also been reported to be increased in COPD. This meta-analysis investigated the association between homocysteine concentrations and COPD. A systematic search of publications in the electronic databases PubMed, Web of Science, Scopus, and Google Scholar, from inception to September 2021, was conducted using the following terms: "Homocysteine" or "Hcy" and "Chronic Obstructive Pulmonary Disease" or "COPD". Weighted mean differences (WMDs) were calculated to evaluate differences in homocysteine concentrations between COPD patients and non-COPD subjects. Risk of bias and certainty of evidence were assessed using the Joanna Briggs Institute Critical Appraisal Checklist and GRADE, respectively. Nine studies in 432 COPD patients (mean age 65 years, 65% males) and 311 controls (mean age 65 years, 56% males) were identified. Pooled results showed that serum homocysteine concentrations were significantly higher in patients with COPD (WMD = 2.91 μmol/L, 95% CI 2.00-3.82 μmol/L; $p < 0.001$; high certainty of evidence). No publication bias was observed. Our results support the hypothesis that increased homocysteine concentrations are significantly associated with COPD and may account, at least in part, for the increased cardiovascular risk in these patients.

Keywords: COPD; Cardiovascular risk; Comorbidities; Homocysteine.

Conflict of interest statement

The authors have no relevant financial or non-financial interests to disclose.

- 46 references
- 5 figures

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grant supportexpand

FULL TEXT LINKS

"Multimorbidity"[Mesh Terms] OR Multimorbidity[Text Word]

. 2023 Jul;8(7):e535-e545.
doi: 10.1016/S2468-2667(23)00098-1.

Effect on life expectancy of temporal sequence in a multimorbidity cluster of psychosis, diabetes, and congestive heart failure among 1·7 million individuals in Wales with 20-year follow-up: a retrospective cohort study using linked data

Rhiannon K Owen[1], Jane Lyons[2], Ashley Akbari[2], Bruce Guthrie[3], Utkarsh Agrawal[4], Daniel C Alexander[5], Amaya Azcoaga-Lorenzo[6], Anthony J Brookes[7], Spiros Denaxas[8], Carol Dezateux[9], Adeniyi Francis Fagbamigbe[10], Gill Harper[9], Paul D W Kirk[11], Eda Bilici Özyiğit[5], Sylvia Richardson[12], Sophie Staniszewska[13], Colin McCowan[10], Ronan A Lyons[2], Keith R Abrams[14]
Affiliations expand

- PMID: 37393092

- DOI: 10.1016/S2468-2667(23)00098-1

Abstract

Background: To inform targeted public health strategies, it is crucial to understand how coexisting diseases develop over time and their associated impacts on patient outcomes and health-care resources. This study aimed to examine how psychosis, diabetes, and congestive heart failure, in a cluster of physical-mental health multimorbidity, develop and coexist over time, and to assess the associated effects of different temporal sequences of these diseases on life expectancy in Wales.

Methods: In this retrospective cohort study, we used population-scale, individual-level, anonymised, linked, demographic, administrative, and electronic health record data from the Wales Multimorbidity e-Cohort. We included data on all individuals aged 25 years and

older who were living in Wales on Jan 1, 2000 (the start of follow-up), with follow-up continuing until Dec 31, 2019, first break in Welsh residency, or death. Multistate models were applied to these data to model trajectories of disease in multimorbidity and their associated effect on all-cause mortality, accounting for competing risks. Life expectancy was calculated as the restricted mean survival time (bound by the maximum follow-up of 20 years) for each of the transitions from the health states to death. Cox regression models were used to estimate baseline hazards for transitions between health states, adjusted for sex, age, and area-level deprivation (Welsh Index of Multiple Deprivation [WIMD] quintile).

Findings: Our analyses included data for 1 675 585 individuals (811 393 [48·4%] men and 864 192 [51·6%] women) with a median age of 51·0 years (IQR 37·0-65·0) at cohort entry. The order of disease acquisition in cases of multimorbidity had an important and complex association with patient life expectancy. Individuals who developed diabetes, psychosis, and congestive heart failure, in that order (DPC), had reduced life expectancy compared with people who developed the same three conditions in a different order: for a 50-year-old man in the third quintile of the WIMD (on which we based our main analyses to allow comparability), DPC was associated with a loss in life expectancy of 13·23 years (SD 0·80) compared with the general otherwise healthy or otherwise diseased population. Congestive heart failure as a single condition was associated with mean a loss in life expectancy of 12·38 years (0·00), and with a loss of 12·95 years (0·06) when preceded by psychosis and 13·45 years (0·13) when followed by psychosis. Findings were robust in people of older ages, more deprived populations, and women, except that the trajectory of psychosis, congestive heart failure, and diabetes was associated with higher mortality in women than men. Within 5 years of an initial diagnosis of diabetes, the risk of developing psychosis or congestive heart failure, or both, was increased.

Interpretation: The order in which individuals develop psychosis, diabetes, and congestive heart failure as combinations of conditions can substantially affect life expectancy. Multistate models offer a flexible framework to assess temporal sequences of diseases and allow identification of periods of increased risk of developing subsequent conditions and death.

Funding: Health Data Research UK.

Conflict of interest statement

Declaration of interests RKO is a member of the National Institute for Health and Care Excellence (NICE) Technology Appraisal Committee, member of the NICE Decision Support Unit, and associate member of the NICE Technical Support Unit; has served as a paid consultant to the pharmaceutical industry, providing unrelated methodological advice; and reports teaching fees from the Association of British Pharmaceutical Industry (ABPI) and the University of Bristol. KRA is a member of the NICE Diagnostics Advisory Committee and

the NICE Decision and Technical Support Units; is a National Institute for Health Research (NIHR) Senior Investigator Emeritus (NF-SI-0512-10159); has served as a paid consultant, providing unrelated methodological and strategic advice, to the pharmaceutical and life sciences industry generally, as well as to the Department of Health and Social Care and NICE; has received unrelated research funding from ABPI, European Federation of Pharmaceutical Industries & Associations, Pfizer, Sanofi, and Swiss Precision Diagnostics; has received course fees from ABPI; and is a Partner and Director of Visible Analytics Limited, a health technology assessment consultancy company. All other authors declare no competing interests.

Proceed to details

Cite

Share

2

PLoS Genet

.

. 2023 Jun 30;19(6):e1010508.

doi: 10.1371/journal.pgen.1010508. Online ahead of print.

A multivariate genome-wide association study of psycho-cardiometabolic multimorbidity

Vilte Baltramonaityte[1], Jean-Baptiste Pingault[2,3], Charlotte A M Cecil[3,4,5], Priyanka Choudhary[6], Marjo-Riitta Järvelin[6,7], Brenda W J H Penninx[8], Janine Felix[9,10], Sylvain Sebert[6], Yuri Milaneschi[8], Esther Walton[1]; EarlyCause Consortium

Affiliations expand

- PMID: 37390107

- DOI: 10.1371/journal.pgen.1010508

Abstract

Coronary artery disease (CAD), type 2 diabetes (T2D) and depression are among the leading causes of chronic morbidity and mortality worldwide. Epidemiological studies indicate a substantial degree of multimorbidity, which may be explained by shared genetic influences. However, research exploring the presence of pleiotropic variants and genes

common to CAD, T2D and depression is lacking. The present study aimed to identify genetic variants with effects on cross-trait liability to psycho-cardiometabolic diseases. We used genomic structural equation modelling to perform a multivariate genome-wide association study of multimorbidity (Neffective = 562,507), using summary statistics from univariate genome-wide association studies for CAD, T2D and major depression. CAD was moderately genetically correlated with T2D (rg = 0.39, P = 2e-34) and weakly correlated with depression (rg = 0.13, P = 3e-6). Depression was weakly correlated with T2D (rg = 0.15, P = 4e-15). The latent multimorbidity factor explained the largest proportion of variance in T2D (45%), followed by CAD (35%) and depression (5%). We identified 11 independent SNPs associated with multimorbidity and 18 putative multimorbidity-associated genes. We observed enrichment in immune and inflammatory pathways. A greater polygenic risk score for multimorbidity in the UK Biobank (N = 306,734) was associated with the co-occurrence of CAD, T2D and depression (OR per standard deviation = 1.91, 95% CI = 1.74-2.10, relative to the healthy group), validating this latent multimorbidity factor. Mendelian randomization analyses suggested potentially causal effects of BMI, body fat percentage, LDL cholesterol, total cholesterol, fasting insulin, income, insomnia, and childhood maltreatment. These findings advance our understanding of multimorbidity suggesting common genetic pathways.

Conflict of interest statement

The authors declare no competing interests.

J Adolesc Health

. 2023 Jun 29;S1054-139X(23)00273-2.
doi: 10.1016/j.jadohealth.2023.05.014. Online ahead of print.

Low Level of Well-being in Young People With Physical-Mental

Multimorbidity: A Population-Based Study

Ena Lindhart Thomsen[1], Kirsten Arntz Boisen[2], Anette Andersen[3], Sanne Ellegård Jørgensen[4], Grete Teilmann[5], Susan Ishøy Michelsen[4]
Affiliations expand

- PMID: 37389522

- DOI: 10.1016/j.jadohealth.2023.05.014

Abstract

Purpose: We aimed to examine whether wellbeing, health behavior, and youth life among young people (YP) with co-occurrence of physical-mental conditions, that is, multimorbidity differ from YP with exclusively physical or mental conditions.

Methods: The population included 3,671 YP reported as having a physical or/and mental condition from a Danish nationwide school-based survey (aged 14-26 years). Wellbeing was measured by the five-item World Health Organization Well-Being Index and life satisfaction by the Cantril Ladder. YP's health behavior and youth life were evaluated in seven domains: home, education, activities/friends, drugs, sleep, sexuality, and self-harm/suicidal thoughts, in accordance with the Home, Education and employment, Eating, Activities, Drugs, Sexuality, Suicide and depression, and Safety acronym. We performed descriptive statistics and multilevel logistic regression analysis.

Results: A total of 52% of YP with physical-mental multimorbidity reported a low level of wellbeing, compared to 27% of YP with physical conditions and 44% with mental conditions. YP with multimorbidity had significantly higher odds of reporting poor life satisfaction, compared to YP with exclusively physical or mental conditions. YP with multimorbidity had significantly higher odds for psychosocial challenges and health risk behavior, compared to YP with physical conditions, along with increased odds for loneliness (23.3%), self-harm (63.1%), and suicidal thoughts (54.2%), compared to YP with mental conditions.

Discussion: YP with physical-mental multimorbidity had higher odds for challenges and low wellbeing and life satisfaction. This is an especially vulnerable group and systematic screening for multimorbidity and psychosocial wellbeing is needed in all healthcare settings.

Keywords: Adolescent; Chronic illness; Cross-sectional study; Health behavior; Mental health; Multimorbidity; Psychiatric illness; Quality of life; Well-being; Youth.

Med Klin Intensivmed Notfmed

. 2023 Jun 28.
doi: 10.1007/s00063-023-01037-4. Online ahead of print.

Sepsis and underlying comorbidities in intensive care unit patients : Analysis of the cause of death by different clinicians-a pilot study

Daniel O Thomas-Rüddel[1,2], Holger Fröhlich[3,4], Daniel Schwarzkopf[5,6], Frank Bloos[5,6], Reimer Riessen[3]
Affiliations expand

- PMID: 37380812

- DOI: 10.1007/s00063-023-01037-4

Abstract

in English, German

Background: There is an ongoing debate as to whether death with sepsis is primarily caused by sepsis or, more often, by the underlying disease. There are no data on the influence of a researcher's background on such an assessment. Therefore, the aim of this

analysis was to assess the cause of death in sepsis and the influence of an investigator's professional background on such an assessment.

Materials and methods: We performed a retrospective observational cohort study of sepsis patients treated in the medical intensive care unit (ICU) of a tertiary care center. For deceased patients, comorbidities and severity of illness were documented. The cause of death (sepsis or comorbidities or both combined) was independently assessed by four assessors with different professional backgrounds (medical student, senior physician in the medical ICU, anesthesiological intensivist, and senior physician specialized in the predominant comorbidity).

Results: In all, 78 of 235 patients died in hospital. Agreement between assessors about cause of death was low (κ 0.37, 95% confidence interval 0.29-0.44). Depending on the assessor, sepsis was the sole cause of death in 6-12% of cases, sepsis and comorbidities in 54-76%, and comorbidities alone in 18-40%.

Conclusions: In a relevant proportion of patients with sepsis treated in the medical ICU, comorbidities contribute significantly to mortality, and death from sepsis without relevant comorbidities is a rare event. Designation of the cause of death in sepsis patients is highly subjective and may be influenced by the professional background of the assessor.

Keywords: Cause of death; Comorbidity; Multimorbidity; Sepsis; Septic shock.

- 26 references

SUPPLEMENTARY INFO

Grant supportexpand

FULL TEXT LINKS

SpringerLink FULL-TEXT ARTICLE

Proceed to details

Cite

Share

5

Review

J Med Internet Res

-
-
-

. 2023 Jun 28;25:e45944.
doi: 10.2196/45944.

The Integration of Clinical Decision Support Systems Into Telemedicine for Patients With Multimorbidity in Primary Care Settings: Scoping Review

Nutchar Wiwatkunupakarn[1,2], Chanchanok Aramrat[1,2], Suphawita Pliannuom[1,2], Nida Buawangpong[1,2], Kanokporn Pinyopornpanish[1,2], Nopakoon Nantsupawat[1,2], Poppy Alice Carson Mallinson[3], Sanjay Kinra[3], Chaisiri Angkurawaranon[1,2]
Affiliations expand

- PMID: 37379066

- DOI: 10.2196/45944

Free article

Abstract

Background: Multimorbidity, the presence of more than one condition in a single individual, is a global health issue in primary care. Multimorbid patients tend to have a poor quality of life and suffer from a complicated care process. Clinical decision support systems (CDSSs) and telemedicine are the common information and communication technologies that have been used to reduce the complexity of patient management. However, each element of telemedicine and CDSSs is often examined separately and with great variability. Telemedicine has been used for simple patient education as well as more complex consultations and case management. For CDSSs, there is variability in data inputs, intended users, and outputs. Thus, there are several gaps in knowledge about how to integrate CDSSs into telemedicine and to what extent these integrated technological interventions can help improve patient outcomes for those with multimorbidity.

Objective: Our aims were to (1) broadly review system designs for CDSSs that have been integrated into each function of telemedicine for multimorbid patients in primary care, (2) summarize the effectiveness of the interventions, and (3) identify gaps in the literature.

Methods: An online search for literature was conducted up to November 2021 on PubMed, Embase, CINAHL, and Cochrane. Searching from the reference lists was done to find additional potential studies. The eligibility criterion was that the study focused on the

use of CDSSs in telemedicine for patients with multimorbidity in primary care. The system design for the CDSS was extracted based on its software and hardware, source of input, input, tasks, output, and users. Each component was grouped by telemedicine functions: telemonitoring, teleconsultation, tele-case management, and tele-education.

Results: Seven experimental studies were included in this review: 3 randomized controlled trials (RCTs) and 4 non-RCTs. The interventions were designed to manage patients with diabetes mellitus, hypertension, polypharmacy, and gestational diabetes mellitus. CDSSs can be used for various telemedicine functions: telemonitoring (eg, feedback), teleconsultation (eg, guideline suggestions, advisory material provisions, and responses to simple queries), tele-case management (eg, sharing information across facilities and teams), and tele-education (eg, patient self-management). However, the structure of CDSSs, such as data input, tasks, output, and intended users or decision-makers, varied. With limited studies examining varying clinical outcomes, there was inconsistent evidence of the clinical effectiveness of the interventions.

Conclusions: Telemedicine and CDSSs have a role in supporting patients with multimorbidity. CDSSs can likely be integrated into telehealth services to improve the quality and accessibility of care. However, issues surrounding such interventions need to be further explored. These issues include expanding the spectrum of medical conditions examined; examining tasks of CDSSs, particularly for screening and diagnosis of multiple conditions; and exploring the role of the patient as the direct user of the CDSS.

Keywords: CDSS; chronic disease; clinical decision support system; decision support; multimorbidity; pharmaceutic; pharmacy; polypharmacy; primary care; review; scoping; search strategy; telehealth; telemedicine.

Meta-Analysis

BMJ Open

. 2023 Jun 27;13(6):e073652.
doi: 10.1136/bmjopen-2023-073652.

Effectiveness of integrated chronic care models for cardiometabolic multimorbidity in sub-Saharan Africa: a systematic review and meta-analysis

Peter Otieno[1 2 3], Charles Agyemang[2], Hesborn Wao[4], Elvis Wambiya[5 6], Maurine Ng'oda[7], Daniel Mwanga[8], James Oguta[5 6], Peter Kibe[8 6], Gershim Asiki[8 9]
Affiliations expand

- PMID: 37369405

- DOI: 10.1136/bmjopen-2023-073652

Free article

Abstract

Objectives: This review aimed at identifying the elements of integrated care models for cardiometabolic multimorbidity in sub-Saharan Africa (SSA) and their effects on clinical or mental health outcomes including systolic blood pressure (SBP), blood sugar, depression scores and other patient-reported outcomes such as quality of life and medication adherence.

Design: Systematic review and meta-analysis using the Grading of Recommendation, Assessment, Development and Evaluation (GRADE) approach.

Data sources: We systematically searched PubMed, Embase, Scopus, Web of Science, Global Health CINAHL, African Journals Online, Informit, PsycINFO, ClinicalTrials.gov, Pan African Clinical Trials Registry and grey literature from OpenSIGLE for studies published between 1999 and 2022.

Eligibility criteria for selecting studies: We included randomised controlled trial studies featuring integrated care models with two or more elements of Wagner's chronic care model.

Data extraction and synthesis: Two independent reviewers used standardised methods to search and screen included studies. Publication bias was assessed using the Doi plot and Luis Furuya Kanamori Index. Meta-analysis was conducted using random effects models.

Results: In all, we included 10 randomised controlled trials from 11 publications with 4864 participants from six SSA countries (South Africa, Kenya, Nigeria, Eswatini, Ghana and Uganda). The overall quality of evidence based on GRADE criteria was moderate. A random-effects meta-analysis of six studies involving 1754 participants shows that integrated compared with standard care conferred a moderately lower mean SBP (mean difference=-4.85 mm Hg, 95% CI -7.37 to -2.34) for people with cardiometabolic multimorbidity; Hedges' g effect size (g=-0.25, (-0.39 to -0.11). However, integrated care compared with usual care showed mixed results for glycated haemoglobin, depression, medication adherence and quality of life.

Conclusion: Integrated care improved SBP among patients living with cardiometabolic multimorbidity in SSA. More studies on integrated care are required to improve the evidence pool on chronic care models for multimorbidity in SSA. These include implementation studies and cost-effectiveness studies.

Prospero registration number: CRD42020187756.

Keywords: hypertension; patient-centered care; primary health care; self care.

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

7
Med Care
.
2023 Jul 1;61(7):477-483.
doi: 10.1097/MLR.0000000000001864. Epub 2023 May 19.

Co-occurring Medical Multimorbidity, Mental Illness, and Substance Use Disorders Among Older Criminal Legal System-Involved Veterans

Benjamin H Han[1,2], Jennifer Bronson[3], Lance Washington[3], Mengfei Yu[4], Katherine Kelton[5,6], Jack Tsai[6,7], Andrea K Finlay[4,6,8]
Affiliations expand

- PMID: 37204150

- DOI: 10.1097/MLR.0000000000001864

Abstract

Background: Older veterans involved in the criminal legal system (CLS) may have patterns of multimorbidity that place them at risk for poor health outcomes.

Objectives: To estimate the prevalence of medical multimorbidity (≥2 chronic medical diseases), substance use disorders (SUDs), and mental illness among CLS-involved veterans aged 50 and older.

Research design: Using Veterans Health Administration health records, we estimated the prevalence of mental illness, SUD, medical multimorbidity, and the co-occurrence of these conditions among veterans by CLS involvement as indicated by Veterans Justice Programs encounters. Multivariable logistic regression models assessed the association between CLS involvement, the odds for each condition, and the co-occurrence of conditions.

Subjects: Veterans aged 50 and older who received services at Veterans Health Administration facilities in 2019 (n=4,669,447).

Methods: Mental illness, SUD, medical multimorbidity.

Results: An estimated 0.5% (n=24,973) of veterans aged 50 and older had CLS involvement. For individual conditions, veterans with CLS involvement had a lower prevalence of medical multimorbidity compared with veterans without but had a higher prevalence of all mental illnesses and SUDs. After adjusting for demographic factors, CLS involvement remained associated with concurrent mental illness and SUD (adjusted odds ratio [aOR] 5.52, 95% CI=5.35-5.69), SUD and medical multimorbidity (aOR=2.09, 95% CI=2.04-2.15), mental illness and medical multimorbidity (aOR=1.04, 95% CI=1.01-1.06), and having all 3 simultaneously (aOR=2.42, 95% CI=2.35-2.49).

Conclusions: Older veterans involved in the CLS are at high risk for co-occurring mental illness, SUDs, and medical multimorbidity, all of which require appropriate care and treatment. Integrated care rather than disease-specific care is imperative for this population.

Conflict of interest statement

The authors declare no conflict of interest.

- 44 references

Diabetes Ther

-
-
-

. 2023 Jul;14(7):1175-1192.
doi: 10.1007/s13300-023-01421-5. Epub 2023 May 17.

Multimorbidity, Polypharmacy, Severe Hypoglycemia, and Glycemic Control in Patients Using Glucose-Lowering Drugs for Type 2 Diabetes: A Retrospective Cohort Study Using Health Insurance Claims in Japan

Ruriko Koto[1], Akihiro Nakajima[2], Tetsuya Miwa[3], Ken Sugimoto[4]
Affiliations expand

- PMID: 37195511
- PMCID: PMC10241751
- DOI: 10.1007/s13300-023-01421-5

Free PMC article

Abstract

Introduction: This study aimed to understand the actual status of multimorbidity and polypharmacy among patients with type 2 diabetes using glucose-lowering drugs, and to assess the effects of patient characteristics on severe hypoglycemia and glycemic control.

Methods: We designed a retrospective cohort study using health insurance claims and medical checkup data in Japan from April 2016 to February 2021 and identified patients with type 2 diabetes who were prescribed glucose-lowering drugs. We analyzed data on patient characteristics, including multimorbidity and polypharmacy, calculated the incidence rate for severe hypoglycemic events, applied a negative binomial regression model to explore factors that affected severe hypoglycemia, and analyzed the status of glycemic control in the subcohort for which HbA1c data were available.

Results: Within the analysis population (n = 93,801), multimorbidity was present in 85.5% and mean ± standard deviation for oral drug prescriptions was 5.6 ± 3.5 per patient, while for those aged 75 years or older these numbers increased to 96.3% and 7.1 ± 3.5, respectively. The crude incidence rate for severe hypoglycemia was 5.85 (95% confidence

interval 5.37, 6.37) per 1000 person-years. Risk factors for severe hypoglycemia included younger and older age, prior severe hypoglycemia, use of insulin, sulfonylurea, two-drug therapy including sulfonylurea or glinides, three-or-more-drug therapy, excessive polypharmacy, and comorbidities including end-stage renal disease (ESRD) requiring dialysis. Subcohort analysis (n = 26,746) showed that glycemic control is not always maintained according to guidelines.

Conclusion: Patients with type 2 diabetes, particularly older patients, experienced high multimorbidity and polypharmacy. Several risk factors for severe hypoglycemia were identified, most notably younger age, ESRD, history of severe hypoglycemia, and insulin therapy.

Trial registration: The University Hospital Medical Information Network Clinical Trials Registry (UMIN000046736).

Keywords: Glucose-lowering drugs; Health insurance database; Multimorbidity; Older patients; Polypharmacy; Severe hypoglycemia; Type 2 diabetes.

Conflict of interest statement

Ruriko Koto, Akihiro Nakajima, and Tetsuya Miwa are employees of Teijin Pharma Limited and hold stock in Teijin Limited. Ken Sugimoto has received consulting fees from Teijin Pharma Limited and payment for presentations from Sumitomo Pharma Co., Ltd., Mitsubishi Tanabe Pharma Corporation, and Kyowa Kirin Co., Ltd.

- 45 references
- 2 figures

FULL TEXT LINKS

SpringerLink FULL-TEXT ARTICLE
Proceed to details
Cite

Share
9

Obesity (Silver Spring)

. 2023 Jul;31(7):1787-1797.
doi: 10.1002/oby.23772. Epub 2023 May 9.

Glucagon-like peptide-1 therapy in people with obesity restores natural killer cell metabolism and effector function

Conor De Barra[1], Mohammed Khalil[2], Arimin Mat[2], Cliona O'Donnell[2], Ferrah Shaamile[2], Kiva Brennan[3], Donal O'Shea[2], Andrew E Hogan[1]
Affiliations expand

- PMID: 37157931

- DOI: 10.1002/oby.23772

Abstract

Objective: People with obesity (PWO) have functionally defective natural killer (NK) cells, with a decreased capacity to produce cytokines and kill target cells, underpinned by defective cellular metabolism. It is plausible that the changes in peripheral NK cell activity are contributing to the multimorbidity in PWO, which includes an increased risk of cancer. This study investigated whether therapy with long-acting glucagon-like peptide-1 (GLP-1) analogues, which are an effective treatment for obesity, could restore NK cell functionality in PWO.

Methods: In a cohort of 20 PWO, this study investigated whether 6 months of once weekly GLP-1 therapy (semaglutide) could restore human NK cell function and metabolism using multicolor flow cytometry, enzyme-linked immunosorbent assays, and cytotoxicity assays.

Results: These data demonstrate that PWO who received GLP-1 therapy have improved NK cell function, as measured by cytotoxicity and interferon-γ/granzyme B production. In addition, the study demonstrates increases in a CD98-mTOR-glycolysis metabolic axis, which is critical for NK cell cytokine production. Finally, it shows that the reported improvements in NK cell function appear to be independent of weight loss.

Conclusions: The restoration, by GLP-1 therapy, of NK cell functionality in PWO may be contributing to the overall benefits being seen with this class of medication.

- 50 references

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

BJGP Open
. 2023 Jun 27;7(2):BJGPO.2022.0146.
doi: 10.3399/BJGPO.2022.0146. Print 2023 Jun.

Incorporating FRAX into a nurse-delivered integrated care review: a multi-method qualitative study

Ashley Hawarden[1], Laurna Bullock[2], Carolyn A Chew-Graham[2], Daniel Herron[3], Samantha Hider[2,4], Clare Jinks[2], Risni Erandie Ediriweera De Silva[2,5], Annabelle Machin[2], Zoe Paskins[2,4]
Affiliations expand

- PMID: 36746471

- DOI: 10.3399/BJGPO.2022.0146

Free article

Abstract

Background: People with inflammatory rheumatological conditions (IRCs) are at increased risk of common comorbidities including osteoporosis.

Aim: To explore the barriers to and facilitators of implementing nurse-delivered fracture risk assessments in primary care, in the context of multimorbidity reviews for people with IRCs.

Design & setting: A multi-method qualitative study in primary care.

Method: As part of a process evaluation in a pilot trial, semi-structured interviews were conducted with 20 patients, two nurses, and three GPs. Twenty-four patient-nurse INCLUDE review consultations were audiorecorded and transcribed. A framework analysis was conducted using the Theoretical Domains Framework (TDF).

Results: Nurses reported positive views about the value of the Fracture Risk Assessment Tool (FRAX) and they felt confident to deliver the assessments following training. Barriers to implementation, as identified by TDF, particularly related to the domains of knowledge, skills, professional roles, and environmental context. GPs reported difficulty keeping up to date with osteoporosis guidelines and voiced differing opinions about whether fracture risk assessment was the role of primary or secondary care. Lack of integration of FRAX into IT systems was a barrier to use. GPs and nurses had differing views about the nurse role in communicating risk and acting on FRAX findings; for example, explanations of the FRAX result and action needed were limited. Patients reported limited understanding of FRAX outcomes.

Conclusion: The findings suggest that, with appropriate training including risk communication, practice nurses are likely to be confident to play a key role in conducting fracture risk assessments, but further work is needed to address the barriers identified.

Keywords: fracture; multimorbidity; osteoporosis; primary health care; qualitative methods; review.

11

Thorax

. 2023 Jul;78(7):698-705.

doi: 10.1136/thorax-2022-219489. Epub 2023 Feb 2.

Air pollution associated with incidence and progression trajectory of chronic lung diseases: a population-based cohort study

Xiaojie Wang[1], Lan Chen[1], Miao Cai[1], Fei Tian[1], Hongtao Zou[1], Zhengmin Min Qian[2], Zilong Zhang[1], Haitao Li[3], Chongjian Wang[4], Steven W Howard[5], Yang Peng[6,7], Li'e Zhang[6,7], Elizabeth Bingheim[2], Hualiang Lin[8], Yunfeng Zou[9,10]
Affiliations expand

- PMID: 36732083

- DOI: 10.1136/thorax-2022-219489

Abstract

Background: No prior study has examined the effects of air pollution on the progression from healthy to chronic lung disease, subsequent chronic lung multimorbidity and further to death.

Methods: We used data from the UK Biobank of 265 506 adults free of chronic lung disease at recruitment. Chronic lung multimorbidity was defined as the coexistence of at least two chronic lung diseases, including asthma, chronic obstructive pulmonary disease and lung cancer. The concentrations of air pollutants were estimated using land-use regression models. Multistate models were applied to assess the effect of air pollution on the progression of chronic lung multimorbidity.

Results: During a median follow-up of 11.9 years, 13 863 participants developed at least one chronic lung disease, 1055 developed chronic lung multimorbidity and 12 772 died. We observed differential associations of air pollution with different trajectories of chronic lung multimorbidity. Fine particulate matter showed the strongest association with all five transitions, with HRs (95% CI) per 5 μg/m^3 increase of 1.31 (1.22 to 1.42) and 1.27 (1.01 to 1.57) for transitions from healthy to incident chronic lung disease and from incident chronic lung disease to chronic lung multimorbidity, and 1.32 (1.21 to 1.45), 1.24 (1.01 to 1.53) and 1.91 (1.14 to 3.20) for mortality risk from healthy, incident chronic lung disease and chronic lung multimorbidity, respectively.

Conclusion: Our study provides the first evidence that ambient air pollution could affect the progression from free of chronic lung disease to incident chronic lung disease, chronic lung multimorbidity and death.

Keywords: COPD epidemiology; asthma epidemiology; lung cancer.

Conflict of interest statement

Competing interests: None declared.

- Cited by 1 article

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

FULL TEXT LINKS

BMJ Full Text

Proceed to details

Cite

Share

12

Value Health

. 2023 Jul;26(7):995-1002.
doi: 10.1016/j.jval.2022.06.017. Epub 2022 Aug 8.

Revising the Suspected-Cancer Guidelines: Impacts on Patients' Primary Care Contacts and Costs

Sarah Price[1], Paolo Landa[2], Ruben Mujica-Mota[3], Willie Hamilton[4], Anne Spencer[5]
Affiliations expand

- PMID: 35953398

- DOI: 10.1016/j.jval.2022.06.017

Free article

Abstract

Objectives: This study aimed to explore the impact of revising suspected-cancer referral guidelines on primary care contacts and costs.

Methods: Participants had incident cancer (colorectal, n = 2000; ovary, n = 763; and pancreas, n = 597) codes in the Clinical Practice Research Datalink or England cancer registry. Difference-in-differences analyses explored guideline impacts on contact days and nonzero costs between the first cancer feature and diagnosis. Participants were controls ("old National Institute for Health and Care Excellence [NICE]") or "new NICE" if their index feature was introduced during guideline revision. Model assumptions were inspected visually and by falsification tests. Sensitivity analyses reclassified participants who subsequently presented with features in the original guidelines as "old NICE." For colorectal cancer, sensitivity analysis (n = 3481) adjusted for multimorbidity burden.

Results: Median contact days and costs were, respectively, 4 (interquartile range [IQR] 2-7) and £117.69 (IQR £53.23-£206.65) for colorectal, 5 (IQR 3-9) and £156.92 (IQR £78.46-£272.29) for ovary, and 7 (IQR 4-13) and £230.64 (IQR £120.78-£408.34) for pancreas. Revising ovary guidelines may have decreased contact days (incidence rate ratio [IRR] 0.74; 95% confidence interval 0.55-1.00; P = .05) with unchanged costs, but parallel trends assumptions were violated. Costs decreased by 13% (equivalent to -£28.05, -£50.43 to -£5.67) after colorectal guidance revision but only in sensitivity analyses adjusting for multimorbidity. Contact days and costs remained unchanged after pancreas guidance revision.

Conclusions: The main analyses of symptomatic patients suggested that prediagnosis primary care costs remained unchanged after guidance revision for pancreatic cancer. For colorectal cancer, contact days and costs decreased in analyses adjusting for multimorbidity. Revising ovarian cancer guidelines may have decreased primary care contact days but not costs, suggesting increased resource-use intensity; nevertheless, there is evidence of confounding.

Keywords: difference-in-differences; early cancer diagnosis; primary care; suspected-cancer policy revision.

ELSEVIER
OPEN ACCESS

"asthma"[MeSH Terms] OR asthma[Text Word]

Editorial

Respirology
-
-
-
. 2023 Jul 1.
doi: 10.1111/resp.14546. Online ahead of print.

Risk of childhood asthma in those born small

Atul Malhotra[1 2 3], Abdul Razak[1 2 3]
Affiliations expand

- PMID: 37393434

- DOI: 10.1111/resp.14546

No abstract available

Keywords: birth weight; fetal growth restriction; gestation; lung function; neonate; preterm; small for gestational age.

- 12 references

SUPPLEMENTARY INFO

Publication typesexpand
Proceed to details
Cite

Share
2

NPJ Prim Care Respir Med
. 2023 Jul 1;33(1):24.
doi: 10.1038/s41533-023-00346-7.

Effective respiratory management of asthma and COPD and the environmental impacts of inhalers

Omar S Usmani[1], Mark L Levy[2]
Affiliations expand

- PMID: 37393273
- DOI: 10.1038/s41533-023-00346-7

No abstract available

- 47 references

Proceed to details
Cite

Share
3

Respir Med
. 2023 Jun 29;107334.
doi: 10.1016/j.rmed.2023.107334. Online ahead of print.

Efficacy of mometasone/indacaterol/glycopyrronium in patients with inadequately

controlled asthma with respect to baseline eosinophil count: Post hoc analysis of IRIDIUM study

Konstantinos Kostikas[1], Jorge F Maspero[2], Kenneth R Chapman[3], Karen Mezzi[4], Xavier Jaumont[4], David Lawrence[4], Richard van Zyl-Smit[5]
Affiliations expand

- PMID: 37392789

- DOI: 10.1016/j.rmed.2023.107334

Abstract

Background: Baseline characteristics could potentially guide asthma treatments. We evaluated whether baseline eosinophil levels affect the efficacy of mometasone/indacaterol/glycopyrronium (MF/IND/GLY) in patients with inadequately controlled asthma.

Method: In this post hoc analysis of IRIDIUM study, efficacy of high-dose MF/IND/GLY (160/150/50 µg, once-daily [o.d.]) versus high-dose MF/IND (320/150 µg o.d.) and high-dose fluticasone/salmeterol (FLU/SAL [500/50 µg, twice-daily [b.i.d.]); and efficacy of pooled MF/IND/GLY (160/150/50 µg and 80/150/50 µg) versus pooled MF/IND (320/150 µg and 160/150 µg) was evaluated in patient subgroups with baseline blood eosinophil count of <300 cells/µL or ≥300 cells/µL.

Results: Overall, 3065 patients were included. At Week 26, high-dose MF/IND/GLY showed improved trough FEV_1 versus high-dose MF/IND (Δ78mL [<300 cells/µL]; Δ54mL [≥300 cells/µL]) and FLU/SAL (Δ112mL [<300 cells/µL]; Δ98mL [≥300 cells/µL]). Similarly, pooled MF/IND/GLY also showed improved trough FEV_1 versus pooled MF/IND (Δ75mL [<300 cells/µL]; Δ68mL [≥300 cells/µL]). Over 52 weeks, high-dose MF/IND/GLY reduced the annualized rate of moderate or severe asthma exacerbations by 23% and 10%, severe exacerbations by 31% and 15%, and all exacerbation by 33% and 10% versus high-dose MF/IND for subgroups with <300 cells/uL and ≥300 cells/uL, respectively; and by 33% and 41%, 45% and 42%, 42% and 39% versus FLU/SAL, respectively. Similarly, pooled MF/IND/GLY reduced exacerbations by 22% and 8%, 21% and 7%, 27% and 8%, versus pooled MF/IND, for the respective subgroups.

Conclusion: MF/IND/GLY showed improvement in lung function and reduction in asthma exacerbations over MF/IND and FLU/SAL independent of baseline eosinophil levels,

indicating that eosinophil levels did not affect the efficacy of MF/IND/GLY in patients with inadequately controlled asthma.

Trial registration: ClinicalTrials.gov, NCT02571777 (IRIDIUM).

Keywords: Eosinophil; Exacerbations; Glycopyrronium bromide; Indacaterol acetate; Lung function; Mometasone furoate.

Conflict of interest statement

Declaration of competing interest Konstantinos Kostikas reports honoraria for presentations and consultancy fees from AstraZeneca, Boehringer Ingelheim, CSL Behring, Chiesi, ELPEN, GILEAD, GSK, Menarini, Novartis, Sanofi, Specialty Therapeutics, WebMD (paid to the University of Ioannina), is a member of the GOLD Assembly and was an employee of Novartis Pharma AG until October 31, 2018; his department received funding and grants from AstraZeneca, Boehringer Ingelheim, Chiesi, Innovis, ELPEN, GSK, Menarini, Novartis and NuvoAir (paid to the University of Ioannina). Jorge F. Maspero reports grants and personal fees from Novartis during the conduct of the study, grants and personal fees from Sanofi, and personal fees from AstraZeneca and ImmunoTek. Kenneth R. Chapman reports grants and personal fees from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Grifols, Novartis, Regeneron, Sanofi, and Takeda, grants from Vertex, and personal fees from CSL Behring, Inhibrx, and Kamada, all outside of the submitted work. Richard van Zyl-Smit reports personal fees from Aspen–GSK, AstraZeneca, Cipla, Merck Sharp & Dohme, Novartis, Pfizer, and Roche, Glenmark and Boehringer Ingelheim outside of the submitted work. Karen Mezzi, Xavier Jaumont are employees of Novartis. David Lawrence is an employee as well as share owner of Novartis.

SUPPLEMENTARY INFO

Associated dataexpand
Proceed to details
Cite

Share
4

J Allergy Clin Immunol Pract

.
. 2023 Jun 28;S2213-2198(23)00706-7.
doi: 10.1016/j.jaip.2023.06.040. Online ahead of print.

DISPOSITION OF WORK-RELATED ASTHMA IN A SPANISH ASTHMA COHORT: COMPARISON OF ASTHMA SEVERITY BETWEEN EMPLOYED AND RETIRED WORKERS

Christian Romero-Mesones[1], Maria-Jesus Cruz[2], Isam Alobid[3], Blanca Barroso[4], Ebymar Arismendi[5], Pilar Barranco[6], Diana Betancor[4], Irina Bobolea[5], Blanca Cárdaba[7], Elena Curto[8], Gemma Domenech[9], Javier Domínguez-Ortega[6], David Espejo[10], Francisco-Javier González-Barcala[11], Juan-Alberto Luna-Porta[6], Carlos Martínez-Rivera[12], Paula Méndez-Brea[13], Joaquim Mullol[14], Jose-María Olaguibel[15], Cesar Picado[16], Vicente Plaza[17], Victoria Del Pozo[7], Santiago Quirce[6], Manuel-Jorge Rial[18], Jose-María Rodrigo-Muñoz[7], Joaquin Sastre[4], Sandra Serrano[9], Lorena Soto-Retes[17], Antonio Valero[5], Marcela Valverde-Monge[4], Xavier Munoz[19]
Affiliations expand

- PMID: 37391017

- DOI: 10.1016/j.jaip.2023.06.040

Abstract

Background: Exposure to certain agents in the workplace can trigger occupational asthma (OA) or work-exacerbated asthma (WEA), both of which come under the heading of work-related asthma (WRA). Understanding the burden that WRA represents can help in the management of these patients.

Objective: The objective of the present study is to assess the influence of occupation on asthma in real life and to analyze the characteristics of the patients with WRA included in an asthma cohort.

Methods: Prospective multicenter study of a cohort of consecutive patients with asthma. A standardized clinical history was completed. Patients were classified as having WRA or Non-WRA. All patients underwent respiratory function tests, fraction of exhaled nitric oxide (FeNO) and methacholine challenge (PC20) at the beginning of the study. They were classified into two groups depending on their employment status: employed (Group 1) or unemployed (Group 2).

Results: Eighty-two (17%) of the 480 patients included in the cohort were diagnosed with WRA. Fifty-seven patients (70%) were still working. Mean age (SD) was 46 (10.69) years in Group 1 and 57 (9.91) years in Group 2 ($p<0.0001$). Significant differences were observed in adherence to treatment, 64.9% in Group 1 vs 88% in Group 2 ($p= 0.0354$) and in severe asthma exacerbations (35.7% in Group 1 vs 0% in Group 2; $p= 0.0172$). No significant differences were observed in the rest of the variables analyzed.

Conclusions: The burden of WRA in specialized Asthma Units is not negligible. The absence of any differences in the severity of asthma, the treatment administered, alterations in lung function or the number of exacerbations in those working versus not working, may support the idea that job change advice should be customized to each individual patient.

Keywords: Occupational asthma; exacerbation; work-exacerbated asthma.

Nat Commun

. 2023 Jun 29;14(1):3862.
doi: 10.1038/s41467-023-39614-y.

The mRNA methyltransferase Mettl3 modulates cytokine mRNA stability and limits functional responses in mast cells

Cristina Leoni[#1], Marian Bataclan[#2], Taku Ito-Kureha[3], Vigo Heissmeyer[3,4], Silvia Monticelli[5]
Affiliations expand

- PMID: 37386028

- PMCID: PMC10310798

- DOI: 10.1038/s41467-023-39614-y

Abstract

Mast cells are central players in allergy and asthma, and their dysregulated responses lead to reduced quality of life and life-threatening conditions such as anaphylaxis. The RNA modification N^6-methyladenosine (m^6A) has a prominent impact on immune cell functions, but its role in mast cells remains unexplored. Here, by optimizing tools to genetically manipulate primary mast cells, we reveal that the m^6A mRNA methyltransferase complex modulates mast cell proliferation and survival. Depletion of the catalytic component Mettl3 exacerbates effector functions in response to IgE and antigen complexes, both in vitro and in vivo. Mechanistically, deletion of Mettl3 or Mettl14, another component of the methyltransferase complex, lead to the enhanced expression of inflammatory cytokines. By focusing on one of the most affected mRNAs, namely the one encoding the cytokine IL-13, we find that it is methylated in activated mast cells, and that Mettl3 affects its transcript stability in an enzymatic activity-dependent manner, requiring consensus m^6A sites in the Il13 3'-untranslated region. Overall, we reveal that the m^6A machinery is essential in mast cells to sustain growth and to restrain inflammatory responses.

Conflict of interest statement

The authors declare no competing interests.

- 54 references
- 8 figures

SUPPLEMENTARY INFO

Grant supportexpand

Proceed to details

Cite

Share

6

Eur Respir J

. 2023 Jun 29;2300218.
doi: 10.1183/13993003.00218-2023. Online ahead of print.

Airway smooth muscle area to predict steroid responsiveness in COPD patients receiving triple therapy (HISTORIC): a randomised, placebo-controlled, double-blind, investigator-initiated trial

Daiana Stolz[1,2,3,4], Eleni Papakonstantinou[5,2,3,4], Maria Pascarella[5], Kathleen Jahn[5], Aline Siebeneichler[5], Andrei M Darie[5], Matthias J Herrmann[5], Werner Strobel[5], Anna Salina[5], Leticia Grize[5], Spasenija Savic Prince[6], Michael Tamm[5,2]
Affiliations expand

- PMID: 37385657

- DOI: 10.1183/13993003.00218-2023

Abstract

Although inhaled corticosteroids (ICS) are highly effective in asthma, they provide significant but modest clinical benefit in COPD. Here, we tested the hypothesis that high bronchial airway smooth muscle (ASMC) area in COPD is associated to ICS responsiveness.In this investigator-initiated and -driven, double-blind, randomised, placebo-controlled trial (HISTORIC), 190 COPD patients, GOLD stage B-D, underwent bronchoscopy with endobronchial biopsy. Patients divided in groups A and B with high ASMC area (HASMC: >20% of the bronchial tissue area) and with low ASMC area (LASMC: ≤20% of the bronchial tissue area), respectively and followed a run-in period of 6 weeks on open-label triple inhaled therapy with aclidinium/formoterol/budesonide (ACL/FOR/BUD:400/12/400 mcg/bid). Subsequently, patients were randomised to receive either ACL/FOR/BUD or ACL/FOR/Placebo and followed for 12 months. The primary end point of the study was the difference in post-bronchodilator FEV_1 over 12 months between patients with LASMC and HASMC receiving or not receiving ICS.In patients with LASMC, ACL/FOR/BUD did not significantly improve FEV_1 over 12 months, as compared to ACL/FOR/placebo p=0.675. In patients with HASMC, however, ACL/FOR/BUD significantly improved FEV_1, as compared to ACL/FOR/placebo p=0.020. Over 12 months, the difference of FEV_1 change between the group of ACL/FOR/BUD and the group of ACL/FOR/placebo was 50.6 mL·year^{-1} within the group of patients with LASMC and 183.0 mL·year^{-1} within the group of patients with HASMC.COPD patients with HASMC respond better to ICS than

patients with LASMC, suggesting that this type of histological analysis may predict ICS responsiveness in COPD patients receiving triple therapy.

Chest

. 2023 Jun 27;S0012-3692(23)00935-2.
doi: 10.1016/j.chest.2023.06.029. Online ahead of print.

Clinic versus home spirometry for monitoring lung function in patients with asthma

John Oppenheimer[1], Nicola A Hanania[2], Rekha Chaudhuri[3], Hironori Sagara[4], Zelie Bailes[5], Andrew Fowler[5], Guy Peachey[5], Emilio Pizzichini[6], David Slade[7]
Affiliations expand

- PMID: 37385337

- DOI: 10.1016/j.chest.2023.06.029

Abstract

Background: Studies examining agreement between home and clinic spirometry in patients with asthma are limited, with conflicting results. Understanding the strengths and limitations of telehealth and home spirometry is particularly important considering the SARS-CoV-2 pandemic.

Research question: How well do home and clinic measurements of trough forced expiratory volume in 1 second (FEV_1) agree in patients with uncontrolled asthma?

Study design and methods: This post hoc analysis used trough FEV_1 data from the randomised, double-blind, parallel-group Phase IIIA CAPTAIN (205715; NCT02924688) and Phase IIB (205832; NCT03012061) trials in patients with uncontrolled asthma. CAPTAIN evaluated the impact of adding umeclidinium (UMEC) to fluticasone furoate/vilanterol (FF/VI) via a single inhaler; 205832 investigated adding UMEC to FF versus placebo. Trough FEV_1 measurements were collected via home spirometry and supervised in-person spirometry in the research clinic. To compare home and clinic spirometry, we examined the time-course analyses of home and clinic trough FEV_1, and generated post hoc Bland-Altman plots to assess agreement between home and clinic spirometry.

Results: Data from 2436 (CAPTAIN) and 421 (205832) patients were analysed. Treatment-related improvements in FEV_1 were observed in both trials using home and clinic spirometry. Improvements measured by home spirometry were of lower magnitude and less consistent than clinic measurements. Bland-Altman plots suggested poor agreement between home and clinic trough FEV_1 at baseline and Week 24.

Interpretation: This post hoc comparison of home and clinic spirometry is the largest conducted in asthma. Results showed that home spirometry was less consistent than and lacked agreement with clinic spirometry, suggesting that unsupervised home readings are not interchangeable with clinic measurements. However, these findings may only be applicable to home spirometry using the specific device and coaching methods employed in these studies. Post-pandemic, further research to optimise home spirometry use is needed.

Clinical trial registration: Clinicaltrials.gov (NCT03012061; NCT02924688).

Keywords: asthma; pulmonary function test; spirometry.

Lancet Child Adolesc Health

. 2023 Jun 26;S2352-4642(23)00128-1.
doi: 10.1016/S2352-4642(23)00128-1. Online ahead of print.

Inhaled corticosteroids to improve lung function in children (aged 6–12 years) who were born very preterm (PICSI): a randomised, double-blind, placebo-controlled trial

Rhea C Urs[1], Denby J Evans[2], Tiffany K Bradshaw[3], James T D Gibbons[4], Elizabeth F Smith[1], Rachel E Foong[1], Andrew C Wilson[4], Shannon J Simpson[5]
Affiliations expand

- PMID: 37385269

- DOI: 10.1016/S2352-4642(23)00128-1

Abstract

Background: Despite the substantial burden of lung disease throughout childhood in children who were born very preterm, there are no evidence-based interventions to improve lung health beyond the neonatal period. We tested the hypothesis that inhaled corticosteroid improves lung function in this population.

Methods: PICSI was a randomised, double-blind, placebo-controlled trial at Perth Children's Hospital (Perth, WA, Australia) to assess whether fluticasone propionate, an inhaled corticosteroid, improves lung function in children who had been born very preterm (<32 weeks of gestation). Eligible children were aged 6-12 years and did not have severe congenital abnormalities, cardiopulmonary defects, neurodevelopmental impairment, diabetes, or any glucocorticoid use within the preceding 3 months. Participants were randomly assigned (1:1) to receive 125 µg fluticasone propionate or placebo twice daily for 12 weeks. Participants were stratified for sex, age, bronchopulmonary dysplasia diagnosis, and recent respiratory symptoms using the biased-coin minimisation technique. The primary outcome was change in pre-bronchodilator forced expiratory volume in 1 s (FEV_1)

after 12 weeks of treatment. Data were analysed by intention-to-treat (ie, all participants who were randomly assigned and took at least the tolerance dose of the drug). All participants were included in the safety analyses. This trial is registered at the Australian and New Zealand Clinical Trials Registry, number 12618000781246.

Findings: Between Oct 23, 2018, and Feb 4, 2022, 170 participants were randomly assigned and received at least the tolerance dose (83 received placebo and 87 received inhaled corticosteroid). 92 (54%) participants were male and 78 (46%) were female. 31 participants discontinued treatment before 12 weeks (14 in the placebo group and 17 in the inhaled corticosteroid group), mostly due to the impact of the COVID-19 pandemic. When analysed by intention-to-treat, the change in pre-bronchodilator FEV_1 Z score over 12 weeks was -0·11 (95% CI -0·21 to 0·00) in the placebo group and 0·20 (0·11 to 0·30) in the inhaled corticosteroid group (imputed mean difference 0·30, 0·15-0·45). Three of 83 participants in the inhaled corticosteroid group had adverse events requiring treatment discontinuation (exacerbation of asthma-like symptoms). One of 87 participants in the placebo group had an adverse event requiring treatment discontinuation (inability to tolerate the treatment with dizziness, headaches, stomach pains, and worsening of a skin condition).

Interpretation: As a group, children born very preterm have only modestly improved lung function when treated with inhaled corticosteroid for 12 weeks. Future studies should consider individual phenotypes of lung disease after preterm birth and other agents to improve management of prematurity-associated lung disease.

Funding: Australian National Health and Medical Research Council, Telethon Kids Institute, and Curtin University.

Conflict of interest statement

Declaration of interests SJS received funding from the Australian National Health and Medical Research Council to conduct this study. All other authors declare no competing interests.

. 2023 Jun 29.
doi: 10.23736/S0022-4707.23.15015-8. Online ahead of print.

Lifestyles and the risk of an asthma attack in adult asthma patients: a cross-sectional study using NHANES database

Xuequn Guo[1], Songping Huang[2], Qiu Luo[3], Hongsheng Lin[2]
Affiliations expand

- PMID: 37382411

- DOI: 10.23736/S0022-4707.23.15015-8

Abstract

Background: The influence of physical activity, diet and sleep on asthma has been well documented by recent studies respectively. However, few studies focus on the relationship between asthma attack and the overall lifestyle, which comprises interrelated lifestyle factors. This study aims to investigate the influence of lifestyles on the ratio of asthma attack. Data were extracted from the NHANES database (2017 to May 2020).

Methods: A total of 834 asthmatic patients were enrolled and divided into non-asthma attack (N.=460) and asthma attack (N.=374) groups. The risk factors for asthma attacks were preliminarily identified by univariate logistic analysis, then multivariate logistic analysis was employed to select independent risk factors other than lifestyles and further determine the association between lifestyles and asthma attacks.

Results: After multivariate logistic analysis, engagement of vigorous activity (Model 1 P=0.010, Model 2 P=0.016, Model 3 P=0.012), engagement of moderate activity (Model 1 P=0.006, Model 2 P=0.008, Model 3 P=0.003) and sleep disorder (Model1 P=0.001, Model 2 P<0.001, Model 3 P=0.008) were determined as independent risk factors of lifestyles for an asthma attack in the past year.

Conclusions: This research documented that, for asthmatic patients, engagement of vigorous activity, engagement of moderate activity, and sleep disorder will make an asthma attack more likely to happen.

Proceed to details
Cite

Share
10

Editorial

Thorax
•
•
•
. 2023 Jun 28;thorax-2023-220326.
doi: 10.1136/thorax-2023-220326. Online ahead of print.

Heat-related hospitalisations for asthma - challenges for research

Eva Sl Pedersen[1], Claudia E Kuehni[2,3]
Affiliations expand

- PMID: 37380356
- DOI: 10.1136/thorax-2023-220326

No abstract available

Keywords: Allergic lung disease; Asthma; Asthma Epidemiology; Asthma Mechanisms.

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Clin Immunol
.
. 2023 Jun 26;253:109680.
doi: 10.1016/j.clim.2023.109680. Online ahead of print.

Benralizumab affects NK cell maturation and proliferation in severe asthmatic patients

Laura Bergantini[1], Miriana d'Alessandro[2], Tommaso Pianigiani[2], Behar Cekorja[2], Elena Bargagli[2], Paolo Cameli[2]
Affiliations expand

- PMID: 37380086
- DOI: 10.1016/j.clim.2023.109680

Abstract

Introduction: The mechanism of action of benralizumab is determined by its afucosylated constant fragment that binds CD16a receptors on the membrane of natural killer cells. Here we analysed changes in Natural Killer and T-cells in Severe asthmatic patients, before and after benralizumab.

Methods: Natural Killer and T-cell subsets were detected through multiparametric flow cytometry. The concentrations of serum cytokines levels were detected through multiplex assay. Functional proliferation assay was performed in follow-up samples in severe asthmatic patients.

Results: At baseline, severe asthmatic patients showed higher percentages of immature Natural Killer cells when compared with healthy controls. We demonstrate the proliferative capacity of these cells and their activation after benralizumab administration. Benralizumab

shifted Natural Killer cell phenotypes towards maturity. Correlation between the Natural Killer cells and functional parameters and with steroid-sparing was observed.

Conclusion: Together this data contributes to our understanding of the mechanisms of action of benralizumab in the resolution of inflammation in severe asthma patients.

Keywords: ADCC; Benralizumab; CD137; NK cells; Severe asthmatic patients.

Conflict of interest statement

Declaration of Competing Interest PC served as a speaker and consultant and advisory board member for Astra Zeneca, Sanofi, Novartis and GSK. PC, EB, MdA and LB are investigators for a current research financed by AstraZeneca (grants paid to his institution). All other authors declare no conflict of interest.

Review

Expert Opin Drug Metab Toxicol

. 2023 Jun 30;1-11.

doi: 10.1080/17425255.2023.2230130. Online ahead of print.

Pharmacokinetic considerations surrounding triple therapy for uncontrolled asthma

Maria Gabriella Matera[1], Barbara Rinaldi[1], Carmela Belardo[1], Luigino Calzetta[2], Mario Cazzola[3]

Affiliations expand

- PMID: 37376964

- DOI: 10.1080/17425255.2023.2230130

Abstract

Introduction: Solid pharmacological rationale and clinical evidence support the use of a combination of an inhaled corticosteroid (ICS), a long-acting β_2-agonist, and a long-acting muscarinic antagonist in severe asthma, which clinically results in increased lung function, improved symptoms, and decreased exacerbation rates.

Areas covered: We examined the pharmacokinetic issues associated with triple therapy for uncontrolled asthma. We considered the pharmacokinetic characteristics of the three drug classes, the role of inhalers in influencing their pharmacokinetic behavior, and the impact of severe asthma on the pharmacokinetics of inhaled drugs.

Expert opinion: The pharmacokinetics of ICSs and bronchodilators are not affected to a great extent by severe asthma, according to a detailed review of the currently accessible literature. Compared to healthy people, patients with severe asthma show only minor variations in a few pharmacokinetic characteristics, which are unlikely to have therapeutic significance and do not require particular attention. However, the difficulty of obtaining pharmacokinetic profiles of the three drugs included in a triple therapy suggests that the clinical response should be followed over time, which can be considered a good surrogate indicator of whether the drugs have reached sufficient concentrations in the lung to exert a valid pharmacological action.

Keywords: Asthma; ICS; LABA; LAMA; pharmacokinetics; triple therapy.

. 2023 Jun 27.
doi: 10.1111/all.15788. Online ahead of print.

Short-course subcutaneous treatment with PQ Grass strongly improves symptom and medication scores in grass allergy

P J de Kam[1], S Zielen[2], J A Bernstein[3], U Berger[4], M Berger[5], M Cuevas[6], D Cypcar[7], A Fuhr-Horst[8], W A Greisner[9], M Jandl[10], S Laßmann[11], M Worm[12], J Matz[13], E Sher[14], C Smith[15], G C Steven[16], R Mösges[17,18], M H Shamji[19,20], L DuBuske[21], F Borghese[1], K Oluwayi[1], T Zwingers[1], M Seybold[1], O Armfield[1], M D Heath[1], S J Hewings[1], M F Kramer[1], M A Skinner[1]
Affiliations expand

- PMID: 37366581

- DOI: 10.1111/all.15788

Abstract

Background: A modified grass allergen subcutaneous immunotherapy (SCIT) product with MicroCrystalline Tyrosine and monophosphoryl lipid-A as an adjuvant system (Grass MATA MPL [PQ Grass]) is being developed as short-course treatment of grass-pollen allergic rhinitis (SAR) and/or rhinoconjunctivitis. We sought to evaluate the combined symptom and medication score (CSMS) of the optimized cumulative dose of 27,600 standardized units (SU) PQ Grass in a field setting prior to embarking on a pivotal Phase III trial.

Methods: In this exploratory, randomized, double-blind, placebo-controlled trial subjects were enrolled across 14 sites (Germany and the United States of America). Six pre-seasonal subcutaneous injections of PQ Grass (using conventional or extended regimens) or placebo were administered to 119 subjects (aged 18-65 years) with moderate-to-severe SAR with or without asthma that was well-controlled. The primary efficacy endpoint was CSMS during peak grass pollen season (GPS). Secondary endpoints included Rhinoconjunctivitis Quality of Life Questionnaire standardized (RQLQ-S) and allergen-specific IgG4 response.

Results: The mean CSMS compared to placebo was 33.1% (p = .0325) and 39.5% (p = .0112) for the conventional and extended regimens, respectively. An increase in IgG4 was

shown for both regimens ($p < .01$) as well as an improvement in total RQLQ-S for the extended regimen (mean change -0.72, $p = .02$). Both regimens were well-tolerated.

Conclusions: This trial demonstrated a clinically relevant and statistically significant efficacy response to PQ Grass. Unprecedented effect sizes were reached for grass allergy of up to ≈40% compared to placebo for CSMS after only six PQ Grass injections. Both PQ Grass regimens were considered equally safe and well-tolerated. Based on enhanced efficacy profile extended regime will be progressed to the pivotal Phase III trial.

Keywords: allergic rhinoconjunctivitis; grass pollen allergy; short-course treatment; subcutaneous immunotherapy.

- 46 references

SUPPLEMENTARY INFO

Grant supportexpand

FULL TEXT LINKS

WILEY Full Text Article

Proceed to details

Cite

Share

14

Int Forum Allergy Rhinol

-
-
-

. 2023 Jun 26.
doi: 10.1002/alr.23220. Online ahead of print.

Real-world effectiveness of mepolizumab in severe asthma and chronic rhinosinusitis (CRS) in the US:

Impact of comorbidity and sinus surgery

Jared Silver[1], Arijita Deb[2], François Laliberté[3], Chi Gao[4], Neil Bhattacharyya[5]
Affiliations expand

- PMID: 37365852

- DOI: 10.1002/alr.23220

Abstract

Background: Trial data demonstrate that mepolizumab, a humanized anti-interleukin-5 monoclonal antibody, is efficacious for patients with severe asthma and comorbid chronic rhinosinusitis (CRS) with nasal polyps. This real-world, retrospective cohort study investigated mepolizumab for US patients with severe asthma and CRS with/without sinus surgery.

Methods: IQVIA PharMetrics® Plus administrative claims data from baseline and follow-up (12 months pre-/post-mepolizumab initiation) were used to analyze three patient cohorts: Cohort 1 (severe asthma only); Cohort 2 (severe asthma+comorbid CRS without sinus surgery); Cohort 3 (severe asthma+comorbid CRS+sinus surgery), allowing cross-cohort comparisons.

Results: The analysis included 495, 370, and 85 patients in Cohorts 1-3, respectively. Systemic and oral corticosteroids (OCS) use was lower for all cohorts after mepolizumab initiation. In Cohort 3, asthma rescue inhaler and antibiotic use were lower during follow-up than baseline. Asthma exacerbations were reduced by 28-44% comparing follow-up versus baseline, with the largest reduction in Cohort 3 (ratio of incidence rate ratio [RR] vs Cohort 1: 0.76; $p = 0.036$). Reductions in OCS claims were greater post-mepolizumab initiation for Cohort 3 versus Cohort 1 (RR 0.72; $p = 0.011$) and Cohort 2 (RR 0.70; $p<0.01$). In Cohorts 1-3, outpatient and emergency department visits were reduced by 1-2 and 0.4-0.6 visits annually, asthma-related and asthma exacerbation-related total costs were reduced by 387-2580 USD, and medical costs by 383-2438 USD during follow-up.

Conclusions: Consistent with trial data, mepolizumab use in real-world practice shows benefits across comorbid patient cohorts with more pronounced impact in those with severe asthma+comorbid CRS+sinus surgery.

Keywords: administrative claims; asthma; chronic sinusitis; mepolizumab; oral corticosteroids; real-world retrospective study; sinus surgery.

Arthritis Res Ther

. 2023 Jun 26;25(1):110.
doi: 10.1186/s13075-023-03097-5.

Mepolizumab exerts crucial effects on glucocorticoid discontinuation in patients with eosinophilic granulomatosis with polyangiitis: a retrospective study of 27 cases at a single center in Japan

Takashi Yamane[1], Akira Hashiramoto[2]
Affiliations expand

- PMID: 37365612
- PMCID: PMC10291743
- DOI: 10.1186/s13075-023-03097-5

Abstract

Objectives: To investigate the efficacy of mepolizumab in patients with eosinophilic granulomatosis with polyangiitis (EGPA) and factors contributing to glucocorticoid (GC) discontinuation.

Methods: We retrospectively studied EGPA patients treated with mepolizumab who were on GC at the time of induction of mepolizumab, at Japanese single center as of January 2023. Patients were classified into those who were able to discontinue GC at the time of the investigation (GC-free group) and those who continued (GC-continue group). Patient characteristics at the time of EGPA diagnosis (age, gender, absolute eosinophil counts, serum CRP level, serum IgE level, Rheumatoid factor (RF) / anti-neutrophil cytoplasmic antibody (ANCA) positivity, presence of asthma, affected organ, Five factor score (FFS), Birmingham Vasculitis Activity Score (BVAS) and characteristics at the time of mepolizumab induction (daily prednisolone dose, concomitant immunosuppressive maintenance therapy at the mepolizumab induction, prior history of GC pulse therapy, concomitant immunosuppressive therapy for remission induction,), history of relapse before mepolizumab induction and the duration of mepolizumab treatment were compared. We also followed the clinical indicators (absolute eosinophil counts, CRP and IgE levels, BVAS, Vascular Damage Index (VDI)) and daily prednisolone dosage at the EGPA diagnosis, at the mepolizumab induction and at the survey.

Results: Twenty-seven patients were included in the study. At the time of the study, patients had received mepolizumab for median 31 months (IQR, 26 to 40), the daily prednisolone dose was median 1 mg (IQR, 0 to 1.8) and GC-free was achieved in 13 patients (48%). Among clinical indicators that have improved by conventional therapy before the induction of mepolizumab, eosinophil counts, GC doses and BVAS have successively shown significant reductions throughout the observation period both GC-free and GC-continue. Of the GC-free patients, 7 were ANCA positive and 12 had FFS1 or more. Univariate analysis showed that the absolute eosinophil counts at diagnosis was significantly higher in the GC-free group (median 8165/μl (IQR, 5138 to 13,409) vs. 4360/μl (IQR, 151 to 8380), P = 0.037) and significantly fewer patients presented with gastrointestinal lesions (2 (15%) vs. 8 (57%), P = 0.025), while multivariate analysis showed no significant differences. Mepolizumab treatment significantly improved VDI in the GC-continue group (P = 0.004).

Conclusions: After three years of treatment with mepolizumab, approximately 50% of patients with EGPA achieved GC-free status. GC could be discontinued even in severe cases and ANCA-positive cases. Although multivariate analysis did not extract any significant factors contributing to achieving GC-free, we found that improvement in eosinophil counts and BVAS led to GC reduction, resulted in protection of organ damages in both the GC-

free and continuation groups. The significance of achieving GC-free remission in EGPA patients was demonstrated.

Keywords: Discontinuation; Eosinophilic granulomatosis with polyangiitis; Glucocorticoid; Mepolizumab.

Conflict of interest statement

TY has been paid as a speaker for GSK. AH received financial grants from ASAHI KASEI PHARMA, CHUGAI PHARMACEUTICAL CO. LTD, Eli Lilly Japan K.K.

- 16 references
- 2 figures

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

FULL TEXT LINKS

Review

J Asthma
.
. 2023 Jun 26;1-11.
doi: 10.1080/02770903.2023.2228911. Online ahead of print.

An update on asthma diagnosis

Charis Armeftis[1], Christina Gratziou[2], Nikolaos Siafakas[3], Paraskevi Katsaounou[4], Zoi Dorothea Pana[5], Petros Bakakos[2]
Affiliations expand

- PMID: 37358228

- DOI: 10.1080/02770903.2023.2228911

Abstract

Objective: Asthma imposes a significant health and socioeconomic burden with an average prevalence impacting 5-10% of the global population. The aim of this narrative review is to update the current literature on topics related to asthma diagnosis.

Data sources: Original research articles were identified from PubMed using the search terms "asthma diagnosis" and "asthma misdiagnosis".

Study selections: Recently published articles (n =51) detailing the diagnosis, misdiagnosis of asthma, and the updated recommendations of the European and international asthma guidelines.

Results: Emerging evidence revealed that asthma might represent a rather heterogenous clinical entity with varying underlying molecular mechanisms. Attempts have been made to unravel these traits to better provide accurate diagnosis and a more efficient patient-based management approach. The lack of a gold standard test for asthma diagnosis has contributed to its over- and underdiagnosis. This is problematic, given that overdiagnosis might lead to delay of both diagnosis and prompt treatment of other diseases, while underdiagnosis might substantially impact quality of life due to progression of asthma by increased rate of exacerbations and airway remodeling. In addition to poor asthma control and potential patient harm, asthma misdiagnosis is also associated with excessive costs. As a result, current international guidelines emphasize the need for a standardized approach to diagnosis, including objective measurements prior to treatment.

Conclusion: Future research is warranted to define the optimal diagnostic and treatable traits approach especially for patients with severe asthma, as they may benefit from the advent of newly targeted asthma management.

Keywords: Lancet Commission; endotype; guidelines; misdiagnosis; overdiagnosis; phenotype; treatable trait; underdiagnosis.

Review

Pulm Ther
.
. 2023 Jun 25.
doi: 10.1007/s41030-023-00227-x. Online ahead of print.

Systemic Corticosteroids for Treating Respiratory Diseases: Less Is Better, but… When and How Is It Possible in Real Life?

Andrea S Melani[1], Sara Croce[2], Lucia Cassai[2], Giusy Montuori[2], Gaia Fabbri[2], Maddalena Messina[2], Magda Viani[2], Elena Bargagli[2]
Affiliations expand

- PMID: 37356085

- DOI: 10.1007/s41030-023-00227-x

Free article

Abstract

Systemic corticosteroids (CSs), a keystone in pulmonology, are drugs with strong antiinflammatory activity. They are cheap, easily available, and accessible, but with common and serious side effects. Moreover, the use of exogenous CSs may suppress the hypothalamic-pituitary-adrenal (HPA) axis, predisposing to adrenal insufficiency. Safe CS treatment is a challenge of pharmacological research. This narrative review examined the indications of CSs in some respiratory diseases, analyzing what types, dosages, and length of treatment are required as the dosage and duration of CS treatments need to be minimized. Chronic maintenance treatments with CSs are associated with poor prognosis,

but they are still prescribed in patients with severe asthma, Chronic obstructive pulmonary disease (COPD), and interstitial lung diseases. When CS discontinuation is not possible, all efforts should be made to achieve clinically meaningful reductions. Guidelines suggest the use of methylprednisolone at a dose of 20-40 mg/day or equivalent for up to 10 days in subjects with COVID-19 pneumonia (but not other respiratory viral diseases) and respiratory failure, exacerbations of asthma, and COPD. Some guidelines suggest that CS treatment shorter than 10-14 days can be abruptly stopped, strictly monitoring subjects with unexplained symptoms after CS withdrawal, who should promptly be tested for adrenal insufficiency (AI) and eventually treated. CSs are often used in severe community-acquired pneumonia associated with markedly increased serum inflammation markers, in acute respiratory distress syndrome (ARDS), in septic shock unresponsive to hydro-saline replenishment and vasopressors, and acute exacerbations of interstitial lung diseases. As these cases often require higher doses and longer duration of CS treatment, CS tapering should be gradual and, when useful, supported by an evaluation of HPA axis function.

Keywords: ARDS; Adrenal insufficiency; Asthma; COVID-19; Chronic obstructive pulmonary disease (COPD); Corticosteroid; Exacerbation; Glucocorticoid; Interstitial lung disease; Pneumonia; Shock.

- 61 references

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

SpringerLink FULL-TEXT ARTICLE

Proceed to details

Cite

Share

18

Review

Respir Care

-
-
-

. 2023 Jul;68(7):871-880.
doi: 10.4187/respcare.11035.

COPD Phenotyping

Stephanie A Christenson[1]
Affiliations expand

- PMID: 37353326
- PMCID: PMC10289620 (available on 2024-07-01)
- DOI: 10.4187/respcare.11035

Abstract

COPD is a heterogeneous condition, the onset and trajectory of which is influenced not only by tobacco exposure but also an individual's genetics and the exposures they accumulate over their life course. In such a complex chronic disease, phenotyping individuals based on similar clinical or molecular characteristics can aid in guiding appropriate therapeutic management. Treatable traits, characteristics for which evidence exists for a specific favorable treatment response, are increasingly incorporated into COPD clinical guidelines. But the COPD phenotyping literature is evolving. Innovations in lung imaging and physiologic metrics, as well as omics technologies and biomarker science, are contributing to a better understanding of COPD heterogeneity. This review summarizes the evolution of COPD phenotyping, the current use of phenotyping to direct clinical care, and how innovations in clinical and molecular approaches to unraveling disease heterogeneity are refining our understanding of COPD phenotypes.

Keywords: COPD; asthma-COPD; phenotype.

Conflict of interest statement

Dr Christenson discloses relationships with AstraZeneca, Sanofi/Regeneron, and GlaxoSmithKline.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

Review

Pediatr Emerg Med Pract

. 2023 Jul;20(7):1-28.
Epub 2023 Jul 1.

Emergency department management of pediatric acute asthma: an evidence-based review

Audrey Zelicof Paul[1], Kim A Rutherford[1], Stephanie M Abuso[2]
Affiliations expand

- PMID: 37352408

Abstract

Asthma is the most common chronic disease of childhood. Although home action plans and the use of maintenance medications have improved daily management and control of asthma, many children still require emergency department care at least once per year. Emergency clinicians must be able to manage patients with acute asthma exacerbations and determine their safe disposition. This issue reviews the current evidence-based emergency department management recommendations for moderate to severe acute asthma in pediatric patients. Timely use of bronchodilators and systemic corticosteroids, as well as adjunct modalities, are discussed. Current challenges in asthma management related to vaping and COVID-19 are also addressed.

SUPPLEMENTARY INFO

J Asthma
.
. 2023 Jun 27;1-9.
doi: 10.1080/02770903.2023.2228900. Online ahead of print.

The association of varying treatment thresholds of mepolizumab on asthma exacerbations in adults

Jaclyn Davis[1], Pamela M McMahon[2], Andrew Simon[2], Katherine Haffenreffer[2], Aziza Jamal-Allial[3], Cheryl N McMahill-Walraven[4], Anne Marie Kline[4], Jeffrey S Brown[2], Melissa K Van Dyke[5], Rupert W Jakes[5], Ann Chen Wu[1,2]
Affiliations expand

- PMID: 37347586

- DOI: 10.1080/02770903.2023.2228900

Abstract

Background: Asthma has a high healthcare burden globally, with up to 10% of the asthma population suffering from severe disease. Biologic agents are a newer class of asthma treatments for severe asthma, with good evidence for efficacy in clinical trials. Nevertheless, real-world studies of its impact on clinical outcomes are limited.**Methods:** This is an observational cohort study using administrative claims data. The study population consisted of patients aged ≥18 years who had a diagnosis of asthma and initiated mepolizumab after November 4, 2015 and had continuous medical and drug coverage in both the 365 days prior to and following mepolizumab initiation. In patients treated with mepolizumab, we described clinically significant asthma exacerbations by minimum continuous treatment thresholds following initiation of mepolizumab, medication switching patterns and chronic oral corticosteroid (≥28 days) use.**Results:** We identified 2,536 adults with asthma who initiated mepolizumab. There was an association toward reduction in severe asthma-related events over the first one year of exposure. We observed associations with reduced dispensings of oral corticosteroids over the first year after mepolizumab initiation. Very few patients switched to other biologics during the

study period.**Conclusions:** Treatment with mepolizumab may be associated with fewer asthma-related events in the first year. Over the first one year after initiating mepolizumab, we found associations with decreased concomitant dispensings of oral corticosteroids and medium to high dose ICS/LABA. Additionally, most patients who initiated mepolizumab did not switch to other biologics.

Keywords: asthma; biologics; corticosteroids; effectiveness; exacerbations; mepolizumab.

Review

Expert Opin Drug Deliv

. 2023 Jun 27;1-14.
doi: 10.1080/17425247.2023.2228681. Online ahead of print.

Delivering monoclonal antibodies via inhalation: a systematic review of clinical trials in asthma and COPD

Rossella Laitano[1], Luigino Calzetta[2], Francesco Cavalli[1], Mario Cazzola[1], Paola Rogliani[1]
Affiliations expand

- PMID: 37342873

- DOI: 10.1080/17425247.2023.2228681

Abstract

Introduction: Advances in understanding the pathophysiology of asthma and chronic obstructive pulmonary disease (COPD) led to investigation of biologic drugs targeting

specific inflammatory pathways. No biologics are licensed for COPD while all the approved monoclonal antibodies (mAbs) for severe asthma treatment are systemically administered. Systemic administration is associated with low target tissue exposure and risk of systemic adverse events. Thus, delivering mAbs via inhalation may be an attractive approach for asthma and COPD treatment due to direct targeting of the airways.

Areas covered: This systematic review of randomized control trials (RCTs) evaluated the potential role of delivering mAbs via inhalation in asthma and COPD treatment. Five RCTs were deemed eligible for a qualitative analysis.

Expert opinion: Compared to systemic administration, delivering mAbs via inhalation is associated with rapid onset of action, greater efficacy at lower doses, minimal systemic exposure, and lower risk of adverse events. Although some of the inhaled mAbs included in this study showed a certain level of efficacy and safety in asthmatic patients, delivering mAbs via inhalation is still challenging and controversial. Further adequately powered and well-designed RCTs are needed to assess the potential role of inhaled mAbs in the treatment of asthma and COPD.

Keywords: Asthma; COPD; inhaled; monoclonal antibodies; systematic review.

J Asthma

. 2023 Jun 30;1-7.
doi: 10.1080/02770903.2023.2225606. Online ahead of print.

An exploratory analysis examining differences in physical activity and

motor competence in children with and without asthma: brief report

Anna Schwartz[1], Lexie R Beemer[1], Tiwaloluwa A Ajibewa[1], Katherine Q Scott-Andrews[1], Toby C Lewis[2,3], Leah E Robinson[1], Rebecca E Hasson[1,3]
Affiliations expand

- PMID: 37339004

- DOI: 10.1080/02770903.2023.2225606

Abstract

Objective: The purpose of this pilot study was to examine potential differences in motor competence (MC) and physical activity (PA) between children with and without asthma.

Methods: Thirty-seven children and adolescents completed the Exercises for a Healthy Asthma Lifestyle and Enjoyment study (46% with asthma, 51% female, 11.1 ± 0.4 years, and 46% White). Motor competence was assessed using the Movement Assessment Battery for Children 2nd edition (MABC-2). PA was assessed using accelerometry.

Results: Children with asthma had significantly lower MC in the domain of aiming and catching (with asthma: 8.2 ± 0.4 vs. without asthma: 9.9 ± 0.5; $p = 0.03$) and fewer daily minutes spent in moderate-to-vigorous PA (MVPA) (with asthma: 18.0 ± 2.3 min vs. without asthma: 27.2 ± 3.6 min; $p = 0.047$). There were no significant group differences in manual dexterity, balance, total MABC-2 score, or total daily PA (all ps > 0.05).

Conclusions: This study provides confirmatory evidence that children with asthma display lower MC and spend less time in MVPA compared to children without asthma. Because MC is a prerequisite for engaging in PA, future research should seek to determine if the differences observed in MC contribute to disparities in MVPA observed in this clinical population.

Keywords: Pediatric; prevention.

Review

Int J Mol Med
.
2023 Jul;52(1):63.
doi: 10.3892/ijmm.2023.5266. Epub 2023 Jun 9.

Obesity alters inflammatory response in the pathology of asthma (Review)

Ziwen Qin[1], Hong Yang[2], Junli Liu[3], Dongxiao Li[4], Yue Wang[1], Yujuan Chen[4], Chuanjun Huang[5]
Affiliations expand

- PMID: 37293862

- DOI: 10.3892/ijmm.2023.5266

Abstract

Obesity is one of the comorbidities in patients with asthma and obese patients with asthma present with a distinct phenotype with more severe disease outcomes and reduced responsiveness to standard therapies. Although the full mechanisms of obesity-related asthma are still not completely understood, abnormal immune responses have been demonstrated to have a critical role in asthma pathogenesis. The present review summarizes the data from clinical, epidemiological and animal studies to provide an updated understanding of the immune responses in obesity-related asthma, as well as the effect of various factors, such as oxidative stress, mitochondrial dysfunction, genetics and epigenetics, on asthmatic inflammation. Further studies on the in-depth mechanisms are still required to develop novel preventive and therapeutic strategies for patients with asthma combined with obesity.

Keywords: T helper 2; airway hyperresponsiveness; airway inflammation; body mass index; high-fat diet; immune response; nitric oxide; obesity-related asthma; reactive oxygen species.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

24

Lancet Reg Health Am

-
-
-

. 2023 May 30;23:100526.
doi: 10.1016/j.lana.2023.100526. eCollection 2023 Jul.

Influenza vaccination and healthcare utilization in asthma: a Canadian experience

Subhabrata Moitra[1], Paige Lacy[1]
Affiliations expand

- PMID: 37293392

- PMCID: PMC10245323

- DOI: 10.1016/j.lana.2023.100526

Free PMC article

No abstract available

Conflict of interest statement

None.

- 11 references

- 1 figure

FULL TEXT LINKS

ELSEVIER OPEN ACCESS

Proceed to details

Cite

Share

25

Review

Eur Respir Rev

. 2023 Jun 7;32(168):230019.
doi: 10.1183/16000617.0019-2023. Print 2023 Jun 30.

Extreme weather and asthma: a systematic review and meta-analysis

Firdian Makrufardi[1,2], Amja Manullang[1], Desy Rusmawatiningtyas[2], Kian Fan Chung[3], Sheng-Chieh Lin[4,5], Hsiao-Chi Chuang[6,7,8,9]

Affiliations expand

- PMID: 37286218

- PMCID: PMC10245140

- DOI: 10.1183/16000617.0019-2023

Free PMC article

Abstract

Background: Climate change's influence on extreme weather events poses a significant threat to the morbidity and mortality of asthma patients. The aim of this study was to examine associations between extreme weather events and asthma-related outcomes.

Methods: A systematic literature search for relevant studies was performed using the PubMed, EMBASE, Web of Science and ProQuest databases. Fixed-effects and random-effects models were applied to estimate the effects of extreme weather events on asthma-related outcomes.

Results: We observed that extreme weather events were associated with increasing risks of general asthma outcomes with relative risks of 1.18-fold for asthma events (95% CI 1.13-1.24), 1.10-fold for asthma symptoms (95% CI 1.03-1.18) and 1.09-fold for asthma diagnoses (95% CI 1.00-1.19). Extreme weather events were associated with increased risks of acute asthma exacerbation with risk ratios of asthma emergency department visits of 1.25-fold (95% CI 1.14-1.37), of asthma hospital admissions of 1.10-fold (95% CI 1.04-1.17), of asthma outpatient visits of 1.19-fold (95% CI 1.06-1.34) and of asthma mortality of 2.10-fold (95% CI 1.35-3.27). Additionally, an increase in extreme weather events increased risk ratios of asthma events by 1.19-fold in children and 1.29-fold in females (95% CI 1.08-1.32 and 95% CI 0.98-1.69, respectively). Thunderstorms increased the risk ratio of asthma events by 1.24-fold (95% CI 1.13-1.36).

Conclusions: Our study showed that extreme weather events more prominently increased the risk of asthma morbidity and mortality in children and females. Climate change is a critical concern for asthma control.

Conflict of interest statement

Conflict of interest: All authors have nothing to disclose.

- 78 references
- 5 figures

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

. 2023 Jul;40(7):2927-2943.
doi: 10.1007/s12325-023-02543-9. Epub 2023 Jun 7.

SABAs as Reliever Medications in Asthma Management: Evidence-Based Science

Israel Amirav[1], Gabriel Garcia[2], Bao Khac Le[3], Paulina Barria[4], Gur Levy[5], Bhumika Aggarwal[6], Kyle Fahrbach[7], Amber Martin[7], Abhay Phansalkar[8], Thitiwat Sriprasart[9]
Affiliations expand

- PMID: 37280414

- PMCID: PMC10244083

- DOI: 10.1007/s12325-023-02543-9

Free PMC article

Abstract

The role of as-needed inhaled short-acting β_2-agonists (SABAs) in the management of asthma has become a subject of debate due to differing opinions in the professional community relating to the use of SABAs. In this article, we summarize the current position of SABAs when used as reliever medications and examine the challenges to appropriate use including a critique of the data that have led to the condemnation of SABA used as a reliever. We consider the evidence for the appropriate use of SABA as a reliever together with practical solutions to ensure such use, including identifying patients at risk of misusing their SABA relievers and managing issues of inhaler technique and treatment adherence. We conclude that inhaled corticosteroid (ICS)-based maintenance treatment with SABA used as-needed as a reliever is an effective and safe treatment for patients with asthma, with no scientific evidence of a causal link between SABA use as a reliever and mortality or serious adverse events (including exacerbations). Increased SABA use warns of a deterioration in asthma control, and patients at risk of misusing their ICS and SABA medication should be rapidly identified to ensure they are receiving adequate ICS-based

controller therapy. Appropriate use of ICS-based controller therapy and as-needed SABA should be encouraged and promoted with educational activities.

Keywords: As-needed reliever; Asthma management; SABA; Scientific evidence; Short-acting β2-agonists.

Conflict of interest statement

Israel Amirav has no competing interests to declare. Gabriel Garcia has received advisory board consulting fees from Chiesi, GSK, Novartis and Sanofi; and has received support to attend conferences from GSK, Novartis and Sanofi. Le Khac Bao has received honoraria for lectures, presentations, speakers' bureaus or educational events from Abbott, AstraZeneca, Boehringer Ingelheim, GSK, Pfizer and Novartis; honoraria for providing expert advice in advisory boards from Boehringer Ingelheim, GSK and Pfizer; and support for travel/attending meetings from AstraZeneca, Boehringer Ingelheim and Pfizer. Paulina Barria has received honoraria for lecture presentations from GSK and Sanofi-Aventis; honoraria for providing expert advice in advisory boards/expert forums from AstraZeneca, GSK and Novartis; and support for travel/attending meetings from GSK and Sanofi-Aventis. Thitiwat Sriprasart has no competing interests to declare. Gur Levy, Bhumika Aggarwal, Abhay Phansalkar and Peter Daley-Yates are GSK employees and hold GSK shares. Kyle Fahrbach and Amber Martin are employees of Evidera who provided statistical and intellectual support for this manuscript, funded by GSK.

. 2023 Jul;90(7):708-717.
doi: 10.1007/s12098-023-04592-y. Epub 2023 Jun 2.

Evidence-Based Guidelines for the Management of Allergic Bronchopulmonary Aspergillosis (ABPA) in Children and Adolescents with Asthma

Joseph L Mathew[1], Ketan Kumar[2], Sheetal Agrawal[#3], Sanjay Bafna[#4], Sonia Bhatt[#5], Pallab Chatterjee[#6], N S Chithambaram[#7], Rashmi Ranjan Das[#8], Hema Gupta[#3], Sarika Gupta[#9], Kana Ram Jat[#10], Pawan Kalyan[#11], Rashmi Kapoor[#12], Hardeep Kaur[#10], Jasmeet Kaur[#13], Satnam Kaur[#14], Suhas P Kulkarni[#15], Amber Kumar[#16], Sanjiv Singh Rawat[#17], Vivek Saxena[#18], Anita Singh[#19], Somu Sivabalan[#20], Shetanshu Srivastava[#21], Anshula Tayal[#10]
Affiliations expand

- PMID: 37264275

- DOI: 10.1007/s12098-023-04592-y

Abstract

Background: Allergic bronchopulmonary aspergillosis (ABPA) frequently complicates asthma. There is urgent need to develop evidence-based guidelines for the management of ABPA in children. The Evidence Based Guideline Development Group (EBGDG) of the Indian Academy of Pediatrics (IAP) National Respiratory Chapter (NRC) addressed this need.

Methods: The EBGDG shortlisted clinical questions relevant to the management of ABPA in asthma. For each question, the EBGDG undertook a systematic, step-wise evidence search for existing guidelines, followed by systematic reviews, followed by primary research studies. The evidence was collated, critically appraised, and synthesized. The EBGDG worked through the Evidence to Decision (EtD) framework, to formulate recommendations, using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach.

Results: Seven clinical questions were prioritized, and the following recommendations formulated. (1) Children with poorly controlled asthma should be investigated for ABPA (conditional recommendation, moderate certainty of evidence). (2) Low dose steroid therapy regimen (0.5 mg/kg/d for the first 2 wk, followed by a progressive tapering) is preferable to higher dose regimens (conditional recommendation, very low certainty of evidence). (3) Oral steroid regimens longer than 16 wk (including tapering), should not be used (conditional recommendation, very low certainty of evidence). (4) Antifungals may or may not be added to steroid therapy as the evidence was neither in favour nor against (conditional recommendation, low certainty of evidence). (5) For clinicians using antifungal agents, the EBGDG recommends against using voriconazole instead of itraconazole (conditional recommendation, very low certainty of evidence). (6) No evidence-based recommendation could be framed for using pulse steroid therapy in preference to conventional steroid therapy. (7) Immunotherapy with biologicals including omalizumab or dupilumab is not recommended (conditional recommendation, very low certainty of evidence).

Conclusions: This evidence-based guideline can be used by healthcare providers in diverse clinical settings.

Keywords: Allergic bronchopulmonary aspergillosis (ABPA); Asthma; Evidence-based; Guideline.

- 33 references

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

28

J Med Internet Res

-
-
-

. 2023 Jun 29;25:e41490.
doi: 10.2196/41490.

Digital Action Plan (Web App) for Managing Asthma Exacerbations: Randomized Controlled Trial

Nicole Beydon[1], Camille Taillé[2], Harriet Corvol[3], Judith Valcke[4], Jean-Jacques Portal[5], Laurent Plantier[6], Gilles Mangiapan[7], Caroline Perisson[3], Guillaume Aubertin[8], Alice Hadchouel[9], Guillaume Briend[10], Laurent Guilleminault[11], Catherine Neukirch[12], Pierrick Cros[13], Corinne Appere de Vecchi[14], Bruno Mahut[15], Eric Vicaut[5], Christophe Delclaux[16]
Affiliations expand

- PMID: 37255277

- DOI: 10.2196/41490

Free article

Abstract

Background: A written action plan (WAP) for managing asthma exacerbations is recommended.

Objective: We aimed to compare the effect on unscheduled medical contacts (UMCs) of a digital action plan (DAP) accessed via a smartphone web app combined with a WAP on paper versus that of the same WAP alone.

Methods: This randomized, unblinded, multicenter (offline recruitment in private offices and public hospitals), and parallel-group trial included children (aged 6-12 years) or adults (aged 18-60 years) with asthma who had experienced at least 1 severe exacerbation in the previous year. They were randomized to a WAP or DAP+WAP group in a 1:1 ratio. The DAP (fully automated) provided treatment advice according to the severity and previous pharmacotherapy of the exacerbation. The DAP was an algorithm that recorded 3 to 9 clinical descriptors. In the app, the participant first assessed the severity of their current symptoms on a 10-point scale and then entered the symptom descriptors. Before the trial, the wordings and ordering of these descriptors were validated by 50 parents of children with asthma and 50 adults with asthma; the app was not modified during the trial. Participants were interviewed at 3, 6, 9, and 12 months to record exacerbations, UMCs, and WAP and DAP use, including the subjective evaluation (availability and usefulness) of the action plans, by a research nurse.

Results: Overall, 280 participants were randomized, of whom 33 (11.8%) were excluded because of the absence of follow-up data after randomization, leaving 247 (88.2%) participants (children: n=93, 37.7%; adults: n=154, 62.3%). The WAP group had 49.8% (123/247) of participants (children: n=45, 36.6%; mean age 8.3, SD 2.0 years; adults: n=78, 63.4%; mean age 36.3, SD 12.7 years), and the DAP+WAP group had 50.2% (124/247) of participants (children: n=48, 38.7%; mean age 9.0, SD 1.9 years; adults: n=76, 61.3%; mean age 34.5, SD 11.3 years). Overall, the annual severe exacerbation rate was 0.53 and not different between the 2 groups of participants. The mean number of UMCs per year was 0.31 (SD 0.62) in the WAP group and 0.37 (SD 0.82) in the DAP+WAP group (mean difference 0.06, 95% CI -0.12 to 0.24; P=.82). Use per patient with at least 1 moderate or severe exacerbation was higher for the WAP (33/65, 51% vs 15/63, 24% for the DAP; P=.002). Thus, participants were more likely to use the WAP than the DAP despite the nonsignificant difference between the action plans in the subjective evaluation. Median symptom severity of the self-evaluated exacerbation was 4 out of 10 and not significantly different from the symptom severity assessed by the app.

Conclusions: The DAP was used less often than the WAP and did not decrease the number of UMCs compared with the WAP alone.

Trial registration: ClinicalTrials.gov NCT02869958; https://clinicaltrials.gov/ct2/show/NCT02869958.

Keywords: action plan; asthma exacerbation; mobile phone; web application.

Adv Ther
•
•
•
. 2023 Jul;40(7):2944-2964.
doi: 10.1007/s12325-023-02514-0. Epub 2023 May 26.

Efficacy of Biologics in Severe, Uncontrolled Asthma Stratified by Blood Eosinophil Count: A Systematic Review

Stephanie Korn[1,2], Bill Cook[3], Lisa J Simpson[4], Jean-Pierre Llanos[5], Christopher S Ambrose[6]
Affiliations expand

- PMID: 37233876
- PMCID: PMC10272272
- DOI: 10.1007/s12325-023-02514-0

Free PMC article

Abstract

Introduction: Randomized controlled trials (RCTs) of biologics in patients with severe, uncontrolled asthma have shown differential results by baseline blood eosinophil count (BEC). In the absence of head-to-head trials, we describe the effects of biologics on annualized asthma exacerbation rate (AAER) by baseline BEC in placebo-controlled RCTs. Exacerbations associated with hospitalization or an emergency room visit, pre-bronchodilator forced expiratory volume in 1 s, Asthma Control Questionnaire score, and Asthma Quality of Life Questionnaire score were also summarized.

Methods: MEDLINE (via PubMed) was searched for RCTs of biologics in patients with severe, uncontrolled asthma and with AAER reduction as a primary or secondary endpoint. AAER ratios and change from baseline in other outcomes versus placebo were compared across baseline BEC subgroups. Analysis was limited to US Food and Drug Administration-approved biologics.

Results: In patients with baseline BEC ≥ 300 cells/µL, AAER reduction was demonstrated with all biologics, and other outcomes were generally improved. In patients with BEC 0 to < 300 cells/µL, consistent AAER reduction was demonstrated only with tezepelumab; improvements in other outcomes were inconsistent across biologics. In patients with BEC 150 to < 300 cells/µL, consistent AAER reduction was demonstrated with tezepelumab and dupilumab (300 mg dose only), and in those with BEC 0 to < 150 cells/µL, AAER reduction was demonstrated only with tezepelumab.

Conclusion: The efficacy of all biologics in reducing AAER in patients with severe asthma increases with higher baseline BEC, with varying profiles across individual biologics likely due to differing mechanisms of action.

Keywords: Biologic; Blood eosinophil; Efficacy; Exacerbations; Randomized placebo-controlled trial; Severe asthma; Systematic review.

Conflict of interest statement

Stephanie Korn has received fees for lectures and/or advisory board meetings from AstraZeneca, GSK, Novartis, Roche, Sanofi-Aventis, and Teva Pharmaceuticals. Bill Cook and Christopher S. Ambrose are employees of AstraZeneca and may own stock or stock options in AstraZeneca. Lisa J. Simpson is an employee of PharmaGenesis London, a HealthScience communications consultancy. Jean-Pierre Llanos is an employee of Amgen and owns stock in Amgen.

- 43 references
- 6 figures

. 2023 Jul;28(7):592-593.
doi: 10.1111/resp.14522. Epub 2023 May 22.

Asthma research priorities: Listening to everybody

Robert J Hancox[1], Philip G Bardin[2]
Affiliations expand

- PMID: 37218110

- DOI: 10.1111/resp.14522

No abstract available

Keywords: asthma; end-user engagement; research priorities.

- 9 references

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

WILEY Full Text Article
Proceed to details
Cite

Share
31

Review

Clin Sports Med

. 2023 Jul;42(3):427-440.

doi: 10.1016/j.csm.2023.02.007. Epub 2023 Apr 6.

General Medical Emergencies in Athletes

Jens T Verhey[1], Steven K Poon[2]
Affiliations expand

- PMID: 37208057

- DOI: 10.1016/j.csm.2023.02.007

Abstract

This article focuses on the management of the most common on-field medical emergencies. As with any discipline in medicine, a well-defined plan and systematic approach is the cornerstone of quality health care delivery. In addition, the team-based collaboration is necessary for the safety of the athlete and the success of the treatment plan.

Keywords: Asthma; Emergency action plan; Sports medicine; Sudden cardiac arrest.

Int J Pediatr Otorhinolaryngol

. 2023 Jul;170:111600.

doi: 10.1016/j.ijporl.2023.111600. Epub 2023 May 9.

Prophylactic inhaled corticosteroids for the management of recurrent croup

Lauren E Sowa[1], Paul C Stillwell[2], Paul R Houin[2], Nathalie Nguyen[3], Jeremy D Prager[4], Todd Wine[4], Nathan J Teynor[5], Maxine Meier[6], Romney B Hanson[6], Christian Francom[4], Sarah A Gitomer[7]
Affiliations expand

- PMID: 37201337

- DOI: 10.1016/j.ijporl.2023.111600

Abstract

Objectives: Croup is characterized by a barky cough, inspiratory stridor, hoarseness and varying degrees of respiratory distress. Acute croup episodes are often treated with oral, inhaled, or intravenous corticosteroids. Recurrent croup, defined as more than 2-3 episodes of acute croup in the same patient, can mimic asthma. We hypothesized that inhaled corticosteroids (ICS) given at the first sign of a respiratory viral prodrome can be a safe treatment to reduce the frequency of recurrent croup episodes in children without fixed airway lesions.

Methods: A retrospective chart review of patients being treated over an 18-month period was performed at a large tertiary care pediatric hospital following Institutional Review Board (IRB) approval. Patients under 21 years old referred to Pediatric Pulmonology, Otolaryngology, or Gastroenterology for recurrent croup were analyzed for their demographics, medical history, evaluation, treatment and clinical improvement. A Fisher's two-tailed exact test was used to compare the number of croup episodes before and after interventions.

Results: 124 patients were included in our analysis: 87 male and 34 female with a mean age of 54 months. Of these, 78 had >5 episodes of croup, 45 had 3-5, and 3 had 2 episodes prior to their first visit for recurrent croup. Operative direct laryngoscopy/bronchoscopy was performed in 35 patients (27.8%), with 60% showing a normal exam without fixed lesions. Ninety-two patients (74.2%) were treated with ICS, 24 were lost to follow up. Of the remaining 68 treated patients, 59 (86.7%) saw improvement with reduced severity and overall number of episodes of croup. Additionally, patients with >5 episodes of croup (47) as compared to <5 (12) were more likely to improve with ICS, ($p = 0.003$). There were no adverse reactions reported with ICS treatment.

Conclusion: The novel initiation of ICS at the earliest sign of a viral upper respiratory infection shows promise as a safe preventative treatment to mitigate the frequency of recurrent croup episodes.

Keywords: Croup; Inhaled steroid; Pediatric; Preventative.

Conflict of interest statement

Declaration of competing interest None

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

FULL TEXT LINKS

Review

Eur Respir Rev

. 2023 May 17;32(168):220201.
doi: 10.1183/16000617.0201-2022. Print 2023 Jun 30.

Phenotype overlap in the natural history of asthma

Fabio L M Ricciardolo[1,2], Giuseppe Guida[3], Francesca Bertolini[3], Antonino Di Stefano[4], Vitina Carriero[3]
Affiliations expand

- PMID: 37197769

- PMCID: PMC10189644

- DOI: 10.1183/16000617.0201-2022

Free PMC article

Abstract

The heterogeneity of asthma makes it challenging to unravel the pathophysiologic mechanisms of the disease. Despite the wealth of research identifying diverse phenotypes, many gaps still remain in our knowledge of the disease's complexity. A crucial aspect is the impact of airborne factors over a lifetime, which often results in a complex overlap of phenotypes associated with type 2 (T2), non-T2 and mixed inflammation. Evidence now shows overlaps between the phenotypes associated with T2, non-T2 and mixed T2/non-T2 inflammation. These interconnections could be induced by different determinants such as recurrent infections, environmental factors, T-helper plasticity and comorbidities, collectively resulting in a complex network of distinct pathways generally considered as mutually exclusive. In this scenario, we need to abandon the concept of asthma as a disease characterised by distinct traits grouped into static segregated categories. It is now evident that there are multiple interplays between the various physiologic, cellular and molecular features of asthma, and the overlap of phenotypes cannot be ignored.

Conflict of interest statement

Conflict of interest: F.L.M. Ricciardolo reports grants from Chiesi, grants and personal fees from AstraZeneca, GSK and Sanofi, and personal fees from Novartis outside the submitted work. G. Guida reports personal fees from AstraZeneca, outside the submitted work. F. Bertolini and A. Di Stefano have no conflicts of interest. V. Carriero received a grant from Sanofi.

- 145 references
- 3 figures

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

Free full text at ersjournals.com

Proceed to details
Cite

Share
34
Pediatr Pulmonol
-
-
-
. 2023 Jul;58(7):2140-2141.
doi: 10.1002/ppul.26450. Epub 2023 May 10.

Safety of biologicals in severe asthma patients having COVID-19

Öner Özdemir[1]
Affiliations expand

- PMID: 37161905

- DOI: 10.1002/ppul.26450

No abstract available

SUPPLEMENTARY INFO

MeSH terms, Substances, Grant supportexpand

FULL TEXT LINKS

WILEY Full Text Article
Proceed to details
Cite

Share
35
Respir Med
-
-
-
. 2023 Jul;213:107260.

doi: 10.1016/j.rmed.2023.107260. Epub 2023 May 3.

The association between MUC5AC and MUC5B genes expression and remodeling progression in severe neutrophilic asthma: A direct relationship

Amirhossein Mohajeri Khorasani[1], Bita Mohammadi[2], Mohammad Reza Saghafi[2], Samane Mohammadi[3], Shadi Ghaffari[4], Majid Mirsadraee[5], Mohammad Reza Khakzad[6]
Affiliations expand

- PMID: 37146737

- DOI: 10.1016/j.rmed.2023.107260

Abstract

Background: MUC5 dysregulation is a hallmark of severe neutrophilic asthmatic patients. This study investigates the expression of MUC5AC and MUC5B at mRNA levels on asthma severity and airway wall thickness in severe neutrophilic asthmatic patients.

Method: In this case-control clinical trial, twenty-five severe neutrophilic asthmatic patients and ten control subjects were enrolled. Subjects underwent ACT, pulmonary functions tests, and fractional exhaled nitric oxide (FENO). Also, induced sputum has been obtained to assess the expression of MUC5AC and MUC5B by the real-time PCR. In addition, the thickness of the airway wall was assessed by high-resolution computed tomography (HRCT), and bioinformatic analysis was implemented to approve the selection of the appropriate genes and for further investigations.

Result: A significant difference was observed between the asthmatic and control in MUC5AC and MUC5B mRNA expression. Meanwhile, the expression of MUC5AC increased remarkably by asthma severity; also, it is associated with airway wall thickness (WT) (both P-value <0.05). The expression of MUC5B in asthmatic patients was lower than in control. There is no significant correlation between MUC5B mRNA level and WT and asthma severity. Notably, MUC5AC transcription level was correlated to sputum neutrophil percentage, while MUC5B transcription level had a positive correlation with sputum macrophages and a negative one with sputum neutrophils.

Conclusion: In severe neutrophilic asthma, airway wall thickness increases with MUC5AC mRNA overexpression, which is probably related to asthma severity and the formation of mucus plugs. However, the expression of MUC5B was decreased, resulting in poor mucociliary clearance in the airways.

Trial registration: IR.IAU.MSHD.REC.1400.124.

Keywords: Airway remodeling; Airway wall thickness; MUC5AC; MUC5B; Severe neutrophilic asthma.

Conflict of interest statement

Declaration of competing interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Brain Behav Immun

. 2023 Jul;111:249-258.

doi: 10.1016/j.bbi.2023.04.011. Epub 2023 May 3.

The role of inflammation in anxiety and depression in the European U-BIOPRED asthma cohorts

Ruihua Hou[1], Gang Ye[2], Xiaojing Cheng[3], Dominick E Shaw[4], Per S Bakke[5], Massimo Caruso[6], Barbro Dahlen[7], Sven-Erik Dahlen[7], Stephen J Fowler[8], Ildikó Horváth[9], Peter

Howarth[10], Norbert Krug[11], Paolo Montuschi[12], Marek Sanak[13], Thomas Sandström[14], Charles Auffray[15], Bertrand De Meulder[15], Ana R Sousa[16], Ian M Adcock[17], Kian Fan Chung[17], Peter J Sterk[18], Paul J Skipp[19], James Schofield[20], Ratko Djukanović[21]; U-BIOPRED Study Group
Affiliations expand

- PMID: 37146653

- DOI: 10.1016/j.bbi.2023.04.011

Free article

Abstract

Background: Growing evidence indicates high comorbid anxiety and depression in patients with asthma. However, the mechanisms underlying this comorbid condition remain unclear. The aim of this study was to investigate the role of inflammation in comorbid anxiety and depression in three asthma patient cohorts of the Unbiased Biomarkers for the Prediction of Respiratory Disease Outcomes (U-BIOPRED) project.

Methods: U-BIOPRED was conducted by a European Union consortium of 16 academic institutions in 11 European countries. A subset dataset from subjects with valid anxiety and depression measures and a large blood biomarker dataset were analysed, including 198 non-smoking patients with severe asthma (SAn), 65 smoking patients with severe asthma (SAs), 61 non-smoking patients with mild-to-moderate asthma (MMA), and 20 healthy non-smokers (HC). The Hospital Anxiety and Depression Scale was used to measure anxiety and depression and a series of inflammatory markers were analysed by the SomaScan v3 platform (SomaLogic, Boulder, Colo). ANOVA and the Kruskal-Wallis test were used for multiple-group comparisons as appropriate.

Results: There were significant group effects on anxiety and depression among the four cohort groups ($p < 0.05$). Anxiety and depression of SAn and SAs groups were significantly higher than that of MMA and HC groups ($p < 0.05$. There were significant differences in serum IL6, MCP1, CCL18, CCL17, IL8, and Eotaxin among the four groups ($p < 0.05$). Depression was significantly associated with IL6, MCP1, CCL18 level, and CCL17; whereas anxiety was associated with CCL17 only ($p < 0.05$).

Conclusions: The current study suggests that severe asthma patients are associated with higher levels of anxiety and depression, and inflammatory responses may underlie this comorbid condition.

Keywords: Anxiety; Asthma; Depression; Inflammation; U-BIOPRED.

Conflict of interest statement

Declaration of Competing Interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Professor Hou sits on the ECNP Scientific Advisory Panel and currently holds a grant from Asthma Allergy Inflammation Research charity. Prof. Shaw receives consulting fees from Adherium, Nuvoair, Astra Zeneca and Chiesi. He also receives honoraria from Astra Zeneca and Chiesi and travel support from Chiesi and GSK. Professor Sven-Eric Dahlén declares consulting fees from Astra Zenica, Cayman Chemicals, GSK, Novartis, Regeneron, Sanofi and Teva and honorarium from Sanofi. Dr Barbro Dahlén is in receipt of grants from GSK and Novartis and declares consulting fees from Novartis, Astra Zeneca and Sanofi. She is on the advisory board for Astra Zeneca and Sanofi. Prof. Fowler receives a grant from Boehringer Ingelheim and an honorarium from Chiesi. Prof. Sandstrom received payment for the Boehringer Ingelheim lecture (paid to his institution). Dr Auffrey and Dr De Meulder have both received support for the manuscript from the Innovative Medicines Initiative. Prof. Adcock has received grants from GSK, MRC and EPSRC. He also declares consulting fees from GSK, Sanofi, Chiesi and Kinaset. He has received honoraria from Astra Zeneca, Sanofi, Eurodrug, and Sunovion. He has also received payment for expert testimony from Chiesi and travel support from Astra Zeneca. Prof. Chung is in receipt of grants from MRC, EPSRC and GSK and honoraria from Astra Zeneca and Novartis. He is on the advisory board of Astra Zeneca, GSK, Roche and Novartis. Prof. Sterk received a grant from Innovative Medicines Initiative and has a non-substantial interest in SME Breathomix. Prof. Skipp has a grant from EU UBIOPRED IMI FP and is a shareholder in TopMD Precision Medicine Ltd. Prof. Djukanovic receives consulting fees from Synairgen and honoraria from Regeneron, GSK and is on the advisory board for Synairgen. He also holds stock in Synairgen. Dr Ye, Dr Cheng, Dr Bakke, Dr Caruso, Dr Horvárth, Prof. Howarth, Dr Krug, Dr Montuschi, Dr Sanak and Dr Schofield report no potential conflict of interest.

ERJ Open Res

. 2023 May 2;9(3):00444-2022.
doi: 10.1183/23120541.00444-2022. eCollection 2023 Jul.

Definitions of non-response and response to biological therapy for severe asthma: a systematic review

Ekaterina Khaleva[1], Anna Rattu[1], Chris Brightling[2], Andrew Bush[3], Arnaud Bourdin[4], Apostolos Bossios[5], Kian Fan Chung[6], Rekha Chaudhuri[7], Courtney Coleman[8], Ratko Djukanovic[1,9], Sven-Erik Dahlén[5], Andrew Exley[10], Louise Fleming[6], Stephen J Fowler[11], Atul Gupta[12], Eckard Hamelmann[13], Gerard H Koppelman[14,15], Erik Melén[16], Vera Mahler[17], Paul Seddon[18], Florian Singer[19,20], Celeste Porsbjerg[21], Valeria Ramiconi[22], Franca Rusconi[23], Valentyna Yasinska[5], Graham Roberts[1,9]
Affiliations expand

- PMID: 37143849

- PMCID: PMC10152254

- DOI: 10.1183/23120541.00444-2022

Free PMC article

Abstract

Background: Biologics have proven efficacy for patients with severe asthma but there is lack of consensus on defining response. We systematically reviewed and appraised methodologically developed, defined and evaluated definitions of non-response and response to biologics for severe asthma.

Methods: We searched four bibliographic databases from inception to 15 March 2021. Two reviewers screened references, extracted data, and assessed methodological quality of development, measurement properties of outcome measures and definitions of response based on COnsensus-based Standards for the selection of health Measurement

INstruments (COSMIN). A modified GRADE (Grading of Recommendations Assessment, Development and Evaluation) approach and narrative synthesis were undertaken.

Results: 13 studies reported three composite outcome measures, three asthma symptoms measures, one asthma control measure and one quality of life measure. Only four measures were developed with patient input; none were composite measures. Studies utilised 17 definitions of response: 10 out of 17 (58.8%) were based on minimal clinically important difference (MCID) or minimal important difference (MID) and 16 out of 17 (94.1%) had high-quality evidence. Results were limited by poor methodology for the development process and incomplete reporting of psychometric properties. Most measures rated "very low" to "low" for quality of measurement properties and none met all quality standards.

Conclusions: This is the first review to synthesise evidence about definitions of response to biologics for severe asthma. While high-quality definitions are available, most are MCIDs or MIDs, which may be insufficient to justify continuation of biologics in terms of cost-effectiveness. There remains an unmet need for universally accepted, patient-centred, composite definitions to aid clinical decision making and comparability of responses to biologics.

Conflict of interest statement

Conflict of interests: E. Khaleva and A. Rattu declare funding for the present manuscript from the 3TR European Union Innovative Medicines Initiative 2 paid to the university. C. Brightling declares grants from GlaxoSmithKline, AstraZeneca, Novartis, Chiesi, Boehringer Ingelheim, Genentech, Roche, Sanofi, Mologic and 4DPharma, consulting fees from GlaxoSmithKline, AstraZeneca, Novartis, Chiesi, Boehringer Ingelheim, Genentech, Roche, Sanofi, Mologic, 4DPharma and Teva, and support from the 3TR project. A. Bourdin reports being an investigator for clinical trials promoted by AstraZeneca, Chieisi, GlaxoSmithKline, Boehringer Ingelheim, Novartis, Regeneron and Sanofi; having received fees for lectures, attendance of meeting and consultancy from AstraZeneca, Chieisi, GlaxoSmithKline, Boehringer Ingelheim, Novartis, Regeneron and Sanofi; having received research grants from AstraZeneca and Boehringer Ingelheim; and participation on a data safety monitoring or advisory board of AB Science. A. Bossios has received lecture fees from GlaxoSmithKline, AstraZeneca, Teva and Novartis; honoraria for advisory board meetings from GlaxoSmithKline, AstraZeneca, Teva, Novartis and Sanofi; and received support for attending meetings from AstraZeneca and Novartis, all outside the present work; reports being a member of the Steering Committee of SHARP, Secretary of Assembly 5 (Airway Diseases, Asthma, COPD and Chronic Cough) of the European Respiratory Society and Vice-chair of the Nordic Severe Asthma Network (NSAN). K.F. Chung has received honoraria for participating in advisory board meetings of GlaxoSmithKline, AstraZeneca, Roche, Novartis, Merck and Shionogi regarding treatments for asthma, COPD and chronic

cough, and has also been renumerated for speaking engagements for Novartis and AstraZeneca. R. Chaudhuri has received lecture fees from GlaxoSmithKline, AstraZeneca, Teva, Chiesi, Sanofi and Novartis; honoraria for advisory board meetings from GlaxoSmithKline, AstraZeneca, Teva, Chiesi and Novartis; sponsorship to attend international scientific meetings from Chiesi, Napp, Sanofi, Boehringer, GlaxoSmithKline and AstraZeneca, and a research grant to her Institute from AstraZeneca for a UK multicentre study. C. Coleman declares funding received to support this work by the European Lung Foundation (ELF) from the European Commission's Innovative Medicines Initiative 2 Joint Undertaking (JU) under grant agreement number 831434 (3TR), and is an employee of the ELF. R. Djukanovic declares funding from European Respiratory Society, Teva, GlaxoSmithKline, Novartis, Sanofi and Chiesi for the SHARP CRC, consulting fees for Synairgen; honorarium for a lecture from GlaxoSmithKline, participation on a data safety monitoring board or advisory board for Kymab (Cambridge) and shares in Synairgen, outside the submitted work. S-E. Dahlen declares funding from 3TR IMI Grant; consulting fees from AstraZeneca, Cayman Co., GlaxoSmithKline, Novartis, Regeneron, Sanofi and Teva; honoraria for lectures from AstraZeneca and Sanofi. A. Exley declares being a minority shareholder in GlaxoSmithKline PLC. L. Fleming declares participation in advisory boards and honoraria for lectures from Sanofi, Respiri UK, AstraZeneca, Novartis and Teva, outside the scope of this publication. All payments were made to her institution. A. Gupta received speaker and advisory board fees from GlaxoSmithKline, Novartis, AstraZeneca and Boehringer Ingelheim. A. Gupta's institution had received research grants from GlaxoSmithKline, Novartis, AstraZeneca and Boehringer Ingelheim. E. Hamelmann declares support from the German Ministry of Education and Research (BMBF) and German Asthma Net (GAN) e.V.; funding for research in severe asthma in children (CHAMP-01GL1742D) and for Severe Asthma Register. G.H. Koppelman reports receiving research grants from the Lung Foundation of the Netherlands, Ubbo Emmius Foundation, H2020 European Union, Teva, GlaxoSmithKline and Vertex, outside this work (money to institution); he reports memberships of advisory boards to GlaxoSmithKline and PURE-IMS, outside this work (money to institution). E. Melen has received consulting fees from AstraZeneca, Chiesi, Novartis and Sanofi outside the submitted work. V. Mahler has no conflict of interest but declares that the views expressed in this review are the personal views of the author and may not be understood or quoted as being made on behalf of or reflecting the position of the respective national competent authority, the European Medicines Agency, or one of its committees or working parties. F. Singer reports being an investigator for clinical trials promoted by Vertex and having received fees for lectures from Vertex and Novartis, outside the submitted work. C. Porsbjerg declares grants, consulting fees and honoraria from AstraZeneca, GlaxoSmithKline, Novartis, Teva, Sanofi, Chiesi and ALK (paid to institution and personal honoraria); participation in the advisory board for AstraZeneca, Novartis, Teva, Sanofi and ALK, outside the submitted work. V. Ramiconi reports grants paid to EFA from Pfizer, Novartis, AstraZeneca, Sanofi, Chiesi Farmaceutici, Regeneron, DBV Technologies, MSD, GlaxoSmithKline, Aimmune, LeoPharma, AbbVie, Boehringer Ingelheim, OM Pharma and Roche; payment for expert testimony from Novartis Global Respiratory Patient Council 2021 and Novartis EPIS Steering Committee to EFA. G. Roberts

declares EU IMI funding and consulting fees from AstraZeneca paid to his institution. No other author has any conflict of interest to declare.

- 84 references
- 1 figure

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Proceed to details
Cite

Share
38
ERJ Open Res
-
-
-
. 2023 May 2;9(3):00586-2022.
doi: 10.1183/23120541.00586-2022. eCollection 2023 Jul.

Characteristics of severe asthma patients on biologics: a real-life European registry study

Stefania Principe[1,2], Levi B Richards[1], Simone Hashimoto[1], Johannes Anthon Kroes[3], Job J M H Van Bragt[1], Susanne J Vijverberg[1], Jacob K Sont[4], Nicola Scichilone[2], Kristina Bieksiene[5], Anneke Ten Brinke[6], Zsuzsanna Csoma[7], Barbro Dahlén[8], Bilun Gemicioglu[9], Ineta Grisle[10], Piotr Kuna[11], Zorica Lazic[12], Florin Mihaltan[13], Sanja Popović-Grle[14], Sabina Škrgat[15], Alessandro Marcon[16], Marco Caminati[17], Ratko Djukanovic[18], Celeste Porsbjerg[19], Anke-Hilse Maitland Van Der Zee[1,20,21]
Affiliations expand

- PMID: 37143845

- PMCID: PMC10152256

- DOI: 10.1183/23120541.00586-2022

Free PMC article

Abstract

Background: The use of anti-interleukin-5 (IL5) for severe asthma is based on criteria from randomised controlled trials (RCTs), but in real-life patients might not fulfil the eligibility criteria but may benefit from biologics. We aimed to characterise patients starting anti-IL5(R) in Europe and evaluate the discrepancies between initiation of anti-IL5(R) in real life and in RCTs.

Materials and methods: We performed a cross-sectional analysis with data from the severe asthma patients at the start of anti-IL5(R) in the Severe Heterogeneous Asthma Research collaboration Patient-centred (SHARP Central) registry. We compared the baseline characteristics of the patients starting anti-IL5(R) from 11 European countries within SHARP with the baseline characteristics of the severe asthma patients from 10 RCTs (four for mepolizumab, three for benralizumab and three for reslizumab). Patients were evaluated following eligibility criteria from the RCTs of anti-IL5 therapies.

Results: Patients starting anti-IL5(R) in Europe (n=1231) differed in terms of smoking history, clinical characteristics and medication use. The characteristics of severe asthma patients in the SHARP registry differed from the characteristics of patients in RCTs. Only 327 (26.56%) patients fulfilled eligibility criteria of all the RCTs; 24 patients were eligible for mepolizumab, 100 for benralizumab and 52 reslizumab. The main characteristics of ineligibility were: ≥10 pack-years, respiratory diseases other than asthma, Asthma Control Questionnaire score ≤1.5 and low-dose inhaled corticosteroids.

Conclusion: A large proportion of patients in the SHARP registry would not have been eligible for anti-IL5(R) treatment in RCTs, demonstrating the importance of real-life cohorts in describing the efficacy of biologics in a broader population of patients with severe asthma.

Conflict of interest statement

Conflict of interest: S. Principe is an employee of the University of Palermo with co-EU research funds EU-REACT FESR o FSE, PON Ricerca e Innovazione 2014–2020 - DM 1062/2021. Conflict of interest: A. Ten Brinke reports grants from AstraZeneca, GSK and TEVA, fees for advisory boards and lectures from AstraZeneca, GSK, Novartis, TEVA and Sanofi Genzyme. Conflict of interest: I. Grisle declares honoraria for lectures from AZ, Novartis, GSK, Berlin Chemie, Boehringer Ingelheim and Norameda. Conflict of interest: P.

Kuna declares honoraria for lectures/presentations from AstraZeneca, GSK, Boehringer Ingelheim, Berlin Chemie, Menarini, FAES, Adamed, Polpharma, Glenmark, Novartis and Teva, and support for attending meetings from AstraZeneca, Berlin Chemie and Menarini. Conflict of interest: S. Popović-Grle declares consulting fees from AZ, GSK, Novartis, Pliva Teva, Sanofi and ALK, and honoraria for lectures from AZ, GSK, Novartis, Pliva TEVA, Sanofi and ALK. Conflict of interest: S. Škgrat declares, in the past 36 months, honoraria for lectures and educational events from AstraZeneca (AZ), Pliva Teva, Berlin Chemie, Chiesi and Medis, and participation on advisory boards for AZ and Berlin Chemie. Conflict of interest: C. Porsbjerg declares, in the past 36 months, grants from AZ, GSK, Novartis, TEVA, Sanofi, Chiesi and ALK, consulting fees from AZ, GSK, Novartis, TEVA, Sanofi, Chiesi and ALK, honoraria for lectures from AZ, GSK, Novartis, TEVA, Sanofi, Chiesi and ALK, participation for advisory boards AZ, GSK, Novartis, TEVA, Sanofi, Chiesi and ALK. Conflict of interest: All the other authors declare that they have no conflicts of interest.

Review

Eur Respir Rev

. 2023 May 3;32(168):230009.
doi: 10.1183/16000617.0009-2023. Print 2023 Jun 30.

Identifying risk factors for COPD and adult-onset asthma: an umbrella review

Judith C S Holtjer[1], Lizan D Bloemsma[2 3 4], Rosanne J H C G Beijers[5], Merel E B Cornelissen[2 3 4], Bart Hilvering[2], Laura Houweling[1 2], Roel C H Vermeulen[1 6], George S Downward[1 6], Anke-Hilse Maitland-Van der Zee[7 3 4]; P4O2 consortium
Affiliations expand

- PMID: 37137510

- PMCID: PMC10155046

- DOI: 10.1183/16000617.0009-2023

Free PMC article

Abstract

Background: COPD and adult-onset asthma (AOA) are the most common noncommunicable respiratory diseases. To improve early identification and prevention, an overview of risk factors is needed. We therefore aimed to systematically summarise the nongenetic (exposome) risk factors for AOA and COPD. Additionally, we aimed to compare the risk factors for COPD and AOA.

Methods: In this umbrella review, we searched PubMed for articles from inception until 1 February 2023 and screened the references of relevant articles. We included systematic reviews and meta-analyses of observational epidemiological studies in humans that assessed a minimum of one lifestyle or environmental risk factor for AOA or COPD.

Results: In total, 75 reviews were included, of which 45 focused on risk factors for COPD, 28 on AOA and two examined both. For asthma, 43 different risk factors were identified while 45 were identified for COPD. For AOA, smoking, a high body mass index (BMI), wood dust exposure and residential chemical exposures, such as formaldehyde exposure or exposure to volatile organic compounds, were amongst the risk factors found. For COPD, smoking, ambient air pollution including nitrogen dioxide, a low BMI, indoor biomass burning, childhood asthma, occupational dust exposure and diet were amongst the risk factors found.

Conclusions: Many different factors for COPD and asthma have been found, highlighting the differences and similarities. The results of this systematic review can be used to target and identify people at high risk for COPD or AOA.

Conflict of interest statement

Provenance: Submitted article, peer reviewed. Conflict of interest: A.H. Maitland-Van der Zee is the PI of P4O2 (Precision Medicine for more Oxygen) public–private partnership sponsored by Health Holland involving many private partners who contribute in cash

and/or in kind. Partners in the Precision Medicine for more Oxygen (P4O2) consortium are the Amsterdam UMC, Leiden University Medical Center, Maastricht UMC+, Maastricht University, UMC Groningen, UMC Utrecht, Utrecht University, TNO, Aparito, Boehringer Ingelheim, Breathomix, Clear, Danone Nutricia Research, Fluidda, MonitAir, Ncardia, Ortec Logiqcare, Philips, Proefdiervrij, Quantib-U, RespiQ, Roche, Smartfish, SODAQ, Thirona, TopMD, Lung Alliance Netherlands (LAN) and the Lung Foundation Netherlands (Longfonds). The consortium is additionally funded by the PPP Allowance made available by Health Holland, Top Sector Life Sciences & Health (LSHM20104; LSHM20068), to stimulate public-private partnerships and by Novartis. A.H. Maitland-Van der Zee has received grants from Boehringer Ingelheim, Vertex Innovation Award, Dutch Lung Foundation, Stichting Asthma Bestrijding, and Innovative Medicine Initiative (IMI). A.H. Maitland-Van der Zee has received consulting fees from AstraZeneca and Boehringer Ingelheim. A.H. Maitland-Van der Zee has received GSK honarium for a lecture. A.H. Maitland-Van der Zee is the chair of DSMB SOS BPD study and advisory board member of the CHAMP study. A.H. Maitland-Van der Zee is the president of the federation of innovative drug research in the Netherlands (FIGON) and president of the European Association of systems medicine (EASYM). The remaining authors have no conflicts to declare.

- 98 references
- 1 figure

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

Free full text at ersjournals.com

Proceed to details

Cite

Share

40

Pediatr Pulmonol

. 2023 Jul;58(7):2166-2169.
doi: 10.1002/ppul.26441. Epub 2023 May 3.

Which children are still dying from asthma? A 13 year review of pediatric asthma deaths in British Columbia, Canada

Victoria E Cook[1], Michael Seear[2], Bruce Carleton[3,4], Connie L Yang[1,3]
Affiliations expand

- PMID: 37133221

- DOI: 10.1002/ppul.26441

No abstract available

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grant supportexpand

FULL TEXT LINKS

Allergy
.
. 2023 Jul;78(7):1777-1793.
doi: 10.1111/all.15755. Epub 2023 May 9.

The One Health approach for allergic diseases and asthma

Marek Jutel[1,2], Giselle S Mosnaim[3], Jonathan A Bernstein[4], Stefano Del Giacco[5], David A Khan[6], Kari C Nadeau[7], Isabella Pali-Schöll[8,9], Maria J Torres[10], Magdalena Zemelka-Wiacek[1], Ioana Agache[11]
Affiliations expand

- PMID: 37119496

- DOI: 10.1111/all.15755

Abstract

The One Health approach is a collaborative and interdisciplinary strategy with focal point on human, animal, and environmental health interconnections. One Health can support the advanced management of allergic diseases and asthma, as complex, multifactorial diseases driven by interactions between the resilience response to the exposome. According to the One Health concept allergic diseases and asthma arising from exposures to a wide range of allergens, infectious agents and irritants (such as pollutants) occurring indoors and outdoors can be heavily influenced by environmental health (air, water, and soil quality) intermingled with animal health. These are currently heavily impacted by climate change, land use, urbanization, migration, overpopulation, and many more. Thus, a coordinated response to address the underlying factors that contribute to the development of allergic diseases and asthma needs to focus on the environment, human, and animal health altogether. Collaborative efforts across multiple sectors, including public health, veterinary medicine, environmental science, and community engagement are thus needed. A wide range of activities, including monitoring and surveillance of environmental and health data, targeted interventions to reduce exposures to allergens and irritants, and research on the underlying mechanisms that drive the development of allergic diseases and asthma are needed to move the field forward. In this consensus document elaborated by the European Academy of Allergy and Clinical Immunology (EAACI) and American Academy of Allergy, Asthma, and Immunology (AAAAI) under the practical allergy (PRACTALL) series, we provide insights into the One Heath approach aiming to provide a framework for addressing the complex and multifactorial nature of allergic diseases and asthma.

Keywords: allergic diseases; asthma; biodiversity; climate change; exposome.

- 125 references

Review

Curr Opin Pulm Med

. 2023 Jul 1;29(4):270-276.
doi: 10.1097/MCP.0000000000000963. Epub 2023 Apr 27.

Home monitoring in asthma: towards digital twins

David Drummond[1], Jolt Roukema[2], Mariëlle Pijnenburg[3]
Affiliations expand

- PMID: 37102597

- DOI: 10.1097/MCP.0000000000000963

Abstract

Purpose of review: We highlight the recent advances in home monitoring of patients with asthma, and show that these advances converge towards the implementation of digital twin systems.

Recent findings: Connected devices for asthma are increasingly numerous, reliable and effective: new electronic monitoring devices extend to nebulizers and spacers, are able to assess the quality of the inhalation technique, and to identify asthma attack triggers when they include a geolocation function; environmental data can be acquired from databases and refined by wearable air quality sensors; smartwatches are better validated. Connected devices are increasingly integrated into global monitoring systems. At the same time, machine learning techniques open up the possibility of using the large amount of data collected to obtain a holistic assessment of asthma patients, and social robots and virtual assistants can help patients in the daily management of their asthma.

Summary: Advances in the internet of things, machine learning techniques and digital patient support tools for asthma are paving the way for a new era of research on digital twins in asthma.

- 46 references

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

43

Review

Am J Med Sci

-
-
-

. 2023 Jul;366(1):22-26.
doi: 10.1016/j.amjms.2023.04.012. Epub 2023 Apr 18.

Efficacy and safety of intravenous leukotriene receptor antagonists in acute asthma

Shaya Yaanallah Al Qahtani[1]
Affiliations expand

- PMID: 37080430

- DOI: 10.1016/j.amjms.2023.04.012

Abstract

The incidence of bronchial asthma has increased substantially since recent decades in both children and adults. Moreover, the number of patients presenting with asthma exacerbation to the emergency department has also increased in several countries. Leukotrienes are inflammatory mediators that play an important role in bronchial asthma exacerbation. Leukotriene receptor antagonists reduce asthma exacerbation in chronic asthma; moreover, the current guidelines for asthma management recommend the use of oral leukotriene receptor antagonists for asthma control and reduce further exacerbation. However, data on the use of intravenous leukotriene receptor antagonists during acute asthma exacerbation are scarce. Nevertheless, currently available data revealed a trend of significant improvement of acute asthma and rapid reversal of airflow obstruction when administered during an acute asthma attack. This review aims to summarize currently available data on the use of intravenous leukotriene receptor antagonists in adult patients with acute asthma exacerbation.

Keywords: Acute asthma; Asthma exacerbation; Intravenous montelukast; Leukotriene receptor antagonist; Randomized trial.

Review

Eur Respir Rev

. 2023 Apr 19;32(168):220193.

doi: 10.1183/16000617.0193-2022. Print 2023 Jun 30.

Cytokine-targeted therapies for asthma and COPD

Florence Schleich[1,2], Nicolas Bougard[3], Catherine Moermans[2], Mare Sabbe[3], Renaud Louis[3,2]
Affiliations expand

- PMID: 37076177

- PMCID: PMC10113955

- DOI: 10.1183/16000617.0193-2022

Free PMC article

Abstract

Asthma affects over 300 million people worldwide and its prevalence is increasing. COPD is the third leading cause of death globally. Asthma and COPD are complex inflammatory diseases of the airways in which impaired host defences lead to increased susceptibility to pathogens, pollutants and allergens. There is a constant interplay between host and the environment. Environmental exposures can alter the lung microbiome and influence the development of sensitisation by disrupting normal immunoregulation. The underlying airway inflammation in severe asthma is heterogeneous, with upregulation of type 2 cytokines in most cases but increased neutrophilic inflammation and activated T-helper 17 mediated immunity in others. COPD may also comprise several different phentoypes that are driven by different molecular mechanisms or endotypes. This disease heterogeneity is affected by comorbidities, treatments and environmental exposures. Recent intervention trials have shed light on the pathways beyond type 2 inflammation that can lead to beneficial outcomes *versus* potentially deleterious effects. We have made a great deal of progress over the last 10 years in terms of immunology and the pathophysiology of asthma and this has led to the development of novel treatments and major improvements in severe asthma outcomes. In COPD, however, no targeted treatments have demonstrated great improvements. This article reviews the mechanism of action and efficacy of the available biologics in asthma and COPD.

Conflict of interest statement

Conflict of interest: F. Schleich has received grants or contracts from GSK, AstraZeneca and Chiesi; payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from GSK, AstraZeneca, Chiesi and TEVA; and has participated on a Data Safety Monitoring Board or Advisory Board for GSK and AstraZeneca. Conflict of interest: N. Bougard has nothing to disclose. Conflict of interest: C. Moermans has nothing to disclose. Conflict of interest: M. Sabbe has nothing to disclose. Conflict of interest: R. Louis has received grants or contracts from GSK, AstraZeneca and Chiesi; payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from GSK, AstraZeneca, Chiesi and TEVA; and has participated on a Data Safety Monitoring Board or Advisory Board for GSK and AstraZeneca.

Review

Eur Respir Rev

. 2023 Apr 19;32(168):220184.

doi: 10.1183/16000617.0184-2022. Print 2023 Jun 30.

Noncoding RNAs in asthmatic airway smooth muscle cells

Bo Xiao[1 2 3], Liangxian Li[4 3], Dong Yao[2 5 3], Biwen Mo[6 5 7]

Affiliations expand

- PMID: 37076176
- PMCID: PMC10113956
- DOI: 10.1183/16000617.0184-2022

Free PMC article

Abstract

Asthma is a complex and heterogeneous airway disease caused by genetic, environmental and epigenetic factors treated with hormones and biologics. Irreversible pathological changes to airway smooth muscle cells (ASMCs) such as hyperplasia and hypertrophy can occur in asthmatic patients. Determining the mechanisms responsible is vital for preventing such changes. In recent years, noncoding RNAs (ncRNAs), especially microRNAs, long noncoding RNAs and circular RNAs, have been found to be associated with abnormalities of the ASMCs. This review highlights recent ncRNA research into ASMC pathologies. We present a schematic that illustrates the role of ncRNAs in pathophysiological changes to ASMCs that may be useful in future research in diagnostic and treatment strategies for patients with asthma.

Conflict of interest statement

Conflicts of interest: B. Xiao reports no conflicts of interest. Conflicts of interest: L. Li reports no conflicts of interest. Conflicts of interest: D. Yao reports no conflicts of interest. Conflicts of interest: B. Mo reports no conflicts of interest.

- 131 references
- 2 figures

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

Free full text at ersjournals.com

Proceed to details

Pediatr Pulmonol
. 2023 Jul;58(7):1896-1903.
doi: 10.1002/ppul.26409. Epub 2023 Apr 17.

Spirometry and respiratory oscillometry: Feasibility and concordance in schoolchildren with asthma

Clara Domínguez-Martín[1,2], Alfredo Cano[1,2], Nuria Díez-Monge[1,2], Ana María Alonso-Rubio[2,3], Isabel Pérez-García[2,3], María Teresa Arroyo-Romo[3], Irene Casares-Alonso[3], Ana María Barbero-Rodríguez[2,3], Reyes Grande-Alvarez[3], María Teresa Martínez-Rivera[3], Mónica Sanz-Fernández[3]
Affiliations expand

- PMID: 37067397

- DOI: 10.1002/ppul.26409

Abstract

Objective: The purpose of this study was to describe the feasibility of respiratory oscillometry (RO) in schoolchildren with asthma, and the concordance of its results with those of spirometry, to determine its clinical usefulness.

Methods: RO and spirometry were performed in 154 children (6 to 14-year-old) with asthma, following strict quality criteria for the tests. Their feasibility (probability of valid test, time of execution, number of maneuvers needed to achieve a valid test, and perceived difficulty) was compared. The factors that influence feasibility were analyzed with multivariate methods. FEV1, FEV1/FVC, FVC and FEF25-75 for spirometry, and R5, AX and R5-19 for RO, were converted into z-scores and their concordance was investigated

through intraclass correlation coefficients (ICC) and kappa indices for normal/abnormal values.

Results: There were no differences in the probability of obtaining a valid RO or spirometry (83.1% vs. 81.8%, p = 0.868). RO required a lower number of maneuvers [mean (SD) 4.2 (1.8) versus 6.0 (1.6), p < 0.001] and less execution time [5.1 (2.7) versus 7.6 (2.4) minutes, p < 0.001], and patients considered it less difficult. Age increased the probability of obtaining valid RO and spirometry. The concordance of results between RO and spirometry was low, and only between zFEV1 and zAX could it be considered moderate (ICC = 0.412, kappa = 0.427).

Conclusion: RO and spirometry are feasible in children with asthma. RO has some practical advantages, but the concordance of its results with spirometry is low.

Keywords: asthma; child; cross-sectional studies; oscillometry; spirometry.

- 34 references

SUPPLEMENTARY INFO

MeSH terms, Grant supportexpand

FULL TEXT LINKS

Multicenter Study

Scand J Med Sci Sports
.
. 2023 Jul;33(7):1221-1230.
doi: 10.1111/sms.14367. Epub 2023 Apr 13.

Fractional exhaled nitric oxide in the assessment of exercise-induced

bronchoconstriction: A multicenter retrospective analysis of UK-based athletes

John Dickinson[1], William Gowers[1], Savannah Sturridge[1], Neil Williams[2], Pascale Kippelen[3], Andrew Simpson[4], Anna Jackson[5], James H Hull[6,7], Oliver J Price[8,9,10]
Affiliations expand

- PMID: 37051807

- DOI: 10.1111/sms.14367

Abstract

Introduction: Exercise-induced bronchoconstriction (EIB) is not only highly prevalent in people with asthma, but can also occur independently, particularly in athletes. Fractional exhaled nitric oxide (FeNO) is an indirect biomarker of type 2 airway inflammation that has an established role in the assessment and management of asthma. The aim was to evaluate the value of FeNO in the assessment of EIB in athletes.

Method: Multicenter retrospective analysis. In total, 488 athletes (male: 76%) performed baseline FeNO, and spirometry pre- and post-indirect bronchial provocation via eucapnic voluntary hyperpnea (EVH). Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were calculated for established FeNO thresholds-that is, intermediate (≥25 ppb) and high FeNO (≥40 ppb and ≥ 50 ppb)-and were evaluated against objective evidence of EIB (≥10% fall in FEV_1). The diagnostic accuracy of FeNO was calculated using receiver operating characteristics area under the curve (ROC-AUC).

Results: Thirty-nine percent of the athletes had a post-EVH fall in FEV_1 consistent with EIB. FeNO values ≥25 ppb, ≥40 ppb, and ≥ 50 ppb were observed in 42%, 23%, and 17% of the cohort, respectively. The sensitivity of FeNO ≥25 ppb was 55%, which decreased to 37% and 27% at ≥40 ppb and ≥ 50 ppb, respectively. The specificity of FeNO ≥25 ppb, ≥40 ppb, and ≥ 50 ppb was 66%, 86%, and 89%, respectively. The ROC-AUC for FeNO was 0.656.

Conclusions: FeNO ≥40 ppb provides good specificity, that is, the ability to rule-in a diagnosis of EIB. However, due to the poor sensitivity and predictive values, FeNO should not be employed as a replacement for indirect bronchial provocation in athletes.

Keywords: airway inflammation; asthma; diagnosis; eucapnic voluntary hyperpnea; exercise; phenotype.

- 46 references

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

WILEY Full Text Article
Proceed to details
Cite

Share
48
Epidemiology
-
-
-

. 2023 Jul 1;34(4):554-564.
doi: 10.1097/EDE.0000000000001613. Epub 2023 Apr 11.

Role of Air Pollution in the Development of Asthma Among Children with a History of Bronchiolitis in Infancy

Logan C Dearborn[1], Marnie F Hazlehurst[1], Christine T Loftus[1], Adam A Szpiro[2], Kecia N Carroll[3,4], Paul E Moore[5], Margaret A Adgent[6], Emily S Barrett[7,8], Ruby Hn Nguyen[9], Sheela Sathyanarayana[1,10,11], Kaja Z LeWinn[12], Nicole R Bush[13], Joel D Kaufman[1,14,15], Catherine J Karr[1,10,14]
Affiliations expand

- PMID: 37042935

- DOI: 10.1097/EDE.0000000000001613

Abstract

Background: Infants experiencing bronchiolitis are at increased risk for asthma, but few studies have identified modifiable risk factors. We assessed whether early life air pollution influenced child asthma and wheeze at age 4-6 years among children with a history of bronchiolitis in the first postnatal year.

Methods: Children with caregiver-reported physician-diagnosed bronchiolitis were drawn from ECHO-PATHWAYS, a pooled longitudinal cohort from six US cities. We estimated their air pollution exposure from age 1 to 3 years from validated spatiotemporal models of fine particulate matter ($PM_{2.5}$), nitrogen dioxide (NO_2), and ozone (O_3). Caregivers reported children's current wheeze and asthma at age 4-6 years. We used modified Poisson regression to estimate relative risks (RR) and 95% confidence intervals (CI), adjusting for child, maternal, and home environmental factors. We assessed effect modification by child sex and maternal history of asthma with interaction models.

Results: A total of 224 children had caregiver-reported bronchiolitis. Median (interquartile range) 2-year pollutant concentrations were 9.3 (7.8-9.9) μg/m 3 $PM_{2.5}$, 8.5 (6.4-9.9) ppb NO_2, and 26.6 (25.6-27.7) ppb O_3. RRs (CI) for current wheeze per 2-ppb higher O_3 were 1.3 (1.0-1.7) and 1.4 (1.1-1.8) for asthma. NO_2 was inversely associated with wheeze and asthma whereas associations with $PM_{2.5}$ were null. We observed interactions between NO_2 and $PM_{2.5}$ and maternal history of asthma, with lower risks observed among children with a maternal history of asthma.

Conclusion: Our results are consistent with the hypothesis that exposure to modest postnatal O_3 concentrations increases the risk of asthma and wheeze among the vulnerable subpopulation of infants experiencing bronchiolitis.

Conflict of interest statement

The authors report no conflicts of interest.

- 53 references

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

Review

Allergy
.
.
.
. 2023 Jul;78(7):1758-1776.
doi: 10.1111/all.15740.

Patient-centered digital biomarkers for allergic respiratory diseases and asthma: The ARIA-EAACI approach - ARIA-EAACI Task Force Report

Jean Bousquet[1,2,3], Mohamed H Shamji[4,5], Josep M Anto[6,7,8], Holger J Schünemann[9], G Walter Canonica[10,11], Marek Jutel[12,13], Stefano Del Giacco[14], Torsten Zuberbier[1,3], Oliver Pfaar[15], Joao A Fonseca[16,17], Bernardo Sousa-Pinto[16,17], Ludger Klimek[18,19], Wienczyslawa Czarlewski[20,21], Anna Bedbrook[21,22], Rita Amaral[16,17], Ignacio J Ansotegui[23], Sinthia Bosnic-Anticevich[24,25,26], Fulvio Braido[27,28], Claudia Chaves Loureiro[29], Bilun Gemicioglu[30], Tari Haahtela[31], Marek Kulus[32], Piotr Kuna[33], Maciej Kupczyk[33], Paolo M Matricardi[34], Frederico S Regateiro[35,36,37], Boleslaw Samolinski[38], Mikhail Sofiev[39], Sanna Toppila-Salmi[31], Arunas Valiulis[40], Maria Teresa Ventura[41,42], Cristina Barbara[43], Karl C Bergmann[1,3], Michael Bewick[44], Hubert Blain[45], Matteo Bonini[4,46,47], Louis-Philippe Boulet[48], Rodolphe Bourret[49], Guy Brusselle[50], Luisa Brussino[51,52], Roland Buhl[53], Victoria Cardona[54,55], Thomas Casale[56], Lorenzo Cecchi[57], Denis Charpin[58], Ivan Cherrez-Ojeda[59,60], Derek K Chu[9], Cemal Cingi[61], Elisio M Costa[62], Alvaro A Cruz[63], Philippe Devillier[64], Stephanie Dramburg[65], Wytske J Fokkens[66], Maia Gotua[67], Enrico Heffler[10,11], Zhanat Ispayeva[68], Juan Carlos Ivancevich[69], Guy Joos[50], Igor Kaidashev[70], Helga Kraxner[71], Violeta Kvedariene[72,73], Désirée E Larenas-Linnemann[74], Daniel Laune[75], Olga Lourenço[76], Renaud Louis[77,78], Mika Makela[31], Michael Makris[79], Marcus Maurer[1,3], Erik Melén[80,81], Yann Micheli[75], Mario Morais-Almeida[82], Joaquim Mullol[83,84], Marek Niedoszytko[85], Robyn O'Hehir[86], Yoshitaka Okamoto[87,88], Heidi Olze[89,90], Nikolaos G Papadopoulos[91], Alberto Papi[92], Vincenzo Patella[93,94,95], Benoit Pétré[96], Nhân Pham-Thi[97,98,99], Francesca Puggioni[100], Santiago Quirce[101], Nicolas Roche[102], Philip W Rouadi[103,104], Ana Sá-Sousa[16,17], Hironori

Sagara[105], Joaquin Sastre[106], Nicola Scichilone[107], Aziz Sheikh[108], Milan Sova[109], Charlotte Suppli Ulrik[110,111], Luis Taborda-Barata[112,113], Ana Todo-Bom[114], Maria J Torres[115], Ioanna Tsiligianni[116,117], Omar S Usmani[4,118], Erkka Valovirta[119], Tuula Vasankari[120,121], Rafael José Vieira[16,17], Dana Wallace[122], Susan Waserman[123], Mihaela Zidarn[124,125], Arzu Yorgancioglu[126], Luo Zhang[127], Tomas Chivato[128], Markus Ollert[129,130]
Affiliations expand

- PMID: 37042071

- DOI: 10.1111/all.15740

Abstract

Biomarkers for the diagnosis, treatment and follow-up of patients with rhinitis and/or asthma are urgently needed. Although some biologic biomarkers exist in specialist care for asthma, they cannot be largely used in primary care. There are no validated biomarkers in rhinitis or allergen immunotherapy (AIT) that can be used in clinical practice. The digital transformation of health and health care (including mHealth) places the patient at the center of the health system and is likely to optimize the practice of allergy. Allergic Rhinitis and its Impact on Asthma (ARIA) and EAACI (European Academy of Allergy and Clinical Immunology) developed a Task Force aimed at proposing patient-reported outcome measures (PROMs) as digital biomarkers that can be easily used for different purposes in rhinitis and asthma. It first defined control digital biomarkers that should make a bridge between clinical practice, randomized controlled trials, observational real-life studies and allergen challenges. Using the MASK-air app as a model, a daily electronic combined symptom-medication score for allergic diseases (CSMS) or for asthma (e-DASTHMA), combined with a monthly control questionnaire, was embedded in a strategy similar to the diabetes approach for disease control. To mimic real-life, it secondly proposed quality-of-life digital biomarkers including daily EQ-5D visual analogue scales and the bi-weekly RhinAsthma Patient Perspective (RAAP). The potential implications for the management of allergic respiratory diseases were proposed.

Keywords: ARIA; EAACI; apps; digital health; rhinitis.

- 108 references

SUPPLEMENTARY INFO

Publication typesexpand

Appl Health Econ Health Policy
.
. 2023 Jul;21(4):547-558.
doi: 10.1007/s40258-023-00802-y. Epub 2023 Apr 11.

How Much Should be Invested in Lung Care Across the WHO European Region? Applying a Monetary Value to Disability-Adjusted Life-Years Within the International Respiratory Coalition's Lung Facts

Matthew Franklin[1], Colin Angus[2], Tobias Welte[3], Guy Joos[4]
Affiliations expand

- PMID: 37039953
- PMCID: PMC10232602
- DOI: 10.1007/s40258-023-00802-y

Free PMC article

Abstract

Objectives: The International Respiratory Coalition's Lung Facts web resource provides the latest data on a range of lung conditions covering the World Health Organization's European Region, informed by the Global Burden of Disease studies: https://international-respiratory-coalition.org/lung-facts/ . Within Lung Facts, disability-adjusted life-years (DALYs) are monetised based on gross domestic product (GDP) per capita. We describe the conceptual and empirical basis for using monetised DALYs to inform negotiations with policymakers to invest in lung care across the World Health Organization European region.

Methods: We reflect on the existing debate and research evidence regarding the X value in an X*GDP per capita framework to monetise DALYs, with a focus on if 1*GDP per capita is conceptually and practically appropriate. Using an asthma case study, Global Burden of Disease study 2019 DALY estimates per country are presented. Gross domestic product per capita are converted to international dollars using purchasing power parity (Int$2019).

Results: Using 1*GDP per capita, the estimated monetised asthma DALY burden, for example, in Kyrgyzstan or Germany is: across the whole population, $44,860,483 or $9,264,767,882, respectively; per 100,000 people, $731,600 or $10,208,317, respectively.

Conclusions: Our indicative monetised DALY estimates can enable informed discussions with policy and decision makers, to guide financial investment in alleviating the burden of lung conditions. We suggest 1*GDP per capita as a benchmarked value forms a starting point for negotiation with policymakers for investing in lung care, by scaling the estimated lung condition DALY burden to the resource available in each country to tackle the burden.

Conflict of interest statement

Matthew Franklin and Colin Angus report receiving funding from the International Respiratory Coalition for the writing of the manuscript including the associated analysis. Tobias Welte and Guy Joos have no conflicts of interest that are directly relevant to the content of this article. No other disclosures were reported.

- 55 references
- 1 figure

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

Proceed to details

Published Erratum

Eur Respir Rev
.
. 2023 Apr 5;32(168):225144.
doi: 10.1183/16000617.5144-2022. Print 2023 Jun 30.

"Targeting interleukin-33 and thymic stromal lymphopoietin pathways for novel pulmonary therapeutics in asthma and COPD". Ariel A. Calderon, Colin Dimond, David F. Choy, Rajita Pappu, Michele A. Grimbaldeston, Divya Mohan and Kian Fan Chung. *Eur Respir Rev* 2023; 32: 220144

No authors listed

- PMID: 37019459
- PMCID: PMC10074163
- DOI: 10.1183/16000617.5144-2022

Free PMC article

No abstract available

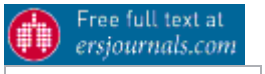
Erratum for

- Targeting interleukin-33 and thymic stromal lymphopoietin pathways for novel pulmonary therapeutics in asthma and COPD.
  Calderon AA, Dimond C, Choy DF, Pappu R, Grimbaldeston MA, Mohan D, Chung KF.Eur Respir Rev. 2023 Jan 25;32(167):220144. doi: 10.1183/16000617.0144-2022. Print 2023 Mar 31.PMID: 36697211 **Free PMC article.** Review.

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS



Proceed to details

Cite

Share

52

Am J Respir Cell Mol Biol

-
-
-

. 2023 Jul;69(1):13-21.
doi: 10.1165/rcmb.2022-0353MA.

Multiresolution 3D Optical Mapping of Immune Cell Infiltrates in Mouse Asthmatic Lung

Yi-Chien Wu[1], Hyung-Geun Moon[2], Vytautas P Bindokas[3], Evan H Phillips[1], Gye Young Park[2,4], Steve Seung-Young Lee[1]

Affiliations expand

- PMID: 37017484

- DOI: 10.1165/rcmb.2022-0353MA

Abstract

Asthma is a chronic inflammatory airway disease driven by various infiltrating immune cell types into the lung. Optical microscopy has been used to study immune infiltrates in asthmatic lungs. Confocal laser scanning microscopy (CLSM) identifies the phenotypes and locations of individual immune cells in lung tissue sections by employing high-magnification objectives and multiplex immunofluorescence staining. In contrast, light-sheet fluorescence microscopy (LSFM) can visualize the macroscopic and mesoscopic architecture of whole-mount lung tissues in three dimensions (3D) by adopting an optical tissue-clearing method. Despite each microscopy method producing image data with unique resolution from a tissue sample, CLSM and LSFM have not been applied together because of different tissue-preparation procedures. Here, we introduce a new approach combining LSFM and CLSM into a sequential imaging pipeline. We built a new optical tissue clearing workflow in which the immersion clearing agent can be switched from an organic solvent to an aqueous sugar solution for sequential 3D LSFM and CLSM of mouse lungs. This sequential combination microscopy offered quantitative 3D spatial analyses of the distribution of immune infiltrates in the same mouse asthmatic lung tissue at the organ, tissue, and cell levels. These results show that our method facilitates multiresolution 3D fluorescence microscopy as a new imaging approach providing comprehensive spatial information for a better understanding of inflammatory lung diseases.

Keywords: asthma; immune infiltrates; multi-resolution 3D microscopy; optical tissue clearing.

Am J Respir Crit Care Med

. 2023 Jul 1;208(1):13-24.

doi: 10.1164/rccm.202210-2005OC.

Efficacy of Tezepelumab in Severe, Uncontrolled Asthma: Pooled Analysis of the PATHWAY and NAVIGATOR Clinical Trials

Jonathan Corren[1], Andrew Menzies-Gow[2,3], Geoffrey Chupp[4], Elliot Israel[5], Stephanie Korn[6,7], Bill Cook[8], Christopher S Ambrose[8], Åsa Hellqvist[9], Stephanie L Roseti[10], Nestor A Molfino[11], Jean-Pierre Llanos[12], Neil Martin[3,13], Karin Bowen[14], Janet M Griffiths[15], Jane R Parnes[16], Gene Colice[10]
Affiliations expand

- PMID: 37015033

- DOI: 10.1164/rccm.202210-2005OC

Abstract

Rationale: Tezepelumab reduced exacerbations in patients with severe, uncontrolled asthma across a range of baseline blood eosinophil counts and fractional exhaled nitric oxide levels, and irrespective of allergy status, in the phase 2b PATHWAY (Study to Evaluate the Efficacy and Safety of MEDI9929 [AMG 157] in Adult Subjects With Inadequately Controlled, Severe Asthma; NCT02054130) and phase 3 NAVIGATOR (Study to Evaluate Tezepelumab in Adults & Adolescents With Severe Uncontrolled Asthma; NCT03347279) trials. **Objectives:** To examine the efficacy and safety of tezepelumab in additional clinically relevant subgroups using pooled data from PATHWAY and NAVIGATOR. **Methods:** PATHWAY and NAVIGATOR were randomized, double-blind, placebo-controlled trials with similar designs. This pooled analysis included patients with severe, uncontrolled asthma (PATHWAY, 18-75 years old; NAVIGATOR, 12-80 years old) who received tezepelumab 210 mg or placebo subcutaneously every 4 weeks for 52 weeks. The annualized asthma exacerbation rate over 52 weeks and secondary outcomes were calculated in the overall population and in subgroups defined by inflammatory biomarker levels or clinical characteristics. **Measurements and Main Results:** Overall, 1,334 patients were included (tezepelumab, *n* = 665; placebo, *n* = 669). Tezepelumab reduced the annualized asthma exacerbation rate versus placebo by 60% (rate ratio, 0.40 [95% confidence interval, 0.34-0.48]) in the overall population, and clinically meaningful reductions in exacerbations were observed in tezepelumab-treated patients with type 2-high and type 2-low disease by multiple definitions. Tezepelumab reduced exacerbation-related hospitalization or emergency department visits and improved secondary outcomes compared with placebo overall and across subgroups. The incidence of adverse events was

similar between treatment groups. **Conclusions:** Tezepelumab resulted in clinically meaningful reductions in exacerbations and improvements in other outcomes in patients with severe, uncontrolled asthma, across clinically relevant subgroups. Clinical trials registered with www.clinicaltrials.gov (NCT02054130 [PATHWAY], NCT03347279 [NAVIGATOR]).

Keywords: asthma; biomarkers; eosinophil; thymic stromal lymphopoietin.

SUPPLEMENTARY INFO

Associated data, Grant supportexpand

FULL TEXT LINKS

AJRCCM Full Text

Proceed to details

Cite

Share

54

Ann Hum Genet

. 2023 Jul;87(4):174-183.
doi: 10.1111/ahg.12506. Epub 2023 Apr 3.

The impact of obesity on lung function measurements and respiratory disease: A Mendelian randomization study

Jiayan Liu[1], Hanfei Xu[2], L Adrienne Cupples[2], George T O' Connor[3,4], Ching-Ti Liu[2]
Affiliations expand

- PMID: 37009668

- PMCID: PMC10293090 (available on 2024-07-01)

- DOI: 10.1111/ahg.12506

Abstract

Introduction: Observational studies have shown that body mass index (BMI) and waist-to-hip ratio (WHR) are both inversely associated with lung function, as assessed by forced vital capacity (FVC) and forced expiratory volume in 1 s (FEV1). However, observational data are susceptible to confounding and reverse causation.

Methods: We selected genetic instruments based on their relevant large-scale genome-wide association studies. Summary statistics of lung function and asthma came from the UK Biobank and SpiroMeta Consortium meta-analysis (n = 400,102). After examining pleiotropy and removing outliers, we applied inverse-variance weighting to estimate the causal association of BMI and BMI-adjusted WHR (WHRadjBMI) with FVC, FEV1, FEV1/FVC, and asthma. Sensitivity analyses were performed using weighted median, MR-Egger, and MRlap methods.

Results: We found that BMI was inversely associated with FVC (effect estimate, -0.167; 95% confidence interval (CI), -0.203 to -0.130) and FEV1 (effect estimate, -0.111; 95%CI, -0.149 to -0.074). Higher BMI was associated with higher FEV1/FVC (effect estimate, 0.079; 95%CI, 0.049 to 0.110) but was not significantly associated with asthma. WHRadjBMI was inversely associated with FVC (effect estimate, -0.132; 95%CI, -0.180 to -0.084) but has no significant association with FEV1. Higher WHR was associated with higher FEV1/FVC (effect estimate, 0.181; 95%CI, 0.130 to 0.232) and with increased risk of asthma (effect estimate, 0.027; 95%CI, 0.001 to 0.053).

Conclusion: We found significant evidence that increased BMI is suggested to be causally related to decreased FVC and FEV1, and increased BMI-adjusted WHR could lead to lower FVC value and higher risk of asthma. Higher BMI and BMI-adjusted WHR were suggested to be causally associated with higher FEV1/FVC.

Conflict of interest statement

Conflict of Interest Statement:
The authors declare that there is no conflict of interests.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grant supportexpand

FULL TEXT LINKS

Editorial

Thorax
. 2023 Jul;78(7):635-636.
doi: 10.1136/thorax-2023-220030. Epub 2023 Mar 27.

Respiratory effects of air pollution: time to stop this deadly trajectory

Sara De Matteis[1,2]
Affiliations expand

- PMID: 36972978
- DOI: 10.1136/thorax-2023-220030

No abstract available

Keywords: Asthma; Asthma Epidemiology; COPD epidemiology; Lung Cancer.

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

Editorial

Allergy
•
•
•
. 2023 Jul;78(7):1737-1739.
doi: 10.1111/all.15714.

Global initiative for asthma: 30 years of promoting evidence-based asthma care

Arzu Yorgancıoğlu[1], Helen K Reddel[2]; GINA Board of Directors and GINA Science Committee
Collaborators, Affiliations expand

- PMID: 36934290
- DOI: 10.1111/all.15714

No abstract available

- 9 references

Randomized Controlled Trial

Nurs Open

. 2023 Jul;10(7):4373-4383.
doi: 10.1002/nop2.1679. Epub 2023 Mar 17.

Effect of motivational interviewing on treatment adherence and self-efficacy of adolescents with asthma: A randomized controlled trial

Fatemeh Taheri[1], Ahmad Nasiri[1], Somayeh Namdari[2], Fatemeh Salmani[3]
Affiliations expand

- PMID: 36929146
- PMCID: PMC10277392
- DOI: 10.1002/nop2.1679

Free PMC article

Abstract

Aims: This study examined the short-term effect of motivational interviewing on treatment adherence and self-efficacy of adolescents with asthma.

Design: The randomized controlled trial.

Method: In this study, 72 adolescents with asthma were recruited and assigned to experimental and control groups randomly. In the experimental group, the motivational interviewing was performed for five weekly sessions lasting 80-90 min. The treatment adherence and self-efficacy questionnaires were completed before the intervention, 2 weeks and 3 months after the intervention in both groups. Data were analysed by Chi-

Square test, independent samples T-test, repeated measures of Wilcoxon and generalized estimating equation.

Results: The treatment adherence was found to be significantly higher 2 weeks ($p = 0.006$) and 3 months after the intervention ($p = 0.04$) in the experimental group than the control group. In addition, the degree of self-efficacy was significantly more in the experimental group 2 weeks ($p < 0.001$) and 3 months later ($p < 0.001$) than the control group. The result of generalized estimating equation showed that the intervention group had an average of 14.44 more self-efficacy points than the control group ($p < 0.001$). Also, treatment adherence in the intervention group was significantly higher than the control group ($\beta = 6.14$, $p = 0.05$(.

Conclusion: This study adds to the evidence for the effectiveness of motivational interviewing in treatment of adolescents with asthma.

Keywords: adolescents; asthma; motivational interviewing; self-efficacy; treatment adherence.

Conflict of interest statement

None declared.

- 31 references
- 2 figures

BJGP Open

-
-
-

. 2023 Jun 27;7(2):BJGPO.2023.0020.

doi: 10.3399/BJGPO.2023.0020. Print 2023 Jun.

Characteristics of patients with asthma overprescribed short-acting beta-agonist (SABA) reliever inhalers stratified by blood eosinophil count in North East London: a cross-sectional observational study

Paul Pfeffer[1], Hajar Hajmohammadi[2], James Cole[2], Chris Griffiths[2], Sally Hull[2], Anna De Simoni[2]
Affiliations expand

- PMID: 36921995

- DOI: 10.3399/BJGPO.2023.0020

Free article

Abstract

Background: Overprescription of short-acting beta-agonist (SABA) inhalers and blood eosinophil count have strong associations with exacerbation risk in asthma. However, in the authors' recent publication only a minority of patients overprescribed SABA (≥6 inhalers in 12 months) were eosinophilic (≥0.3 x 10^9 cells/l).

Aim: To compare the characteristics of eosinophilic and non-eosinophilic patients with asthma overprescribed SABA inhalers, and identify latent classes using clinical variables available in primary care.

Design & setting: Cross-sectional analysis of patients with asthma in North East London, England, using primary care electronic health record data.

Method: Unadjusted and adjusted multi-variate regression models and latent class analysis.

Results: Eosinophilia was significantly less likely in female patients (P = 0.004), those with multiple mental health comorbidities (P<0.001), and those with SABA on repeat

prescription ($P<0.001$). Latent class analysis identified the following three classes of patients overprescribed SABA: class 1, which represents classical uncontrolled asthma (oral steroids required for exacerbations, step 2-3 asthma medications, high probability of being eosinophilic); class 2, which represents mild asthma (low exacerbation frequency, low asthma medication step, low probability of being eosinophilic); and class 3, which represents difficult asthma (high exacerbation frequency despite high-strength preventer inhalers, low probability of being eosinophilic). The mild asthma class was the largest.

Conclusion: Many patients being overprescribed SABA were non-eosinophilic with a low exacerbation frequency, suggesting disproportionately high SABA prescription compared with other asthma control markers. Potential reasons for high SABA prescription in these patients included repeat prescription (being dispensed but not taken) and use of SABA for non-asthma breathlessness (for example, breathing pattern disorders with anxiety). Further research is needed into management of SABA overuse in patients without other markers of uncontrolled asthma.

Keywords: albuterol; asthma; general practice; primary health care; short-acting beta-agonist.

Respirology

. 2023 Jul;28(7):636-648.
doi: 10.1111/resp.14492. Epub 2023 Mar 15.

Identifying the asthma research priorities of people with asthma, their carers and other stakeholders

Eleanor C Majellano[1 2 3], Rose L Bell[4], Anthony W Flynn[4], Anne Mckenzie[5], Sundram Sivamalai[6], Michele Goldman[7], Lauren Vaughan[8], Peter G Gibson[1 3 9 10]

Affiliations expand

- PMID: 36921924

- DOI: 10.1111/resp.14492

Free article

Abstract

Background and objective: People living with asthma, their carers, clinicians and policymakers are the end-users of research and need research that address their individual healthcare needs. We aimed to understand the research priorities of end-users of asthma research.

Methods: A national cross-sectional mixed-methods study was conducted. The study included an online survey that engaged patients, carers, healthcare professionals and policymakers to provide statements to free-text questions about what they would like to see answered by research to improve living with asthma on a day-to-day basis. Responses where thematically analysed followed by three online priority setting consensus workshops.

Results: There were 593 respondents who provided 1446 text comments. Participants prioritized 10 asthma research themes which were: (1) asthma in children, (2) COVID 19 and asthma, (3) asthma care and self-management, (4) diagnosis and medication, (5) managing asthma attacks, (6) causes, prevention and features of asthma, (7) mental health, (8) asthma and ageing, (9) severe asthma, (10) asthma and other health conditions. Each theme comprises specific research questions.

Conclusion: This project successfully established 10 priority research themes for asthma, reflecting the collective voice of the end-users of this research. These novel data can be used to address the documented mismatch in research prioritization between the research community and the end-users of research.

Keywords: Asthma Australia; James Lind Alliance; asthma; consumer; end-user; engagement; research priority setting.

- 37 references

SUPPLEMENTARY INFO

MeSH terms, Grant supportexpand

FULL TEXT LINKS

WILEY Free Full Text

Proceed to details

Cite

Share

60

Allergy

-
-
-

. 2023 Jul;78(7):2055-2057.
doi: 10.1111/all.15703. Epub 2023 Mar 16.

Dupilumab treatment increases transitional B cells in severe asthma

Marek Lommatzsch[1], Marieke Dost[1], Neeraja Jaishankar[1], Martin Weise[1], Paul Stoll[1], J Christian Virchow[1], Kai Bratke[1]

Affiliations expand

- PMID: 36883436

- DOI: 10.1111/all.15703

No abstract available

- 8 references

SUPPLEMENTARY INFO

Publication types, Grant supportexpand

FULL TEXT LINKS

WILEY Full Text Article

Proceed to details

Allergol Int
.
. 2023 Jul;72(3):394-401.
doi: 10.1016/j.alit.2023.01.004. Epub 2023 Mar 1.

Questionnaire for diagnosing asthma-COPD overlap in COPD: Development of ACO screening questionnaire (ACO-Q)

Yuki Suzuki[1], Hiroyuki Nagase[2], Hikaru Toyota[1], Sho Ohyatsu[3], Konomi Kobayashi[1], Yuri Takeshita[1], Yuuki Uehara[1], Saya Hattori[1], Mana Ishizuka[1], Hirokazu Sakasegawa[1], Michio Kuramochi[1], Tadashi Kohyama[3], Naoya Sugimoto[1]
Affiliations expand

- PMID: 36868950

- DOI: 10.1016/j.alit.2023.01.004

Free article

Abstract

Background: The considerable prevalence and worse outcomes of asthma-COPD overlap (ACO) in COPD have been reported, and optimal introduction of ICS is essential for ACO. However, diagnostic criteria for ACO consist of multiple laboratory tests, which is challenging during this COVID-19 era. The purpose of this study was to create a simple questionnaire to diagnose ACO in patients with COPD.

Methods: Among 100 COPD patients, 53 were diagnosed with ACO based on the Japanese Respiratory Society Guidelines for ACO. Firstly, 10 candidate questionnaire items were generated and further selected by a logistic regression model. An integer-based scoring system was generated based on the scaled estimates of items.

Results: Five items, namely a history of asthma, wheezing, dyspnea at rest, nocturnal awakening, and weather- or season-dependent symptoms, contributed significantly to the diagnosis of ACO in COPD. History of asthma was related to FeNO >35 ppb. Two points were assigned to history of asthma and 1 point to other items in the ACO screening questionnaire (ACO-Q), and the area under the receiver operating characteristic curve was 0.883 (95% CI: 0.806-0.933). The best cutoff point was 1 point, and the positive predictive value was 100% at a cutoff of 3 points or higher. The result was reproducible in the validation cohort of 53 patients with COPD.

Conclusions: A simple questionnaire, ACO-Q, was developed. Patients with scores ≥3 could be reasonably recommended to be treated as ACO, and additional laboratory testing would be recommended for patients with 1 and 2 points.

Keywords: Asthma; Asthma-COPD overlap; COPD; FeNO; Questionnaire.

BJGP Open

. 2023 Jun 27;7(2):BJGPO.2022.0165.
doi: 10.3399/BJGPO.2022.0165. Print 2023 Jun.

Development of a patient-centred electronic review template to support self-management in primary care: a mixed-methods study

Kirstie McClatchey[1], Aimee Sheldon[2], Liz Steed[3], Jessica Sheringham[4], Francis Appiagyei[5], David Price[6,7], Vicky Hammersley[2], Stephanie Taylor[3], Hilary Pinnock[2]
Affiliations expand

- PMID: 36868789

- DOI: 10.3399/BJGPO.2022.0165

Free article

Abstract

Background: Electronic templates are frequently used in long-term condition (LTC) reviews (for example, asthma) to act as reminders and improve documentation; however, they can restrict patient-centred care and opportunities for patients to discuss concerns and self-management.

Aim: The IMPlementing IMProved Asthma self-management as RouTine (IMP²ART) programme aimed to develop a patient-centred asthma review template that encourages supported self-management.

Design & setting: This was a mixed-methods study, which integrated qualitative and systematic review data, primary care Professional Advisory Group feedback, and qualitative data from clinician interviews.

Method: Aligned with the Medical Research Council complex intervention framework, a template was developed in the following three phases: (1) development phase, which consisted of a qualitative exploration with clinicians and patients, a systematic review, and prototype template development; (2) feasibility pilot phase, which involved feedback from clinicians (n = 7); and (3) pre-piloting phase, which consisted of delivering the template within the IMP²ART implementation strategy (incorporating the template with patient and professional resources) and eliciting clinician feedback (n = 6).

Results: Template development was guided by the preliminary qualitative work and the systematic review. A prototype template was developed with an opening question to establish patient agendas, and a closing prompt to confirm agendas have been addressed and an asthma action plan provided. The feasibility pilot identified refinements needed, including focusing the opening question on asthma. Pre-piloting ensured integration with the IMP²ART strategy.

Conclusion: Following the multi-stage development process, the implementation strategy, including the asthma review template, is now being tested in a cluster randomised controlled trial.

Keywords: asthma; general practice; primary health care; self-management.

- Cited by 1 article

FULL TEXT LINKS

Read this at BJGP Open

Proceed to details

Cite

Share

63

Allergy

-
-
-

. 2023 Jul;78(7):2036-2040.
doi: 10.1111/all.15683. Epub 2023 Mar 10.

BTEX exposure and its body burden pose differential risks for asthma and its phenotypic clusters

Yuan-Ting Hsu[1], Chao-Chien Wu[2], Chin-Chou Wang[2,3], Wen-Yu Chung[4], Chau-Chyun Sheu[5,6], Yi-Hsin Yang[7], Ming-Yen Cheng[8], Ruay-Sheng Lai[9], Sum-Yee Leung[2], Chi-Cheng Lin[10], Yu-Feng Wei[11], Ching-Hsiung Lin[12,13,14], Sheng-Hao Lin[12,13,14], Jeng-Yuan Hsu[15], Wei-Chang Huang[16,17,18,19,20], Chia-Cheng Tseng[2], Yung-Fa Lai[21], Meng-Hsuan Cheng[5,22], Huang-Chi Chen[23], Chih-Jen Yang[5], Chian-Heng Su[5], Chien-Jen Wang[1], Shih-Chang Hsu[24,25], Chih-Hsing Hung[26,27], Chon-Lin Lee[3,28], Ming-Shyan Huang[5,21], Shau-Ku Huang[1,29]
Affiliations expand

- PMID: 36853070

- DOI: 10.1111/all.15683

No abstract available

- 6 references

Allergy
.
. 2023 Jul;78(7):1909-1921.
doi: 10.1111/all.15691. Epub 2023 Mar 13.

Adult asthma with symptomatic eosinophilic inflammation is accompanied by alteration in gut microbiome

Bon-Hee Gu[1], Jun-Pyo Choi[2], Tansol Park[3], A-Sol Kim[4], Ho Young Jung[5], Doo Young Choi[5], Sang Jin Lee[6], Yoon-Seok Chang[2], Myunghoo Kim[1,7], Han-Ki Park[5]
Affiliations expand

- PMID: 36847620

- DOI: 10.1111/all.15691

Abstract

Background: Accumulating evidence suggests that the gut microbiome is associated with asthma. However, altered gut microbiome in adult asthma is not yet well established. We aimed to investigate the gut microbiome profiles of adult asthmatic patients with symptomatic eosinophilic inflammation.

Methods: The 16 s rRNA gene metagenomic analysis of feces in the symptomatic eosinophilic asthma group (EA, n = 28) was compared with the healthy control (HC, n = 18) and the chronic cough control (CC, n = 13). A correlation analysis between individual taxa and clinical markers was performed within the EA group. Changes in the gut microbiome were examined in patients with significant symptom improvement in the EA group.

Results: The relative abundances of Lachnospiraceae and Oscillospiraceae significantly decreased and Bacteroidetes increased in the EA group. Within EA group, Lachnospiraceae was negatively correlated with indicators of type 2 inflammation and lung function decline. Enterobacteriaceae and Prevotella was positively associated with type 2 inflammation and lung function decline, respectively. The abundance of predicted genes associated with amino acid metabolism and secondary bile acid biosynthesis was diminished in the EA group. These functional gene family alterations could be related to gut permeability, and the serum lipopolysaccharide concentration was actually high in the EA group. EA patients with symptom improvement after 1 month did not show a significant change in the gut microbiome.

Conclusions: Symptomatic eosinophilic adult asthma patients showed altered the gut microbiome composition. Specifically, a decrease in commensal clostridia was observed, and a decrease in Lachnospiraceae was correlated with blood eosinophilia and lung function decline.

Keywords: adult; asthma; eosinophils; gut microbiome.

- 41 references

SUPPLEMENTARY INFO

Grant supportexpand

FULL TEXT LINKS

WILEY Full Text Article

Proceed to details

Cite

Share

65

Allergy

-
-

. 2023 Jul;78(7):1742-1757.
doi: 10.1111/all.15667. Epub 2023 Feb 15.

EAACI guidelines on environmental science in allergic diseases and asthma – Leveraging artificial intelligence and machine learning to develop a causality model in exposomics

Mohamed H Shamji[1,2], Markus Ollert[3,4], Ian M Adcock[1,2], Oscar Bennett[5], Alberto Favaro[5], Roudin Sarama[1,2], Carmen Riggioni[6], Isabella Annesi-Maesano[7], Adnan Custovic[1,2], Sara Fontanella[1,2], Claudia Traidl-Hoffmann[8,9], Kari Nadeau[10], Lorenzo Cecchi[11], Magdalena Zemelka-Wiacek[12], Cezmi A Akdis[13], Marek Jutel[12,14], Ioana Agache[15]
Affiliations expand

- PMID: 36740916

- DOI: 10.1111/all.15667

Abstract

Allergic diseases and asthma are intrinsically linked to the environment we live in and to patterns of exposure. The integrated approach to understanding the effects of exposures on the immune system includes the ongoing collection of large-scale and complex data. This requires sophisticated methods to take full advantage of what this data can offer. Here we discuss the progress and further promise of applying artificial intelligence and machine-learning approaches to help unlock the power of complex environmental data sets toward providing causality models of exposure and intervention. We discuss a range of relevant machine-learning paradigms and models including the way such models are trained and validated together with examples of machine learning applied to allergic disease in the context of specific environmental exposures as well as attempts to tie these environmental data streams to the full representative exposome. We also discuss the promise of artificial intelligence in personalized medicine and the methodological approaches to healthcare with the final AI to improve public health.

Keywords: allergy; artificial intelligence; asthma; environment; exposome.

Thorax
.
. 2023 Jul;78(7):698-705.
doi: 10.1136/thorax-2022-219489. Epub 2023 Feb 2.

Air pollution associated with incidence and progression trajectory of chronic lung diseases: a population-based cohort study

Xiaojie Wang[1], Lan Chen[1], Miao Cai[1], Fei Tian[1], Hongtao Zou[1], Zhengmin Min Qian[2], Zilong Zhang[1], Haitao Li[3], Chongjian Wang[4], Steven W Howard[5], Yang Peng[6,7], Li'e Zhang[6,7], Elizabeth Bingheim[2], Hualiang Lin[8], Yunfeng Zou[9,10]
Affiliations expand

- PMID: 36732083

- DOI: 10.1136/thorax-2022-219489

Abstract

Background: No prior study has examined the effects of air pollution on the progression from healthy to chronic lung disease, subsequent chronic lung multimorbidity and further to death.

Methods: We used data from the UK Biobank of 265 506 adults free of chronic lung disease at recruitment. Chronic lung multimorbidity was defined as the coexistence of at least two chronic lung diseases, including asthma, chronic obstructive pulmonary disease and lung cancer. The concentrations of air pollutants were estimated using land-use regression models. Multistate models were applied to assess the effect of air pollution on the progression of chronic lung multimorbidity.

Results: During a median follow-up of 11.9 years, 13 863 participants developed at least one chronic lung disease, 1055 developed chronic lung multimorbidity and 12 772 died. We observed differential associations of air pollution with different trajectories of chronic lung multimorbidity. Fine particulate matter showed the strongest association with all five transitions, with HRs (95% CI) per 5 μg/m^3 increase of 1.31 (1.22 to 1.42) and 1.27 (1.01 to 1.57) for transitions from healthy to incident chronic lung disease and from incident chronic lung disease to chronic lung multimorbidity, and 1.32 (1.21 to 1.45), 1.24 (1.01 to 1.53) and 1.91 (1.14 to 3.20) for mortality risk from healthy, incident chronic lung disease and chronic lung multimorbidity, respectively.

Conclusion: Our study provides the first evidence that ambient air pollution could affect the progression from free of chronic lung disease to incident chronic lung disease, chronic lung multimorbidity and death.

Keywords: COPD epidemiology; asthma epidemiology; lung cancer.

Conflict of interest statement

Competing interests: None declared.

Pediatr Emerg Care
.
. 2023 Jul 1;39(7):524-529.
doi: 10.1097/PEC.0000000000002890. Epub 2023 Jan 8.

Early Intravenous Magnesium Sulfate Administration in the Emergency Department for Severe Asthma Exacerbations

Brian L Forster[1], Fridtjof Thomas[2], Sandra R Arnold[3], Mark A Snider[1]
Affiliations expand

- PMID: 36728409

- DOI: 10.1097/PEC.0000000000002890

Abstract

Background: Severe asthma exacerbations in pediatric patients occur frequently and can require pediatric intensive care unit (PICU) admission.

Objective: To determine if early administration of intravenous magnesium sulfate (IVMg) to pediatric patients experiencing severe asthma exacerbations, defined as a respiratory clinical score (RCS) of 9 to 12, resulted in fewer PICU admissions.

Methods: Retrospective chart review of pediatric patients aged from 2 to 17 years presenting with a severe asthma exacerbation to a single tertiary care pediatric emergency department. Univariable and multivariable logistic regression analyses were used to determine if admission to the PICU was associated with early IVMg treatment, within 60 minutes of registration.

Results: A total of 1911 patients were included in the study, of which 1541 received IVMg. The average time to IVMg was 79 minutes, with 35% of the patients receiving it within 60 minutes of arrival. Two hundred forty-eight (13%) were admitted to the PICU, 641 (34%) were admitted to the general inpatient floor, and 1022 (53%) were discharged home. Factors associated with increased odds ratio (OR) of PICU admission were: early IVMg (OR, 1.63; 95% CI: 1.16-2.28), arrival mode to the emergency department via ambulance (OR,

2.23; 95% CI: 1.45-3.43), history of PICU admission for asthma (OR, 1.73; 95% CI: 1.22-2.44), and diagnosis of status asthmaticus (OR, 8.88; 95% CI: 3.49-30.07). Calculated OR of PICU admission subcategorized by RCS for early IVMg patients, after controlling for PICU risk factors, are as follows: RCS 9 (reference), RCS 10 (OR, 2.52; 95% CI: 0.89-2.23), RCS 11 (OR, 2.19; 95% CI: 1.3-3.70), and RCS 12 (OR, 4.12; 95% CI: 2.13-7.95).

Conclusions: Early administration of IVMg to pediatric patients experiencing severe asthma exacerbations does not result in fewer PICU admissions.

Conflict of interest statement

Disclosure: The authors declare no conflict of interest.

- 28 references

Allergol Int

-
-
-

. 2023 Jul;72(3):477-479.
doi: 10.1016/j.alit.2022.12.005. Epub 2023 Jan 13.

Small airway dysfunction in asthma based on oscillometry

Toshihiro Shirai[1], Keita Hirai[2], Yasuhiro Gon[3]
Affiliations expand

- PMID: 36642622

- DOI: 10.1016/j.alit.2022.12.005

No abstract available

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

Allergol Int

-
-
-

. 2023 Jul;72(3):402-410.
doi: 10.1016/j.alit.2022.11.012. Epub 2022 Dec 29.

Blood eosinophil count variability in chronic obstructive pulmonary disease and severe asthma

Yuki Abe[1], Masaru Suzuki[2], Hirokazu Kimura[1], Kaoruko Shimizu[1], Nozomu Takei[1], Akira Oguma[1], Machiko Matsumoto-Sasaki[1], Houman Goudarzi[1], Hironi Makita[3], Masaharu Nishimura[3], Satoshi Konno[1]
Affiliations expand

- PMID: 36586746

- DOI: 10.1016/j.alit.2022.11.012

Free article

Abstract

Background: Blood eosinophils are essential biomarkers that vary substantially over time in patients with COPD and asthma. However, no study has identified the changes and effects in the changes of the blood eosinophil counts over time in both diseases. This study

aimed to demonstrate blood eosinophil variability in patients with COPD and severe asthma based on these backgrounds.

Methods: A total of 172 patients with COPD from the Hokkaido COPD cohort study and 96 patients with severe asthma from the Hokkaido Severe Asthma Cohort Study, whose blood eosinophil counts were measured annually over a 3-year period, were analyzed. The factors contributing to consistently high or low blood eosinophil counts were examined in each cohort. The stability of the eosinophil classification (<150, 150-299, ≥300 cells/μL) was compared based on the number of asthma-like features in patients with COPD and the smoking status in patients with severe asthma.

Results: Among all the patients, the most stable range of baseline blood eosinophil counts differed between the two diseases, with <150 cells/μL in COPD and ≥300 cells/μL in severe asthma. In COPD, the number of asthma-like features (bronchodilator reversibility, blood eosinophilia, and atopy) affects the blood eosinophil count variation patterns. In severe asthma, smoking status did not affect the blood eosinophil count variation patterns.

Conclusions: We identified variations in the blood eosinophil counts and their contributing factors in patients with COPD and severe asthma.

Keywords: Asthma; Chronic obstructive pulmonary disease; Cohort studies; Eosinophils.

J Asthma

-
-
-

. 2023 Jul;60(7):1446-1454.
doi: 10.1080/02770903.2022.2155185. Epub 2022 Dec 29.

Beliefs about medicines and adherence to asthma medications during pregnancy

Vanessa E Murphy[1], Annelies L Robijn[1], Tommy B Metcalfe[1], Thomas K Wright[2], Peter G Gibson[3,4], Kirsten McCaffery[5], Megan E Jensen[1]
Affiliations expand

- PMID: 36469750

- DOI: 10.1080/02770903.2022.2155185

Abstract

Objective: Discontinuation of, and non-adherence to, inhaled corticosteroids (ICS) for asthma treatment is a significant issue in pregnancy. This study characterized beliefs about medicines in pregnant women with asthma and investigated associations with ICS adherence.

Methods: Pregnant women with relatively mild asthma (n = 302) were grouped according to ICS use and self-reported adherence (≥80% doses taken). They completed questions about dislike of asthma medications and the validated Beliefs about Medicines Questionnaire (BMQ), which consists of ten questions about asthma medicines ("necessity" questions about maintaining health, or "concern" questions about adverse effects), and eight general medicine questions, scored on five-point Likert scales. The Necessity Concerns differential (N-C) was calculated, with positive scores indicating that the patient perceives the benefits of medicines to outweigh the risks.

Results: ICS was used by 87 (29%) women, with 49 (56%) self-reporting adherence. Of the 22% who disliked taking asthma medications during pregnancy, 20% had the belief that the medication was unsafe. ICS users had a significantly higher BMQ necessity score and higher necessity-concern differential score than nonusers; when adjusted for covariates, ICS non-adherence was associated with a lower necessity score (p = 0.015). Women adherent to ICS were more likely to agree to "my health at present depends on my asthma medication" compared to non-adherent ICS users.

Conclusions: ICS non-adherence was not associated with having relatively more concerns about asthma medicines; however, ICS users were more likely to perceive that the benefits of medication use outweighed any risks. Interventions to improve asthma medication adherence in pregnancy are needed.

Keywords: Pregnancy; inhaled corticosteroid; treatment.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

3

J Asthma

. 2023 Jul;60(7):1438-1445.
doi: 10.1080/02770903.2022.2155184. Epub 2023 Feb 2.

P2X3- *P2X7* SNPs and gene-gene and gene-environment interactions on pediatric asthma

Lingxue Li[1], Bing Wei[1], Jingjing Jia[1,2], Mo Li[1], Mengyang Ren[1,2], Shinan Zhang[1]
Affiliations expand

- PMID: 36469748

- DOI: 10.1080/02770903.2022.2155184

Abstract

Background: To investigate the relationship between polymorphisms of *P2X3*, *P2X7* genes and environment interaction with susceptibility of childhood asthma.

Methods: We conducted a matched case-control study with 170 cases and 175 healthy controls. The rs10896611, rs2276038, rs3781899 in *P2X3* and rs1718119, rs3751143 in *P2X7* polymorphisms were genotyped using the technique of an improved multiplex

ligation detection reaction. Gene-gene, gene-environment and haplotype-environment interactions were tested using the generalized multi-factor dimensionality reduction method.

Results: There were no differences between cases and controls in allele or genotype frequencies of *P2X3* and *P2X7*. The C/C, G/C genotypes of rs10896611, and C/C, C/T genotypes of rs2276038 and G/G, G/A genotypes of rs3781899 were associated with asthmatic cough ($p > 0.05$). The haplotype GCT of *P2X3* reduced the risk of asthma (OR = 0.48, $p = 0.048$), and the haplotypes AGT (OR = 0.45, $p = 0.001$) and GCC (OR = 2.16, $p = 0.002$) were associated with asthmatic cough. The haplotype AA of *P2X7* increased risk of asthma severity ($p < 0.05$). The three-locus model indicated a potential haplotype-environment interaction in GCT, ETS, and pet ($p = 0.001$).

Conclusions: The rs10896611, rs2276038 and rs3781899 of *P2X3* minor alleles increased the risk of asthmatic cough. Haplotype GCT of *P2X3* was a protective factor for asthma, the haplotype AGT was a protective factor and GCC was a risk factor for asthma with cough. In addition, the interactions of haplotype GCT of *P2X3*, ETS and pet may increase an individual's susceptibility to asthma.

Keywords: P2X3; P2X7; asthma; children; interaction; polymorphism.

J Asthma

. 2023 Jul;60(7):1377-1385.
doi: 10.1080/02770903.2022.2149409. Epub 2022 Dec 12.

Utilization of the emergency department as a routine source of care among children with asthma

Erin Davis[1], Maria Fagnano[1], Jill S Halterman[1], Sean M Frey[1]
Affiliations expand

- PMID: 36399630

- PMCID: PMC10192056 (available on 2024-07-01)

- DOI: 10.1080/02770903.2022.2149409

Abstract

Objective: To describe characteristics of children with persistent asthma in the ED who receive most of their healthcare in emergency settings; and determine whether recent asthma experiences or historic patterns of care are associated with identifying the ED as a typical location for care.**Methods:** We conducted a sub-analysis of baseline data from Telemedicine Enhanced Asthma Management through the Emergency Department (TEAM-ED), an RCT of children (3-12 years) presenting to the ED with persistent asthma (2016-2020). Caregivers identified reasons for seeking emergency care, including if their child received most overall healthcare in the ED ('ED Care'; primary outcome) or not ('Other Care'). Independent variables included demographics, recent symptoms and quality of life (QOL), and historic preventive care and healthcare use. We compared responses between ED Care and Other Care groups using bivariate and multivariate analyses.**Results:** We analyzed data for 355 children (31% ED Care, 69% Other Care). Compared with Other Care, ED Care respondents were more likely to identify the ED as the closest source of healthcare; report fewer symptom nights but a poorer quality of life; and describe the ED as a usual place for sick care, despite most having a PCP.**Conclusions:** Many children with asthma use the ED as a typical source of healthcare, and are distinguished by need for proximity, poorer caregiver QOL, and historic patterns of care-seeking. Efforts to improve timely access to outpatient care and reinforce the role of PCP-directed asthma management, such as through telemedicine, may reduce preventable morbidity including ED visits.

Keywords: Pediatrics; asthma; control/management; emergency department; prevention.

Conflict of interest statement

Disclosure of Interest:
The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

- Cited by 1 article

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grant supportexpand

FULL TEXT LINKS

View full text
Proceed to details
Cite

Share
5

J Asthma

. 2023 Jul;60(7):1369-1376.
doi: 10.1080/02770903.2022.2147081. Epub 2022 Dec 1.

Sex differences in the association between smoking exposure and prevalence of wheeze and asthma in 3-year-old children

Maoka Yamada[1,2], Keiko Tanaka[2,3,4,5], Chisato Nagata[6], Masashi Arakawa[7,8], Yoshihiro Miyake[2,3,4,5]
Affiliations expand

- PMID: 36368047

- DOI: 10.1080/02770903.2022.2147081

Abstract

Objective: We examined independent and joint associations between prenatal and postnatal smoking exposure and the prevalence of wheeze and asthma among 3-year-old Japanese children. Sex differences were also investigated.

Methods: Smoking exposure, allergic symptoms, and potential confounding factor data were collected using a self-administered questionnaire. Wheeze was defined on the basis of the International Study of Asthma and Allergies in Childhood criteria. Physician-diagnosed asthma was considered to be present if a physician had diagnosed the child with asthma any time before the survey was administered.

Results: There were 6402 pediatric participants in this study. Maternal smoking throughout pregnancy and household smoking exposure during the first year of life were associated with an increased prevalence of wheeze among girls but not boys (adjusted odds ratio (OR) [95% CI] = 2.00 [1.13-3.42] and 1.34 [1.07-1.68], respectively). Girls exposed to both prenatal maternal smoking and postnatal household smoking exposure had a significantly higher prevalence of wheeze and physician-diagnosed asthma compared with girls without these exposures (adjusted OR [95% CI] = 2.06 [1.39-3.01] and 1.86 [1.01-3.26], respectively). No association was observed between perinatal smoking exposure and the prevalence of wheeze or asthma among boys. Significant interactions between sex and smoking exposure affecting wheeze and asthma were also found (*p* for interaction = 0.0003 and 0.01, respectively).

Conclusion: We found a positive association between perinatal smoking exposure and the prevalence of wheeze and asthma only among girls. Effects of perinatal smoking exposure on wheeze and asthma might be sex specific. Further research is required.

Keywords: Asthma; child; cross-sectional studies; environmental tobacco smoke; passive smoking; wheeze.

. 2023 Jul;60(7):1336-1346.
doi: 10.1080/02770903.2022.2145219. Epub 2022 Dec 1.

Impulse oscillometry (IOS) for detection of exercise induced bronchoconstriction in children with asthma ages 6–15 years

Samriti Gupta[1,2], Aparna Mukherjee[1,3], Sumita Gupta[1], Kana Ram Jat[1], Jhuma Sankar[1], Rakesh Lodha[1], S K Kabra[1]
Affiliations expand

- PMID: 36336903

- DOI: 10.1080/02770903.2022.2145219

Abstract

Objectives: To determine the discriminatory value of various impulse oscillometry (IOS) parameters, and to find the cutoff value of the appropriate parameter for identifying exercise-induced bronchoconstriction (EIB) in children with asthma.

Methods: This cross-sectional study was conducted in India from October 2016 to March 2018 in children with asthma who were 6-15 years of age. One hundred and five children were enrolled and subjected to pre-exercise IOS and spirometry followed by free running treadmill test as an exercise challenge. All children could achieve minute ventilation >17.5-21 times of FEV_1 during the exercise challenge test. Then, IOS and spirometry were performed at 10 ± 2, 20 ± 2, and 30 ± 2 min post-exercise challenge. EIB was defined as reduction of FEV_1 ≥10% within 30 min of exercise. For purposes of analysis, the children were grouped into two categories: "EIB Present" or "EIB Absent".

Results: The prevalence of EIB in our study was 20.95% (*n* = 22). ΔR5max percentage within 30 min post-exercise (AUC 0.74; 95% CI: 0.64, 0.84) had the best discriminating capacity among all IOS parameters for identifying EIB. A cutoff value of 14.1% increase in R5 within 30 min post-exercise was obtained for detection of EIB (sensitivity-95.45%, specificity-50.6%, PPV-33.87% and NPV-97.67%).

Conclusions: A percentage change in R5 with a cutoff value of 14.1% increase post-exercise had the best discriminatory capacity among all IOS parameters for detection of EIB in children with asthma. However, low positive predictive value (PPV) with high negative predictive value (NPV) made this cutoff value more apt to rule out EIB.

Keywords: EIB; FEV1; R5; airway hyperresponsiveness; early detection; post-exercise.

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

7

J Asthma

. 2023 Jul;60(7):1316-1325.
doi: 10.1080/02770903.2022.2144354. Epub 2022 Dec 1.

Childhood overweight and obesity and abnormal birth anthropometric measures are associated with a higher prevalence of childhood asthma in preschool age

Eleni Pavlidou[1], Maria Mantzorou[1], Maria Tolia[2], Georgios Antasouras[1], Antigoni Poutsidi[3], Evmorfia Psara[1], Efthymios Poulios[1], Aristeidis Fasoulas[1], Georgios K Vasios[1], Constantinos Giaginis[1]

Affiliations expand

- PMID: 36332163

- DOI: 10.1080/02770903.2022.2144354

Abstract

Objectives: Childhood asthma is one of the most common non-communicable diseases in the world. Several perinatal and postnatal factors have been associated with increased risk of developing childhood asthma. The present study aims to assess whether childhood overweight and obesity and abnormal birth anthropometric measures affect the risk of developing childhood asthma in preschool age.

Methods: In this study, 5215 preschool children at the age of 2-5 years were enrolled after applying several inclusion and exclusion criteria and they examined whether they present asthma symptoms. Non-adjusted and adjusted statistical analysis was performed to assess whether perinatal and postnatal factors increase the risk of developing childhood asthma.

Results: A prevalence of 4.5% of childhood asthma was recorded. Among children diagnosed with asthma, 19.4% were affected by overweight and 13.9% were obese. Childhood overweight/obesity was indepedently associated with a 76% higher risk of childhood asthma than normal weight. Abnormal birth anthropometric measures, i.e. birth weight, length, and head circumference, were independently associated with higher odds (87%, 29%, and 23%, respectively) of childhood asthma than normal ranges.

Conclusions: This is a cross-sectional, nationally representative study which supported evidence that childhood overweight/obesity and abnormal birth anthropometric measures may independently increase the risk of childhood asthma in preschool age. Emergent health policies and strategies are recommended to promote a healthy lifestyle, preventing childhood obesity at the early stages of life.

Keywords: Childhood overweight and obesity; birth head circumference; birth length; birth weight; childhood asthma; preschool age.

. 2023 Jul;78(7):643-652.
doi: 10.1136/thorax-2021-217032. Epub 2022 Aug 3.

Asthma exacerbations are associated with a decline in lung function: a longitudinal population-based study

Seyi Soremekun[1], Liam G Heaney[2], Derek Skinner[3 4], Lakmini Bulathsinhala[3 4], Victoria Carter[3 4], Isha Chaudhry[3 4], Naeimeh Hosseini[3 4], Neva Eleangovan[3 4], Ruth Murray[3 4], Trung N Tran[5], Benjamin Emmanuel[5], Esther Garcia Gil[6], Andrew Menzies-Gow[7], Matthew Peters[8], Njira Lugogo[9], Rupert Jones[4 10], David B Price[11 12 13]
Affiliations expand

- PMID: 35922128

- PMCID: PMC10313996

- DOI: 10.1136/thorax-2021-217032

Free PMC article

Abstract

Rationale: Progressive lung function (LF) decline in patients with asthma contributes to worse outcomes. Asthma exacerbations are thought to contribute to this decline; however, evidence is limited with mixed results.

Methods: This historical cohort study of a broad asthma patient population in the Optimum Patient Care Research Database, examined asthma patients with 3+eligible post-18th birthday peak expiratory flow rate (PEF) records (primary analysis) or records of forced expiratory flow in 1 s (FEV_1) (sensitivity analysis). Adjusted linear growth models tested the association between mean annual exacerbation rate (AER) and LF trajectory.

Results: We studied 1 09 182 patients with follow-up ranging from 5 to 50 years, of which 75 280 had data for all variables included in the adjusted analyses. For each additional exacerbation, an estimated additional -1.34 L/min PEF per year (95% CI -1.23 to -1.50) were

lost. Patients with AERs >2/year and aged 18-24 years at baseline lost an additional -5.95 L/min PEF/year (95% CI -8.63 to -3.28) compared with those with AER 0. These differences in the rate of LF decline between AER groups became progressively smaller as age at baseline increased. The results using FEV_1 were consistent with the above.

Conclusion: To our knowledge, this study is the largest nationwide cohort of its kind and demonstrates that asthma exacerbations are associated with faster LF decline. This was more prominent in younger patients but was evident in older patients when it was related to lower starting LF, suggesting a persistent deteriorating phenotype that develops in adulthood over time. Earlier intervention with appropriate management in younger patients with asthma could be of value to prevent excessive LF decline.

Keywords: asthma.

Conflict of interest statement

Competing interests: DS, VC and NE are employees of Optimum Patient Care, and SS, LB, IC and NH were employees of Optimum Patient Care. Optimum Patient Care is a co-funder of the International Severe Asthma Registry. LGH declares he has received grant funding, participated in advisory boards and given lectures at meetings supported by Amgen, AstraZeneca, Boehringer Ingelheim, Circassia, Hoffmann la Roche, GlaxoSmithKline, Novartis, and Teva; he has taken part in asthma clinical trials sponsored by Boehringer Ingelheim, Hoffmann la Roche, and GlaxoSmithKline for which his institution received remuneration; he is the Academic Lead for the Medical Research Council Stratified Medicine UK Consortium in Severe Asthma which involves industrial partnerships with a number of pharmaceutical companies including Amgen, AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Hoffmann la Roche, and Janssen. TNT and BE are employees of AstraZeneca, and EGG was an employee of AstraZeneca. AstraZeneca is a co-funder of the International Severe Asthma Registry. AM-G has attended advisory boards for AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Novartis, Sanofi and Teva, and has received speaker fees from AstraZeneca, Boehringer Ingelheim, Novartis, Roche, Teva and Vectura. He has participated in research with AstraZeneca for which his institution has been remunerated and has attended international conferences with Teva. He has had consultancy agreements with AstraZeneca, Sanofi, and Vectura. MP declares personal fees and non-financial support from AstraZeneca and GlaxoSmithKline. NL consulted for AstraZeneca and GSK; served on protocol committee with AstraZeneca; and served on advisory board with AstraZeneca, GSK, Sanofi, Novartis, Genentech and Teva. RJ reports grants, personal fees, and non-financial support from AstraZeneca and OPRI, personal fees and non-financial support from Boehringer Ingelheim, grants, personal fees, and non-financial support from GSK, grants and non-financial support from Novartis, non-financial support from Nutricia, and personal fees from Pfizer outside the submitted work. DBP has

advisory board membership with Amgen, AstraZeneca, Boehringer Ingelheim, Chiesi, Circassia, Mylan, Mundipharma, Novartis, Regeneron Pharmaceuticals, Sanofi Genzyme, Teva Pharmaceuticals, Thermofisher; consultancy agreements with Amgen, AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Mylan, Mundipharma, Novartis, Pfizer, Teva Pharmaceuticals, Theravance; grants and unrestricted funding for investigator-initiated studies (conducted through Observational and Pragmatic Research Institute Pte Ltd) from AstraZeneca, Boehringer Ingelheim, Chiesi, Circassia, Mylan, Mundipharma, Novartis, Pfizer, Regeneron Pharmaceuticals, Respiratory Effectiveness Group, Sanofi Genzyme, Teva Pharmaceuticals, Theravance, UK National Health Service; payment for lectures/speaking engagements from AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, GlaxoSmithKline, Kyorin, Mylan, Mundipharma, Novartis, Regeneron Pharmaceuticals, Sanofi Genzyme, Teva Pharmaceuticals; payment for the development of educational materials from Mundipharma, Novartis; payment for travel/accommodation/meeting expenses from AstraZeneca, Boehringer Ingelheim, Mundipharma, Mylan, Novartis, Thermofisher; funding for patient enrolment or completion of research from Novartis; stock/stock options from AKL Research and Development Ltd which produces phytopharmaceuticals; owns 74% of the social enterprise Optimum Patient Care Ltd (Australia and UK) and 74% of Observational and Pragmatic Research Institute Pte Ltd (Singapore); 5% shareholding in Timestamp which develops adherence monitoring technology; is peer reviewer for grant committees of the Efficacy and Mechanism Evaluation programme, and Health Technology Assessment; and was an expert witness for GlaxoSmithKline.

Thorax

. 2023 Jul;78(7):653-660.

doi: 10.1136/thorax-2022-218931. Epub 2022 Jul 30.

Preterm or early term birth and long-term risk of asthma into midadulthood: a national cohort and cosibling study

Casey Crump[1], Jan Sundquist[2], Kristina Sundquist[2]
Affiliations expand

- PMID: 35907641

- PMCID: PMC9884998 (available on 2024-07-01)

- DOI: 10.1136/thorax-2022-218931

Abstract

Background: Preterm birth is associated with pulmonary complications early in life; however, long-term risks of asthma into adulthood are unclear.

Objective: To determine asthma risks from childhood into adulthood associated with gestational age at birth in a large population-based cohort.

Methods: A national cohort study was conducted of all 4 079 878 singletons born in Sweden during 1973-2013, followed up for asthma identified from primary care, specialty outpatient and inpatient diagnoses in nationwide registries through 2018 (up to 46 years). Cox regression was used to adjust for potential confounders, and cosibling analyses assessed the influence of unmeasured shared familial (genetic and/or environmental) factors.

Results: In 91.9 million person-years of follow-up, 607 760 (14.9%) persons were diagnosed with asthma. Preterm birth was associated with increased risk of asthma at ages <10 years (adjusted HR 1.73; 95% CI 1.70 to 1.75), 10-17 years (1.29; 1.27 to 1.32) and 18-46 years (1.19; 1.17 to 1.22). Across all ages, adjusted HRs further stratified were 3.01 (95% CI 2.88 to 3.15) for extremely preterm (22-27 weeks), 1.76 (1.72 to 1.79) for very or moderately preterm (28-33 weeks), 1.31 (1.29 to 1.32) for late preterm (34-36 weeks) and 1.13 (1.12 to 1.14) for early term (37-38 weeks), compared with full-term (39-41 weeks) birth. These findings were not explained by shared familial factors. Asthma risks were elevated after spontaneous or medically indicated preterm birth and with or without perinatal respiratory complications.

Conclusions: In this large national cohort, preterm and early term birth were associated with increased risks of asthma from childhood into midadulthood. Persons born prematurely need long-term follow-up into adulthood for timely detection and treatment of asthma.

Keywords: asthma; paediatric asthma.

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

MeSH terms, Grant supportexpand

FULL TEXT LINKS

"rhinitis"[MeSH Terms] OR rhinitis[Text Word]

1
Allergy Asthma Clin Immunol
. 2023 Jun 30;19(1):56.
doi: 10.1186/s13223-023-00816-0.

A EUFOREA comment on a lost comorbidity of asthma

Diego M Conti[1], Peter W Hellings[2,3,4,5], Zuzana Diamant[2,6,7,8], Leif Bjermer[6], Milos Jesenak[9], Vibeke Backer[10], Wytske Fokkens[11], Susanne Lau[12], Elizabeth Van Staeyen[13], Glenis K Scadding[14,15]

Affiliations expand

- PMID: 37391838

- PMCID: PMC10314597

- DOI: 10.1186/s13223-023-00816-0

Abstract

"Epidemiology of comorbidities and their association with asthma control" (Tomisa, G., Horváth, A., Sánta, B. et al. Epidemiology of comorbidities and their association with asthma control. Allergy Asthma Clin Immunol 17, 95 (2021). https://doi.org/10.1186/s13223-021-00598-3) is an interesting paper reflecting data collection from more than 12,000 asthmatic patients in Hungary regarding their condition and associated comorbidities. We found it valuable that the paper provides an overview of asthma comorbidities not usually considered in similar reports. Nevertheless, we believe that chronic rhinosinusitis (CRS) with or without nasal polyps (CRSwNP or CRSsNP) should have been listed due to its high incidence and prevalence, its association with asthma which is also endorsed in both GINA and EPOS, as well as in several peer-reviewed scientific papers, and to reflect the role of this comorbidity in poor control and a most severe presentation of asthma for the patient. Consequently, several targeted therapies (especially monoclonal antibodies) used for several years in severe forms of asthma are now indicated also for the effective treatment of nasal polyps.

Keywords: Allergic rhinitis; Asthma; Chronic rhinosinusitis with nasal polyps; Chronic rhinosinusitis without nasal polyps; Comorbidities.

Conflict of interest statement

Diego Conti is the academic manager at EUFOREA. He has no competing interest to declare. Peter Hellings is consultant and recipient of lecture fees and/or research grants from Sanofi, Regeneron, Novartis, GSK, ALK, and Viatris. Zuzana Diamant received in the past three years speaker fees or honoraria or serving on advisory boards or as a consultant from Antabio, Boehringer Ingelheim, Foresee Pharmaceuticals, GlaxoSmithKline, QPS-Netherlands, Sanofi-Genzyme-Regeneron, all outside the submitted work. Leif Bjermer has no competing interest to declare in relation to this work. Milos Jesenak reports receiving consultancy/speaker honoraria from CSL Behring, SOBI, Novartis, GSK, Sanofi, Viatris, and Takeda Pharmaceutical Co. Ltd.; and serving as a principal investigator for clinical trials

sponsored by Takeda, Mundipharma, Octapharma, BioCryst Pharmaceuticals, Inc. and Pharming Group NV. Vibeke Backer has no competing interest to declare in relation to this work. Wytske Fokkens has no competing interest to declare in relation to this work. Susanne Lau has received honoraria for lectures and AD Boards from Sanofi-Aventis, DBV, Allergopharma, ALK, Leti, GSK, and Leo Pharma in the last three years. Elizabeth Van Staeyen is the Scientific Communications & Advocacy Manager at EUFOREA. She has no competing interest to declare. Glenis Scadding is a Board member of EUFOREA. She has received remuneration from Sanofi Regeneron and has undertaken trials for GSK.

- 39 references

SUPPLEMENTARY INFO

Publication typesexpand
Proceed to details
Cite

Share
2
Ann Otol Rhinol Laryngol
.
. 2023 Jun 29;34894231182745.
doi: 10.1177/00034894231182745. Online ahead of print.

Non-protective immunity after standard pneumococcal vaccination series identified as a potential contributing risk factor for refractory otolaryngologic conditions in children

Caroline A Bonaventure[1], Adele K Evans[1,2]
Affiliations expand

- PMID: 37386844

- DOI: 10.1177/00034894231182745

Abstract

Objective: To examine the relationship between conferred immunity after standard pneumococcal series and refractory otolaryngologic infections in pediatric patients using post-vaccination antibody titers, and to identify contributory underlying conditions revealed when vaccination/re-vaccination fails to confer protective immunity.

Study design: IRB-reviewed and "exempt" retrospective case series with chart review using the Epic® Electronic Medical Record system from 2013 to 2021.

Setting: Dedicated tertiary referral children's hospital.

Methods: Pneumococcal antibody titer results were assessed for children ages 0 to 21 years and: (1) at least 1 of 7 otolaryngologic disease diagnoses and (2) having received the 4-dose schedule of pneumococcal conjugate vaccine (PCV 7 or 13).

Results: A total of 241 subjects met inclusion criteria with 356 laboratory tests. Recurrent acute otitis media, chronic rhinitis, and chronic otitis media with effusion were the 3 most frequent diagnoses. At presentation, only 27.0% of subjects had titers conferring immunity from their prior vaccinations with PCV. About 85 subjects had been subsequently revaccinated with Pneumococcal Polysaccharide Vaccine (PPSV), and antibody responses conferring immunity reached 91.8%. Seven subjects never developed adequate responses; 5 of these had recurrent acute otitis media as the primary otolaryngologic diagnosis. Secondary "revealed" diagnoses included Juvenile Rheumatoid Arthritis (n = 1), unresolved specific antibody deficiency (n = 2), and Hypogammaglobulinemia (n = 1).

Conclusion: In pediatric patients with recurrent infectious otolaryngologic disease refractory to traditional medical and surgical therapy, inadequate responses to pneumococcal vaccination may be revealed. This correlation represents a potential pathway for diagnosis and therapy.

Keywords: pneumococcal antibody deficiency; pneumococcal conjugate vaccine; pneumococcal polysaccharide vaccine; recurrent infections; recurrent otitis media; recurrent sinusitis.

J Allergy Clin Immunol Pract

. 2023 Jun 27;S2213-2198(23)00701-8.

doi: 10.1016/j.jaip.2023.06.036. Online ahead of print.

The Art of Dosing for Subcutaneous Immunotherapy in North America

Harold S Nelson[1], Tricia Sowers[2], Greg Plunkett[3], Hendrik Nolte[4], Karen Rance[5]
Affiliations expand

- PMID: 37385447

- DOI: 10.1016/j.jaip.2023.06.036

Abstract

Subcutaneous immunotherapy (SCIT) is a long-established treatment option for allergic rhinoconjunctivitis. Proper dosing of the allergens is critical for the efficacy and safety of SCIT. Of the hundreds of liquid allergen extracts in the US, effective and well tolerated SCIT dosing has only been established for a small number. Thus, SCIT dosing remains largely empirical and continues to be, by necessity, an "art". To highlight the complexity of SCIT dosing, this review summarizes the historical and current landscape of US allergen extracts, differences among US and European allergen extracts, allergen selection for SCIT, considerations for compounding of allergen extract mixtures, and recommended dosing. As of 2021, 18 standardized allergen extracts are available in the US; all other extracts remain unstandardized without characterization of allergen content or potency. US allergen extracts differ from European extracts in formulation and potency characterization. There is no standardized methodology for SCIT allergen selection and interpretation of allergen sensitization is not straightforward. Compounding of SCIT mixtures requires consideration of potential dilution effects, allergen cross-reactivity, proteolytic activity, and additives. Probable effective dose ranges for SCIT are recommended in US allergy immunotherapy practice parameters although there are few studies using US extracts supporting these doses as therapeutic. In contrast, optimized doses of sublingual immunotherapy tablets have been confirmed in North American Phase 3 trials. SCIT dosing for each patient remains an "art" that requires clinical experience and consideration of polysensitization, tolerability, compounding of allergen extract mixtures, and the range of recommended doses within the context of extract potency variability.

Keywords: allergic rhinitis; allergy immunotherapy; dosing; extract; polysensitization; subcutaneous immunotherapy.

Sleep Breath
. 2023 Jun 29.
doi: 10.1007/s11325-023-02857-6. Online ahead of print.

Effect of second-generation antihistamines on nighttime sleep and daytime sleepiness in patients with allergic rhinitis

Teruyuki Sato[1], Youji Tareishi[2], Takahiro Suzuki[3], Nanako Ansai[3], Chikara Asaka[2], Nobuo Ohta[3]
Affiliations expand

- PMID: 37382850

- DOI: 10.1007/s11325-023-02857-6

Abstract

Background: The daytime tiredness experienced by the vast majority of allergic rhinitis (AR) sufferers is directly related to the fact that they experience disrupted sleep at night. This study compared the effects of recently marketed second-generation H1 antihistamines (SGAs) on nighttime sleep and daytime sleepiness in patients with AR, with patients grouped into those taking non-brain-penetrating antihistamines (NBP group) and those taking brain-penetrating antihistamines (BP group).

Methods: Patients with AR completed self-administered questionnaire-based surveys to determine Pittsburgh Sleep Quality Index (PSQI) before and after taking SGAs. Statistical analysis was performed on each evaluation item.

Results: Of 53 Japanese patients with AR between 6 and 78 years old, median (SD) age was 37.0 (22.4) years old and 21 were men (40%). Of the 53 patients, 34 were the NBP group and 19 were the BP group. In the NBP group, mean (SD) subjective sleep quality score after medication was 0.76 (0.50), which was significantly lower (better) than the score of 0.97 (0.52) before medication ($p = 0.020$). In the BP group, mean (SD) subjective sleep quality score after medication was 0.79 (0.54), which was not significantly different from the score of 0.74 (0.56) before medication ($p = 0.564$). In the NBP group, mean (SD) global PSQI score was 3.47 (1.71) after medication, which was significantly lower (better) than the score of 4.35 (1.92) before medication ($p = 0.011$). In the BP group, mean (SD) global PSQI score was 2.47 (2.39) after medication, which was not significantly different from the score of 3.00 (2.71) before medication ($p = 0.125$).

Conclusion: Subjective sleep quality and global PSQI score were improved only in the group taking non-brain-penetrating SGAs.

Keywords: Allergic rhinitis; Daytime sleepiness; Nighttime sleep; Questionnaire self-survey; Second-generation H1 antihistamine; Sleep quality.

- 19 references

Allergy
.
. 2023 Jun 27.
doi: 10.1111/all.15788. Online ahead of print.

Short-course subcutaneous treatment with PQ Grass strongly improves

symptom and medication scores in grass allergy

P J de Kam[1], S Zielen[2], J A Bernstein[3], U Berger[4], M Berger[5], M Cuevas[6], D Cypcar[7], A Fuhr-Horst[8], W A Greisner[9], M Jandl[10], S Laßmann[11], M Worm[12], J Matz[13], E Sher[14], C Smith[15], G C Steven[16], R Mösges[17][18], M H Shamji[19][20], L DuBuske[21], F Borghese[1], K Oluwayi[1], T Zwingers[1], M Seybold[1], O Armfield[1], M D Heath[1], S J Hewings[1], M F Kramer[1], M A Skinner[1]
Affiliations expand

- PMID: 37366581

- DOI: 10.1111/all.15788

Abstract

Background: A modified grass allergen subcutaneous immunotherapy (SCIT) product with MicroCrystalline Tyrosine and monophosphoryl lipid-A as an adjuvant system (Grass MATA MPL [PQ Grass]) is being developed as short-course treatment of grass-pollen allergic rhinitis (SAR) and/or rhinoconjunctivitis. We sought to evaluate the combined symptom and medication score (CSMS) of the optimized cumulative dose of 27,600 standardized units (SU) PQ Grass in a field setting prior to embarking on a pivotal Phase III trial.

Methods: In this exploratory, randomized, double-blind, placebo-controlled trial subjects were enrolled across 14 sites (Germany and the United States of America). Six pre-seasonal subcutaneous injections of PQ Grass (using conventional or extended regimens) or placebo were administered to 119 subjects (aged 18-65 years) with moderate-to-severe SAR with or without asthma that was well-controlled. The primary efficacy endpoint was CSMS during peak grass pollen season (GPS). Secondary endpoints included Rhinoconjunctivitis Quality of Life Questionnaire standardized (RQLQ-S) and allergen-specific IgG4 response.

Results: The mean CSMS compared to placebo was 33.1% ($p = .0325$) and 39.5% ($p = .0112$) for the conventional and extended regimens, respectively. An increase in IgG4 was shown for both regimens ($p < .01$) as well as an improvement in total RQLQ-S for the extended regimen (mean change -0.72, $p = .02$). Both regimens were well-tolerated.

Conclusions: This trial demonstrated a clinically relevant and statistically significant efficacy response to PQ Grass. Unprecedented effect sizes were reached for grass allergy of up to ≈40% compared to placebo for CSMS after only six PQ Grass injections. Both PQ Grass regimens were considered equally safe and well-tolerated. Based on enhanced efficacy profile extended regime will be progressed to the pivotal Phase III trial.

Keywords: allergic rhinoconjunctivitis; grass pollen allergy; short-course treatment; subcutaneous immunotherapy.

- 46 references

SUPPLEMENTARY INFO

Grant supportexpand

FULL TEXT LINKS

WILEY Full Text Article

Proceed to details

Cite

Share

6

Am J Otolaryngol

-
-
-

. 2023 Jul-Aug;44(4):103912.
doi: 10.1016/j.amjoto.2023.103912. Epub 2023 May 4.

The centripetal endoscopic sinus surgery in patients with cystic fibrosis: A preliminary study

Filippo Cascio[1], Francesco Gazia[2], Ferdinando Stagno D'Alcontres[1], Alexandre Wady Debes Felippu[3], Alba Migliorato[4], Giuseppina Rizzo[5], Serenella Palmeri[6], Andrè Wady Debes Felippu[3], Maria Cristina Lucanto[7], Stefano Costa[7], Felice Cascio[1]
Affiliations expand

- PMID: 37167857

- DOI: 10.1016/j.amjoto.2023.103912

Abstract

Objectives: The main aim of this study is to analyze the possible differences between clinical, demographic or genetic characteristics, in Cystic Fibrosis (CF) patients with chronic rhinosinusitis (CRS) with different phenotype. The secondary objective is to describe the possible benefit of surgery with Centripetal Endoscopic Sinus Surgery (CESS).

Methods: The study includes 56 who performed CT scan of the paranasal sinuses. They were divided in 3 group according to phenotype: CRS without Nasal Polyps (NP); CRS with NP; CRS complicated with Mucocele. The clinical symptoms, age, gender, genotype, microbial colonization and pulmonary disease stage were collected and analyzed to assess possible statistically significant differences. Regarding the 7 patients who performed CESS surgery, the number of hospitalizations, intravenous (iv) antibiotic courses, respiratory exacerbations, the FEV1, the Lund-Mackay Score (LMS) and the SNOT 22 were evaluated before and 1 year after surgery.

Results: No statistically significant differences regarding clinical symptoms between the 3 groups were identified ($p > 0.05$). Furthermore, there were no differences in age, gender, genotype, microbial colonization and pulmonary disease stage ($p > 0.05$). Regarding the patients who performed CESS, no significative difference in FEV1 progression was found. A reduction in hospitalization, pulmonary exacerbation and in the number of iv antibiotic courses resulted statistically significant different ($p = 0.004$; <0.001 and <0.001 respectively). A significant improvement in SNOT-22 and LMS ($p < 0.001$) was obtained.

Conclusion: Radiological monitoring of the rhinosinus disease is necessary regardless of the clinical expression of the disease. The presence of CRS with NP complicated by mucocele is frequent and independent of the patient's age and clinical manifestations. An extensive surgical approach could represent the gold standard for patients with CF in consideration of the potential important advantages to perform a total toilet of all the sinuses and nasal cavities and at the same time eliminating a potential microbiological reservoir.

Keywords: CESS; CT scan; Centripetal endoscopic sinus surgery; Chronic Rinosinusitis; Cystic fibrosis; ESS.

Conflict of interest statement

Declaration of competing interest There is no conflict of interest to declare.

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

Clin Otolaryngol
.
. 2023 Jul;48(4):680-688.
doi: 10.1111/coa.14070. Epub 2023 May 2.

Real-world characterisation of patients with chronic rhinosinusitis with nasal polyps with and without surgery in England

Victoria S Benson[1], Qinggong Fu[2], Shibing Yang[2], Ana R Sousa[3], Robert H Chan[3], Peter Howarth[4], Claire Hopkins[5,6]
Affiliations expand

- PMID: 37129235

- DOI: 10.1111/coa.14070

Abstract

Objectives: To characterise the real-world burden of chronic rhinosinusitis with nasal polyps (CRSwNP) in the UK, stratified by number of surgeries.

Design: Retrospective cohort study.

Setting: UK Clinical Practice Research Datalink Aurum database with Hospital Episodes Statistics linkage (2007-2019).

Participants: Adults ≥18 years of age with a first NP diagnosis (index) and 365 days of baseline and ≥180 days of follow-up data. Follow-up continued until disenrollment, death or end of data collection.

Main outcome measures: Primary: primary care physician prescribed CRSwNP-related treatments, and all-cause healthcare resource utilisation (HCRU) in 90 days post-index, stratified by surgeries during follow-up. Secondary: rate of surgery and CRSwNP point prevalence. Baseline patient demographics, clinical characteristics and comorbidities were also assessed.

Results: Of the 33 107 patients included, 23.5% and 2.2% had ≥1 and ≥2 surgeries during follow-up, respectively (mean follow-up: 5.3 years). Patients with more surgeries (≥2/≥1/0) during follow-up were more likely to be male (67.3%/69.0%/58.0%), have asthma (37.8%/28.2%/20.2%) and have baseline blood eosinophil counts ≥300 cells/μL (68.5%/66.0%/51.5%). During the first 90-days post-index as surgery number increased, the proportion of patients using oral corticosteroids (25.8%/20.7%/14.2%) and mean (SD) number of all-cause healthcare visits (5.9 [4.2]/5.4 [4.0]/4.9 [4.2]) increased. Time between surgeries was shorter among patients with more surgeries. CRSwNP prevalence on 31 December 2018 was 476 cases per 100 000 persons.

Conclusion: A small proportion of patients in the UK required multiple surgeries for CRSwNP and this was associated with increasing comorbidity burden, baseline blood eosinophil counts, CRSwNP-related treatment and HCRU use.

Keywords: UK; chronic rhinosinusitis with nasal polyps; healthcare resource utilisation; nasal polyps; nasal surgery; prevalence; retrospective.

- 26 references

SUPPLEMENTARY INFO

MeSH terms, Grant supportexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

8

Review

Allergy
•
•
•
. 2023 Jul;78(7):1794-1809.
doi: 10.1111/all.15731. Epub 2023 Apr 10.

Organ-specific allergen challenges in airway allergy: Current utilities and future directions

J L Fauquert[1], C Alba-Linero[2 3 4], A Gherasim[5], A Testera-Montes[3 6], G Bentabol-Ramos[3 7], R Saenz de Santa Maria-Garcia[3 6], M J Torres[3 4 6], I Eguiluz-Gracia[3 6], C Rondon[3 6]
Affiliations expand

- PMID: 37002709

- DOI: 10.1111/all.15731

Abstract

Atopy has been long used as the screening method for airway allergy. Nevertheless, aeroallergens can trigger respiratory symptoms not only in atopic patients (atopic respiratory allergy, ARA), but also in non-atopic subjects (local respiratory allergy, LRA). Moreover, ARA and LRA can coexist in the same patient, and this clinical scenario has been called dual respiratory allergy (DRA). When the clinical history cannot determine the relevance of sensitizations in ARA patients, nasal, conjunctival or bronchial allergen challenges (NAC, CAC, and BAC, respectively) should be conducted. Moreover, these tests are required to identify patients with LRA and DRA. The clarification of the allergic triggers of airway diseases has a profound impact on the management strategies the patients can be offered. Importantly, allergen immunotherapy (AIT) remains as the only disease-modifying intervention for ARA. Recent data indicate that AIT might have a similar effect on LRA patients. Nevertheless, AIT success relies largely on the correct phenotyping of allergic individuals, and NAC, CAC, and BAC are very helpful tools in this regard. In this review, we will summarize the main indications and methodology of CAC, NAC, and BAC. Importantly, the clinical implementation of these tests might translate into precision medicine approaches and better health outcomes for patients with airway allergy.

Keywords: allergic asthma; allergic rhinitis; bronchial allergen challenge; conjunctival allergen challenge; nasal allergen challenge.

- 123 references

SUPPLEMENTARY INFO

Publication types, Grant supportexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

9

Am J Otolaryngol

-
-
-

. 2023 Jul-Aug;44(4):103858.
doi: 10.1016/j.amjoto.2023.103858. Epub 2023 Mar 22.

Correlation between CT imaging and symptom scores in cystic fibrosis associated chronic sinusitis

Emily Eischen[1], Matthew F Gliksman[2], Daniel Segarra[3], Ryan D Murtagh[4], Lindsey E Ryan[5], Arjun K Parasher[6], Mark H Tabor[7]

Affiliations expand

- PMID: 37001393

- DOI: 10.1016/j.amjoto.2023.103858

Abstract

Purpose: There are limited guidelines for diagnosing and managing chronic rhinosinusitis (CRS) in the cystic fibrosis (CF) population. While CF patients are known to have significant

opacification on paranasal computed tomography (CT), limited evidence suggests that CT findings are not indicative of patients' symptom burden and therefore not a reliable indicator for surgical intervention. This provides a diagnostic challenge for otolaryngologists taking care of this patient population. The purpose of this study is to better define the relationship between objective imaging findings and patients' symptom severity in the CF-CRS population with the goal of providing more selective and effective patient care.

Materials and methods: In this retrospective cohort study, 67 patients with CF CRS had their CT scans scored according to a modified Lund Mackay CT score (LMCTS), which was compared to their Sinonasal Outcome Test scores (SNOT-22). Total SNOT-22 and individual domains were evaluated. Pearson's correlation was performed.

Results: The overall mean SNOT-22 score was 32.3. The mean LMCTS was 17.6. These metrics correlate with relatively low subjective symptom scores in comparison to the high objective presence of sinus disease. While patients had high LMCTS, there was no correlation found between LMCTS and total SNOT-22 or individual SNOT-22 domains.

Conclusions: CT findings in CF CRS patients do not accurately reflect patients' symptom burden and should not be used as a primary driver in the clinical management of these patients.

Keywords: Chronic rhinosinusitis; Cystic fibrosis; Lund Mackay CT score; Paranasal sinus CT; SNOT-22; Sinus disease; Sinus opacification.

Conflict of interest statement

Declaration of competing interest None.

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

. 2023 Jul;78(7):2019-2021.
doi: 10.1111/all.15669. Epub 2023 Feb 21.

Switching from subcutaneous to sublingual immunotherapy during the maintenance phase in patients with house dust mite allergy

Ploykarn Kiatiwat[1,2], Atik Sangasapaviliya[1], Panitan Pradubpongsa[1], Sasipa Sangkanjanavanich[1,3], Chirawat Chiewchalermsri[1,4], Alain Jacquet[5], Nattapol Jaisupa[6], Sarawut Jindarat[6], Tadech Boonpiyathad[1], Wat Mitthamsiri[1]
Affiliations expand

- PMID: 36754574

- DOI: 10.1111/all.15669

No abstract available

Keywords: HDM; SCIT; SLIT tablets; allergen immunotherapy; allergic rhinitis.

- 10 references

SUPPLEMENTARY INFO

Publication types, Grant supportexpand

FULL TEXT LINKS

WILEY Full Text Article
Proceed to details
Cite

Share
11

Randomized Controlled Trial

Am J Rhinol Allergy
.
. 2023 Jul;37(4):384-390.
doi: 10.1177/19458924231154066. Epub 2023 Feb 5.

Doxycycline Improves Quality of Life and Anosmia in Chronic Rhinosinusitis With Nasal Polyposis: A Randomized Controlled Trial

Mohammad Nabavi[1], Saba Arshi[1], Mohammad Hassan Bemanian[1], Morteza Fallahpour[1], Sima Shokri[1], Sofia Sabouri[2], Fatima Moosavian[2], Javad Nazari[1], Vahid Bakrani[1], Fatemeh Atashrazm[1]
Affiliations expand

- PMID: 36740870

- DOI: 10.1177/19458924231154066

Abstract

Background: Chronic rhinosinusitis with nasal polyps (CRSwNP) is a complex disorder and effective treatment remains a major challenge. Some antibiotics with anti-inflammatory properties are reported to have potential to be used as an adjunct therapy in the management of chronic airway inflammation.

Objective: The aim of this study was to evaluate the efficacy of doxycycline in CRSwNP.

Methods: In this randomized, double-blind, placebo-control study, we assessed the efficacy of doxycycline in patients with moderate to severe CRSwNP. A total of 100 patients were randomly assigned to receive either doxycycline (200 mg on the first day followed by 100 mg daily) or placebo for 6 weeks. All patients received baseline therapy with fluticasone, montelukast, and nasal irrigation during the study. The primary outcome was quality of life based on the sino-nasal outcome test (SNOT-22) questionnaire. We measured peak nasal inspiratory flow (PNIF) and severity of symptoms by visual analogue

scale (VAS). Baseline blood eosinophil count, serum IgE level, eosinophil in nasal secretions, and Lund-Mackay score based on low dose paranasal CT scan were also recorded.

Results: Treatment with doxycycline significantly improved SNOT-22 (*P* = .037) and sense of smell (*P* = .048). The baseline SNOT-22 score had no effect on outcomes. The effect of doxycycline on quality of life in patients with or without nasal eosinophilia was not significantly different. Change in SNOT-22 score was also not correlated with serum IgE (*P* = .220, *r* = -0.186) and the eosinophil count (*P* = .190, *r* = -0.198).

Conclusion: Doxycycline improves the quality of life in patients with CRSwNP. It also has temporarily beneficial effects in improving the sense of smell. The levels of eosinophil in the blood and nasal secretions do not affect the response to treatment. Hence, doxycycline can be used in both eosinophilic and non-eosinophilic nasal polyps.This study was registered at Iranian Registry of Clinical Trials. https://www.irct.ir/ IRCTID: IRCT20210403050817N1.

Keywords: SNOT-22; chronic sinusitis; doxycycline; loss of smell; nasal polyps; quality of life.

Am J Rhinol Allergy

. 2023 Jul;37(4):402-409.
doi: 10.1177/19458924231155012. Epub 2023 Feb 5.

CCAD or eCRS: Defining Eosinophilic Subpopulations in Chronic Rhinosinusitis

Andrea Sit[1,2], Raquel Alvarado[1], Peter Earls[1,3], Janet Rimmer[1,4,5], Larry Kalish[1,6,7], Raewyn Campbell[1,8,9], William Sewell[2,10], Richard J Harvey[1,9]
Affiliations expand

- PMID: 36740860

- PMCID: PMC10273859

- DOI: 10.1177/19458924231155012

Free PMC article

Abstract

Background: Central compartment atopic disease (CCAD) and eosinophilic chronic rhinosinusitis (eCRS) are two clinical phenotypes of primary diffuse type 2 chronic rhinosinusitis (CRS) defined in the European Position Paper on Rhinosinusitis 2020 classification. Currently, the distinction between these subtypes relies on phenotypic features alone.

Objective: This study aimed to investigate whether eosinophil activation differed between CCAD and eCRS.

Methods: A cross-sectional study was conducted of adult patients presenting with CCAD and eCRS who had undergone functional endoscopic sinus surgery. Routine pathology results were obtained from clinical records. Eosinophils were counted on haematoxylin and eosin-stained formalin-fixed paraffin-embedded sinonasal tissue. Eotaxin-3, eosinophil peroxidase and immunoglobulin E levels were assessed using immunohistochemistry.

Results: 38 participants were included (51.7 ± 15.6 years, 47.4% female), of whom 36.8% were diagnosed with CCAD and 63.2% with eCRS. The eCRS group was characterised by older age (55.8 ± 16.3 vs 44.5 ± 11.8 years, $p = 0.029$), and on histology exhibited a higher degree of tissue inflammation ($\tau_b = 0.409$, $p = 0.011$), greater proportion of patients with >100 eosinophils/high power field (87.5% vs 50%, $p = 0.011$), and higher absolute tissue eosinophil count (2141 ± 1947 vs 746 ± 519 cells/mm^2, $p = 0.013$). Eotaxin-3 scores were higher in the eCRS group (5.00[5.00-6.00] vs 6.00[6.00-6.75], $p = 0.015$). Other outcomes were similar.

Conclusions: Eosinophil and eotaxin-3 levels were elevated in eCRS compared with CCAD, suggesting a greater degree of eosinophil stimulation and chemotaxis. Patients with CCAD

were younger. Future investigation and biomarkers may better distinguish CRS subpopulations.

Keywords: CCAD; Th2; allergic rhinitis; allergy; central compartment; chronic rhinosinusitis; endotype; eosinophils; inhalant allergy; middle turbinate oedema; phenotype; polyps; type 2.

Conflict of interest statement

The author(s) declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: Richard J Harvey is a consultant/advisory board with Medtronic, Novartis, Glaxo-Smith-Kline and Meda Pharmaceuticals. He has been on the speakers' bureau for Glaxo-Smith-Kline, AstraZeneca, Meda Pharmaceuticals and Seqiris. Janet Rimmer has honoraria with Sanofi Aventis, Novartis, Mundipharma, BioCSL and Stallergenes. Larry Kalish is on the speakers' bureau for Care Pharmaceuticals and Mylan Pharmaceuticals. All other authors have no financial disclosures or conflicts of interest.

Allergol Int
-
-
-
. 2023 Jul;72(3):418-427.
doi: 10.1016/j.alit.2023.01.001. Epub 2023 Feb 3.

Individual multidisciplinary clinical phenotypes of nasal and ocular symptoms in hay fever: Crowdsourced cross-sectional study using AllerSearch

Takenori Inomata[1], Jaemyoung Sung[2], Kenta Fujio[3], Masahiro Nakamura[4], Yasutsugu Akasaki[3], Ken Nagino[5], Yuichi Okumura[3], Masao Iwagami[6], Keiichi Fujimoto[3], Nobuyuki Ebihara[7], Masahiro Nakamura[8], Akie Midorikawa-Inomata[9], Hurramhon Shokirova[10], Tianxiang Huang[3], Kunihiko Hirosawa[3], Maria Miura[3], Mizu Ohno[3], Yuki Morooka[3], Nanami Iwata[3], Yuma Iwasaki[10], Akira Murakami[3]
Affiliations expand

- PMID: 36740498

- DOI: 10.1016/j.alit.2023.01.001

Free article

Abstract

Background: Multidisciplinary efforts to prospectively collect and analyze symptoms of hay fever are limited. We aimed to identify the characteristics of nasal and ocular symptoms of hay fever, using the AllerSearch smartphone application.

Methods: This mobile health-based prospective observational study using the AllerSearch smartphone application was conducted between February 1, 2018, and May 1, 2020. Individuals who downloaded AllerSearch from Japan and provided comprehensive self-assessments (including 17 items related to quality of life [QoL]-related items) were included. The characteristics and risk factors for allergic rhinitis (AR) and allergic conjunctivitis (AC) were identified using hierarchical heat maps and multivariate logistic regression.

Results: Of the 9041 participants with hay fever, 58.8% had AR and AC, 22.2% had AR, and 5.7% had AC. The AR-AC comorbid cohort showed worse symptoms of hay fever and QoL scores than the other cohorts. Factors (odds ratio, 95% confidence interval) associated with AR-AC included a lower age (0.98, 0.97-0.98), female sex (1.31, 1.19-1.45), liver disease (1.58, 1.26-2.35), dry eye disease (1.45, 1.30-1.63), unknown dry eye disease status (1.46, 1.31-1.62), contact lens use discontinuation during the hay fever season (1.69, 1.28-2.23),

and bedroom flooring material other than hardwood, carpet, tatami, or vinyl (1.91, 1.16-3.14).

Conclusions: Analysis of medical big data for hay fever performed using a mobile health app helped identify risk factors and characteristics of AC, AR, and AR-AC. Phenotyping of highly variable symptoms of hay fever, such as nasal and ocular symptoms, can facilitate better-quality clinical care.

Keywords: Allergic conjunctivitis; Allergic rhinitis; Hay fever; Mobile health; Quality of life.

- Cited by 1 article

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

14

Randomized Controlled Trial

Ear Nose Throat J

-
-
-

. 2023 Jul;102(7):445-452.
doi: 10.1177/01455613211015440. Epub 2021 May 10.

Role of Bilateral Inferior Turbinoplasty as an Adjunct to Septoplasty in Improving Nasal Obstruction and Subjective Performance in Patients

With Deviated Nasal Septum Associated With Allergic Rhinitis: An Interventional, Prospective Study

Sanjoy Kumar Ghosh[1], Mainak Dutta[2], Dibakar Haldar[3]
Affiliations expand

- PMID: 33970700

- DOI: 10.1177/01455613211015440

Free article

Abstract

Background: Patients with nasal obstruction due to deviated nasal septum (DNS) often have allergic rhinitis (AR) as contributing factor. When optimal medical therapy for AR fails, septoplasty alone may not adequately treat nasal obstruction. Therefore, with bilateral inferior turbinate hypertrophy representing long-standing AR, adding bilateral inferior turbinoplasty (BIT) to septoplasty might be beneficial.

Objective: To assess whether septoplasty with/without BIT alleviates nasal obstruction in the above patient cohort and whether adding BIT to septoplasty brings significant benefit.

Methodology: In this interventional, prospective study, patients with nasal obstruction due to DNS and persistent, moderate-severe AR refractory to optimal medication were randomly allocated into group A (septoplasty alone) and group B (septoplasty with BIT). Nasal Obstruction and Symptom Evaluation (NOSE) score, along with Subjective Performance parameters (days-off/month; number of outdoor visits/month; overall satisfaction score [OSS]) were used to assess the symptom and quality of life, respectively, at follow-up.

Results: Each group had 40 age/sex-matched patients. Friedman test, and subsequent pair-wise comparison *within groups* without Bonferroni correction, revealed that septoplasty with/without BIT elicited significant reduction in NOSE scores and in the Subjective Performance parameters (days-off/month; number of outdoor visits/month) at 3 and 6 months. Wilcoxon Signed Rank test revealed that the OSS *within groups* also improved significantly with time. Further, comparison *between groups* revealed significant improvement in NOSE scores at all levels of follow-up when BIT was included. However, there were no significant differences *between groups* in the Subjective Performance

parameters at any level of follow-up. Improvement in OSS *between groups* was significant only at 3 months but not subsequently.

Conclusion: Septoplasty with/without BIT is helpful in treating patients with DNS and refractory AR. However, although adding BIT brings significant benefit in decreasing nasal obstruction, it does not significantly improve the Subjective Performance parameters during follow-up, except for OSS at the third month.

Keywords: NOSE score; allergic rhinitis; deviated nasal septum; inferior turbinoplasty; nasal obstruction; septoplasty; subjective performance parameters.

"cough"[MeSH Terms] OR cough[Text Word]

1
Ann Cardiol Angeiol (Paris)
. 2023 Jun 29;72(4):101612.
doi: 10.1016/j.ancard.2023.101612. Online ahead of print.

[Aberrant course of the aneurysmal internal carotid artery revealed by dysphonia and chronic cough : About a case]

[Article in French]

El Kourchi Mehdi[1], El Kassimi Badr[2], Adnor Said[3], Ibnyahia Abderrahman[3], Kharroubi Abdelkarim[4], Wakrim Soukaina[3]
Affiliations expand

- PMID: 37392729

- DOI: 10.1016/j.ancard.2023.101612

Abstract

Aberrant internal carotid artery is a rare birth defect. It occurs when the artery takes an abnormal course, the discovery of which is fortuitous but in the presence of dysphonia or chronic cough; this anomaly remains a diagnosis of exclusion. Cervicothoracic CT scan with injection of contrast product confirms the diagnosis. We report the case of a 64-year-old patient who presented with an aberrant course of an aneurysmal internal carotid artery revealed by dysphonia and chronic cough.

Keywords: Aberrant; Artère carotide interne; Cough; Dysphonia; Internal carotid artery; aberrante; dysphonie; toux.

Conflict of interest statement

Déclaration de liens d'intérêts Les auteurs déclarent ne pas avoir de liens d'intérêts.

SUPPLEMENTARY INFO

Publication typesexpand
Proceed to details
Cite

Share
2

Review

Indian J Pediatr

. 2023 Jun 30.
doi: 10.1007/s12098-023-04665-y. Online ahead of print.

Chronic Suppurative Lung Disease in Children: A Case Based Approach

Kamal Kumar Singhal[1], Robin Singh[2]
Affiliations expand

- PMID: 37389774

- DOI: 10.1007/s12098-023-04665-y

Abstract

Bronchiectasis is a pathologic state of conducting airways manifested radiographically by evidence of bronchial dilation and clinically by chronic productive cough. Considered an "orphan disease" for long, it remains a major contributor to morbidity and mortality in both developed and underdeveloped countries. With the advances in the medical field accompanied by widespread access to vaccines and antibiotics, improved health services and better access to nutrition, the incidences of bronchiectasis have markedly decreased, particularly in developed countries. This review summarizes the current knowledge pertaining to the clinical definition, etiology, clinical approach and management related to pediatric bronchiectasis.

Keywords: Bronchiectasis; CECT chest; Chronic suppurative lung disease; Protracted bacterial bronchitis.

- 48 references

SUPPLEMENTARY INFO

Publication typesexpand
Proceed to details
Cite

Share
3

Review

Respir Care
-
-
-
. 2023 Jul;68(7):939-960.
doi: 10.4187/respcare.10825.

Surgical and Interventional Approaches in COPD

Gerard J Criner[1]
Affiliations expand

- PMID: 37353329

- PMCID: PMC10289622 (available on 2024-07-01)

- DOI: 10.4187/respcare.10825

Abstract

Many patients suffer from complaints of dyspnea, cough, and sputum production, clinical symptoms that hallmark the structural abnormalities that are present in patients with COPD. Although pharmacologic and non-pharmacologic medical therapies help reduce these symptoms, many of these symptoms, especially dyspnea, remain unchecked and contribute to the burden of disease in patients with COPD. Over the last 3 decades, several surgical and interventional treatments delivered via a bronchoscopic approach have been developed to complement medical therapies and show promise to improve patient outcomes. Surgical and interventional treatments target structural abnormalities of the airway and lung parenchyma that can be identified with a combination of imaging and physiological testing, factors that are key to select patients most likely to benefit from these treatments. This paper reviews surgical and bronchoscopic interventional treatment options for patients with emphysema and airways disorders.

Keywords: BLVR; COPD; LVRS; chronic bronchitis; emphysema.

Eur Respir J

-
-
-

. 2023 Jun 29;61(6):2300186.
doi: 10.1183/13993003.00186-2023. Print 2023 Jun.

The effect of beclomethasone–formoterol *versus* placebo on chronic cough in patients with non–CF bronchiectasis: the FORZA randomised controlled trial

Tjeerd van der Veer[1,2,3], Johanna Margaretha de Koning Gans[4,5,3], Gerrit J Braunstahl[4,2], Angelina L P Pieters[6], Johanna M W van den Berg[7], Rogier A S Hoek[4,8], Lieke S J Kamphuis[4], Marleen Bakker[4], Alain V F Dubois[9], Joachim G J V Aerts[4], Menno M van der Eerden[4]
Affiliations expand

- PMID: 37263749

- DOI: 10.1183/13993003.00186-2023

No abstract available

Conflict of interest statement

Conflict of interest: T. van der Veer declares support for the present study from Chiesi Pharmaceuticals (provision of study medication; no payments and no other support provided). J.M. de Koning Gans declares support for the present study from Chiesi Pharmaceuticals (provision of study medication; no payments and no other support provided). G.J. Braunstahl declares grants or contract funds paid to their institution by GlaxoSmithKline, AstraZeneca and Sanofi, consulting fees from Sanofi, GlaxoSmithKline, ALK Abello and AstraZeneca, and payment or honoraria from Chiesi, ALK Abello, GlaxoSmithKline and TEVA, all in the 36 months prior to manuscript submission; and holds unpaid roles as the Chair of the Asthma Section of NVALT and an editorial board member of NTvAAKI. L.S.J. Kamphuis declares payment from Chiesi for developing e-learning materials about non-CF bronchiectasis, in the 36 months prior to manuscript submission. J.G.J.V. Aerts declares payment of speaker's fees from Eli Lilly, Merck Sharp & Dohme and BIOCAD, and participation on data safety monitoring boards or advisory boards for Eli Lilly, Amphera, BIOCAD and Merck Sharp & Dohme, all in the 36 months prior to manuscript submission; in addition, they have patents planned, issued or pending with Pamgene and Amphera, holds stock in Amphera, and also declare board membership of the International Association for the Study of Lung Cancer. M.M. van der Eerden declares support for the present study from Chiesi Pharmaceuticals (provision of study medication; no payments and no other support provided). All other authors declare no competing interests.

SUPPLEMENTARY INFO

Publication typesexpand

Review

Eur Respir Rev

. 2023 May 17;32(168):220219.
doi: 10.1183/16000617.0219-2022. Print 2023 Jun 30.

Efficacy and safety of gefapixant for chronic cough: a meta-analysis of randomised controlled trials

Min-Hsiang Chuang[1,2], I-Wen Chen[3,2], Jen-Yin Chen[4], Fu-Chi Kang[5], Chun-Ning Ho[4], Shao-Chun Wu[6], Ming Yew[4], Kuo-Mao Lan[3], Kuo-Chuan Hung[7,8]
Affiliations expand

- PMID: 37197770
- PMCID: PMC10189640
- DOI: 10.1183/16000617.0219-2022

Free PMC article

Abstract

Background: The efficacy and safety of gefapixant in adults with chronic cough remain unclear. Our objective was to assess the efficacy and safety of gefapixant using updated evidence.

Methods: MEDLINE, Cochrane Central Register of Controlled Trials (CENTRAL) and Embase databases were searched from inception through September 2022. Subgroup analysis based on dose of gefapixant (*i.e.* ≤20, 45-50 and ≥100 mg twice daily for low, moderate and high doses, respectively) was performed to explore a potential dose-dependent effect.

Results: Five studies involving seven trials showed the efficacy of moderate- or high-dose gefapixant for reducing objective 24-h cough frequency (estimated relative reduction 30.9% and 58.5%, respectively) (*i.e.* primary outcome) and awake cough frequency (estimated relative reduction 47.3% and 62.8%, respectively). Night-time cough frequency was only reduced with high-dose gefapixant. Consistently, the use of moderate- or high-dose gefapixant significantly alleviated cough severity and improved cough-related quality of life, but increased the risk of all-cause adverse events (AEs), treatment-related AEs and ageusia/dysgeusia/hypogeusia. Subgroup analysis showed dose dependency in both efficacy and AEs with a cut-off dose being ≥45 mg twice daily.

Conclusions: This meta-analysis revealed dose-dependent efficacy and adverse effects of gefapixant against chronic cough. Further studies are required to investigate the feasibility of moderate-dose (*i.e.* 45-50 mg twice daily) gefapixant in clinical practice.

Conflict of interest statement

Conflict of interest: The authors declare no conflicts of interest.

- 47 references
- 4 figures

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

Review

ERJ Open Res

. 2023 May 2;9(3):00444-2022.
doi: 10.1183/23120541.00444-2022. eCollection 2023 Jul.

Definitions of non-response and response to biological therapy for severe asthma: a systematic review

Ekaterina Khaleva[1], Anna Rattu[1], Chris Brightling[2], Andrew Bush[3], Arnaud Bourdin[4], Apostolos Bossios[5], Kian Fan Chung[6], Rekha Chaudhuri[7], Courtney Coleman[8], Ratko Djukanovic[1 9], Sven-Erik Dahlén[5], Andrew Exley[10], Louise Fleming[6], Stephen J Fowler[11], Atul Gupta[12], Eckard Hamelmann[13], Gerard H Koppelman[14 15], Erik Melén[16], Vera Mahler[17], Paul Seddon[18], Florian Singer[19 20], Celeste Porsbjerg[21], Valeria Ramiconi[22], Franca Rusconi[23], Valentyna Yasinska[5], Graham Roberts[1 9]
Affiliations expand

- PMID: 37143849

- PMCID: PMC10152254

- DOI: 10.1183/23120541.00444-2022

Free PMC article

Abstract

Background: Biologics have proven efficacy for patients with severe asthma but there is lack of consensus on defining response. We systematically reviewed and appraised methodologically developed, defined and evaluated definitions of non-response and response to biologics for severe asthma.

Methods: We searched four bibliographic databases from inception to 15 March 2021. Two reviewers screened references, extracted data, and assessed methodological quality of development, measurement properties of outcome measures and definitions of response based on COnsensus-based Standards for the selection of health Measurement INstruments (COSMIN). A modified GRADE (Grading of Recommendations Assessment, Development and Evaluation) approach and narrative synthesis were undertaken.

Results: 13 studies reported three composite outcome measures, three asthma symptoms measures, one asthma control measure and one quality of life measure. Only four measures were developed with patient input; none were composite measures. Studies utilised 17 definitions of response: 10 out of 17 (58.8%) were based on minimal clinically important difference (MCID) or minimal important difference (MID) and 16 out of 17 (94.1%) had high-quality evidence. Results were limited by poor methodology for the development process and incomplete reporting of psychometric properties. Most measures rated "very low" to "low" for quality of measurement properties and none met all quality standards.

Conclusions: This is the first review to synthesise evidence about definitions of response to biologics for severe asthma. While high-quality definitions are available, most are MCIDs or MIDs, which may be insufficient to justify continuation of biologics in terms of cost-effectiveness. There remains an unmet need for universally accepted, patient-centred, composite definitions to aid clinical decision making and comparability of responses to biologics.

Conflict of interest statement

Conflict of interests: E. Khaleva and A. Rattu declare funding for the present manuscript from the 3TR European Union Innovative Medicines Initiative 2 paid to the university. C. Brightling declares grants from GlaxoSmithKline, AstraZeneca, Novartis, Chiesi, Boehringer Ingelheim, Genentech, Roche, Sanofi, Mologic and 4DPharma, consulting fees from GlaxoSmithKline, AstraZeneca, Novartis, Chiesi, Boehringer Ingelheim, Genentech, Roche, Sanofi, Mologic, 4DPharma and Teva, and support from the 3TR project. A. Bourdin reports being an investigator for clinical trials promoted by AstraZeneca, Chieisi, GlaxoSmithKline, Boehringer Ingelheim, Novartis, Regeneron and Sanofi; having received fees for lectures, attendance of meeting and consultancy from AstraZeneca, Chieisi, GlaxoSmithKline, Boehringer Ingelheim, Novartis, Regeneron and Sanofi; having received research grants from AstraZeneca and Boehringer Ingelheim; and participation on a data safety monitoring or advisory board of AB Science. A. Bossios has received lecture fees from GlaxoSmithKline, AstraZeneca, Teva and Novartis; honoraria for advisory board meetings from GlaxoSmithKline, AstraZeneca, Teva, Novartis and Sanofi; and received support for attending meetings from AstraZeneca and Novartis, all outside the present work; reports being a member of the Steering Committee of SHARP, Secretary of Assembly 5 (Airway Diseases, Asthma, COPD and Chronic Cough) of the European Respiratory Society and Vice-chair of the Nordic Severe Asthma Network (NSAN). K.F. Chung has received honoraria for participating in advisory board meetings of GlaxoSmithKline, AstraZeneca, Roche, Novartis, Merck and Shionogi regarding treatments for asthma, COPD and chronic cough, and has also been renumerated for speaking engagements for Novartis and AstraZeneca. R. Chaudhuri has received lecture fees from GlaxoSmithKline, AstraZeneca, Teva, Chiesi, Sanofi and Novartis; honoraria for advisory board meetings from GlaxoSmithKline, AstraZeneca, Teva, Chiesi and Novartis; sponsorship to attend international scientific meetings from Chiesi, Napp, Sanofi, Boehringer, GlaxoSmithKline and AstraZeneca, and a research grant to her Institute from AstraZeneca for a UK multicentre study. C. Coleman declares funding received to support this work by the European Lung Foundation (ELF) from the European Commission's Innovative Medicines Initiative 2 Joint Undertaking (JU) under grant agreement number 831434 (3TR), and is an employee of the ELF. R. Djukanovic declares funding from European Respiratory Society, Teva, GlaxoSmithKline, Novartis, Sanofi and Chiesi for the SHARP CRC, consulting fees for Synairgen; honorarium for a lecture from GlaxoSmithKline, participation on a data safety monitoring board or advisory board for Kymab (Cambridge) and shares in Synairgen, outside the submitted work. S-E. Dahlen declares funding from 3TR IMI Grant; consulting fees from AstraZeneca, Cayman Co., GlaxoSmithKline, Novartis, Regeneron, Sanofi and Teva; honoraria for lectures from AstraZeneca and Sanofi. A. Exley declares being a minority shareholder in GlaxoSmithKline PLC. L. Fleming declares participation in advisory boards and honoraria for lectures from Sanofi, Respiri UK, AstraZeneca, Novartis and Teva, outside the scope of this publication. All payments were made to her institution. A. Gupta received speaker and advisory board fees from GlaxoSmithKline, Novartis, AstraZeneca and Boehringer Ingelheim. A. Gupta's institution had received research grants from GlaxoSmithKline, Novartis, AstraZeneca and Boehringer Ingelheim. E. Hamelmann declares support from the German Ministry of Education and Research (BMBF) and German Asthma Net (GAN) e.V.; funding for research in severe asthma in children (CHAMP-01GL1742D) and for

Severe Asthma Register. G.H. Koppelman reports receiving research grants from the Lung Foundation of the Netherlands, Ubbo Emmius Foundation, H2020 European Union, Teva, GlaxoSmithKline and Vertex, outside this work (money to institution); he reports memberships of advisory boards to GlaxoSmithKline and PURE-IMS, outside this work (money to institution). E. Melen has received consulting fees from AstraZeneca, Chiesi, Novartis and Sanofi outside the submitted work. V. Mahler has no conflict of interest but declares that the views expressed in this review are the personal views of the author and may not be understood or quoted as being made on behalf of or reflecting the position of the respective national competent authority, the European Medicines Agency, or one of its committees or working parties. F. Singer reports being an investigator for clinical trials promoted by Vertex and having received fees for lectures from Vertex and Novartis, outside the submitted work. C. Porsbjerg declares grants, consulting fees and honoraria from AstraZeneca, GlaxoSmithKline, Novartis, Teva, Sanofi, Chiesi and ALK (paid to institution and personal honoraria); participation in the advisory board for AstraZeneca, Novartis, Teva, Sanofi and ALK, outside the submitted work. V. Ramiconi reports grants paid to EFA from Pfizer, Novartis, AstraZeneca, Sanofi, Chiesi Farmaceutici, Regeneron, DBV Technologies, MSD, GlaxoSmithKline, Aimmune, LeoPharma, AbbVie, Boehringer Ingelheim, OM Pharma and Roche; payment for expert testimony from Novartis Global Respiratory Patient Council 2021 and Novartis EPIS Steering Committee to EFA. G. Roberts declares EU IMI funding and consulting fees from AstraZeneca paid to his institution. No other author has any conflict of interest to declare.

ERJ Open Res

. 2023 May 2;9(3):00712-2022.
doi: 10.1183/23120541.00712-2022. eCollection 2023 Jul.

The Bronchiectasis Exacerbation Diary: a novel patient-reported outcome for non-cystic fibrosis bronchiectasis

Vivian H Shih[1], Maria Jison[2], Erik Bark[3], Meredith Venerus[4], Oren Meyers[4], James D Chalmers[5]

Affiliations expand

- PMID: 37143836

- PMCID: PMC10152244

- DOI: 10.1183/23120541.00712-2022

Free PMC article

Abstract

Bronchiectasis is a chronic, progressive lung disease believed to result from a vicious cycle of infection and inflammation, with symptoms of chronic cough with sputum production, chronic fatigue, rhinosinusitis, chest pain, breathlessness and haemoptysis. There are currently no established instruments to monitor daily symptoms and exacerbations for use in clinical trials. Following a literature review and three expert clinician interviews, we conducted concept elicitation interviews with 20 patients with bronchiectasis to understand their personal disease experience. Findings from literature and clinician feedback were used to develop a draft version of the Bronchiectasis Exacerbation Diary (BED), which was designed to monitor key symptoms on a daily basis and during exacerbations. Patients were eligible to be interviewed if they were US residents aged ≥18 years, had a computed tomography scan-confirmed diagnosis of bronchiectasis with ≥two exacerbations in the previous 2 years and had no other uncontrolled respiratory conditions. Four waves of five patient interviews each were conducted. Patients (n=20) had a mean±$_{SD}$ age of 53.9±12.8 years, and most were female (85%) and white (85%). A total of 33 symptoms and 23 impacts arose from the patient concept elicitation interviews. The BED was revised and finalised based upon patient feedback. The final BED is a novel, eight-item patient-reported outcome (PRO) instrument for monitoring key exacerbation symptoms on a daily basis with content validity established through comprehensive qualitative research and direct patient insight. The BED PRO development framework will be completed following psychometric evaluations of the data from a phase 3 bronchiectasis clinical trial.

Conflict of interest statement

Conflicts of interest: V.H. Shih, M. Jison and E. Bark are employees of AstraZeneca and may own stock. M. Venerus and O. Meyers are employees of IQVIA, which received funding from AstraZeneca to conduct this study. J.D. Chalmers has received research grants from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Gilead Sciences, Novartis, and

Insmed, as well as consultancy or speaker fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Novartis, Insmed, Janssen, and Zambon.

- Cited by 1 article
- 21 references
- 5 figures

FULL TEXT LINKS

"bronchiectasis"[MeSH Terms] OR bronchiectasis[Text Word]

1

Review

Indian J Pediatr

. 2023 Jun 30.
doi: 10.1007/s12098-023-04665-y. Online ahead of print.

Chronic Suppurative Lung Disease in Children: A Case Based Approach

Kamal Kumar Singhal[1], Robin Singh[2]
Affiliations expand

- PMID: 37389774

- DOI: 10.1007/s12098-023-04665-y

Abstract

Bronchiectasis is a pathologic state of conducting airways manifested radiographically by evidence of bronchial dilation and clinically by chronic productive cough. Considered an "orphan disease" for long, it remains a major contributor to morbidity and mortality in both developed and underdeveloped countries. With the advances in the medical field accompanied by widespread access to vaccines and antibiotics, improved health services and better access to nutrition, the incidences of bronchiectasis have markedly decreased, particularly in developed countries. This review summarizes the current knowledge pertaining to the clinical definition, etiology, clinical approach and management related to pediatric bronchiectasis.

Keywords: Bronchiectasis; CECT chest; Chronic suppurative lung disease; Protracted bacterial bronchitis.

- 48 references

SUPPLEMENTARY INFO

Publication typesexpand
Proceed to details
Cite

Share
2

Editorial

Eur Respir J

-
-
-

. 2023 Jun 29;61(6):2300769.
doi: 10.1183/13993003.00769-2023. Print 2023 Jun.

Transforming clinical research and science in bronchiectasis: EMBARC3, a European Respiratory Society Clinical Research Collaboration

James D Chalmers[1], Stefano Aliberti[2,3], Josje Altenburg[4], Francesco Blasi[5,6], Clare Clarke[7], Sanjay H Chotirmall[8,9], Megan L Crichton[7], Raja Dhar[10], Pieter Goeminne[11], Charles

Haworth[12], Michael R Loebinger[13], Natalie Lorent[14,15], Eva Polverino[16], Felix C Ringshausen[17,18,19], Amelia Shoemark[7,13], Michal Shteinberg[20], Oriol Sibila[21], Arietta Spinou[22], Tobias Welte[17,18,19]
Affiliations expand

- PMID: 37385653

- DOI: 10.1183/13993003.00769-2023

No abstract available

Conflict of interest statement

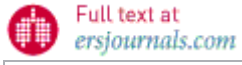
Conflict of interest: J.D. Chalmers reports grants or contracts from Grifols, consulting fees from Antabio, AstraZeneca, Boehringer Ingelheim, Chiesi, Glaxosmithkline, Grifols, Insmed, Janssen, Novartis, Pfizer and Zambon, and leadership or fiduciary roles as Chair of European Respiratory Society (ERS) Bronchiectasis Guideline Task Force, Chief Editor of the European Respiratory Journal, and Chair of EMBARC Clinical Research Collaboration. S. Aliberti reports grants or contracts from Insmed, Chiesi and Fisher & Paykel (paid to institution), royalties or licenses with McGraw Hill, consulting fees from Insmed Incorporated, Insmed Italy, Insmed Ireland, Zambon, AstraZeneca UK, AstraZeneca Pharmaceutical, CSL Behring, Grifols, Fondazione Charta, Boehringer Ingelheim, Chiesi Farmaceutici Spa, Zcube, Menarini, MSD Italia, Physioassist SAS and GlaxoSmithKline Spa, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from GlaxoSmithKline Spa, Thermofisher Scientific, Insmed Italy, Insmed Ireland, Zambon and Fondazione Internazionale Menarini, and participation on a data safety monitoring board or advisory board for Insmed Incorporated, Insmed Italy, AstraZeneca UK Limited and MSD Italia. J. Altenburg reports no conflicts of interest. F. Blasi reports grants or contracts from AstraZeneca, Chiesi, GSK and Insmed; consulting fees from GSK, Menarini and OM Pharma; and payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from AstraZeneca, Chiesi, GSK, Grifols, Insmed, Menarini, Novartis, Ompharma, Pfizer, Sanofi, Vertex, Viatris and Zambon. C. Clarke reports no conflicts of interest. S.H. Chotirmall reports consultancy for Boehringer Ingelheim and Pneumogen, and payment or honoraria from AstraZeneca, Chiesi and Inovio. M.L. Crichton reports no conflicts of interest. R. Dhar reports grants or contracts from Cipla. P. Goeminne reports payment or honoraria for lectures, presentations or educational events from GSK, MSD and Chiesi. C. Haworth reports grants or contracts from the National Institute for Health and Care Research (paid to institution), consulting fees from 30 Technology, CSL Behring, Chiesi, Insmed, Janssen, LifeArc, Meiji, Mylan, Novartis, Pneumagen, Shionogi and Zambon, and payment or honoraria for lectures, presentations, speakers. bureaus, manuscript writing, or educational events from Zambon, Insmed, Chiesi and 30 Technology. M.R. Loebinger reports consulting fees from Armata, 30T, AstraZeneca, Parion, Insmed, Chiesi, Zambon, Electromed, Recode, AN2 and Savara, payment or

honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from Insmed, and a role as the ERS Infection Group chair. N. Lorent reports speaker fees or consultancy for Insmed and GSK. E. Polverino reports grants or contracts from Grifols, consulting fees from Bayer, Zambon, Pfizer, Chiesi, Shire, Shionogi, Insmed, Moderna and Pfizer, payment for expert testimony from Chiesi, leadership or fiduciary roles on the ERS Task Force For Bronchiectasis Guidelines and as co-chair of EMBARC, and receipt of equipment, materials, drugs, medical writing, gifts, or other services from Zambon. F.C. Ringshausen reports grants or contracts from German Center for Lung Research (DZL), German Center for Infection Research (EU and European Federation of Pharmaceutical Industries and Associations; EFPIA), iABC Consortium (including Alaxia, Basilea, Novartis and Polyphor), Mukoviszidose Institute, Novartis, Insmed Germany, Grifols, Bayer and InfectoPharm (paid to institution), consulting fees from Parion, Grifols, Zambon, Insmed and Helmholtz-Zentrum für Infektionsforschung, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from I!DE Werbeagentur, Interkongress, AstraZeneca, Insmed, Grifols, and Universitätsklinikum Frankfurt am Main, payment for expert testimony from Social Court Cologne (paid to institution), support for attending meetings or travel from German Kartagener Syndrome and PCD PAG, and Mukoviszidose, participation on a data safety monitoring board or advisory board for Insmed, Grifols and Shionogi, leadership or fiduciary role in other board, society, committee, or advocacy groups as Coordinator of the ERN-LUNG Bronchiectasis Core Network, Chair of the German Bronchiectasis Registry PROGNOSIS, Member of the Steering Committee of the European Bronchiectasis Registry EMBARC, Co-Speaker of the Medical Advisory Board of the German Kartagener Syndrome and PCD PAG, Speaker of the Respiratory Infections and tuberculosis group of the German Respiratory Society (DGP), Speaker of the Cystic Fibrosis group of DGP, Prinicipal Investigator for DZL, Member of the Protocol Review Committee of the PCD-CTN, and Member of Physician Association of the German Cystic Fibrosis PAG, and fees for clinical trial participation (paid to institution) from AstraZeneca, Boehringer Ingelheim, Celtaxsys, Corbus, Insmed, Novartis, Parion, University of Dundee, Vertex and Zambon. A. Shoemark reports research grants from AstraZeneca. M. Shteinberg reports grants or contracts from GSK and Trudell pharma, consulting fees from AstraZeneca, Boehringer Ingelheim, Dexcel, Kamada, Synchrony Medical, Trumed and Zambon, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from AstraZeneca, Boehringer Ingelheim and Kamada, support for attending meetings or travel from Boehringer Ingelheim, AstraZeneca and Kamada, participation on a data safety monitoring board or advisory board for Bonus Biotherapeutics, Boehringer Ingelheim and AstraZeneca, leadership or fiduciary role in other board, society, committee, or advocacy groups with Israeli Pulmonology Society, Israeli Society for Tuberculosis and Mycobacterial Diseases, EMBARC as unpaid management board member, and ERJ and Chest as unpaid editorial board member, and receipt of equipment, materials, drugs, medical writing, gifts or other services from Trudell Medical International. O. Sibila reports no conflicts of interest. A. Spinou reports no conflicts of interest. T. Welte reports grants or contracts from German Ministry of Research and Education, and consulting fees from AstraZeneca, GSK and Insmed.

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS



Proceed to details

Cite

Share

3

Respir Med

. 2023 Jun 27;107330.
doi: 10.1016/j.rmed.2023.107330. Online ahead of print.

Abnormalities on baseline chest imaging are risk factors for immune checkpoint inhibitor associated pneumonitis

Danielle Stahlbaum[1], Renea Jablonski[2], Mary E Strek[3], Christine M Bestvina[4], Mei-Yin Polley[5], Pankti Reid[6]

Affiliations expand

- PMID: 37385460

- DOI: 10.1016/j.rmed.2023.107330

Abstract

Background: Chronic lung disease is a proposed risk factor for immune checkpoint inhibitor pneumonitis (ICI-pneumonitis); however, data is sparse regarding the impact of pre-existing lung disease and baseline chest imaging abnormalities on the risk of developing ICI-pneumonitis.

Methods: We conducted a retrospective cohort study of patients with ICI treatment for cancer from 2015 to 2019. ICI-pneumonitis was determined by the treating physician with corroboration via an independent physician review and exclusion of alternative etiologies. Controls were patients treated with ICI without a diagnosis of ICI-pneumonitis. Fisher's exact tests, Student's t-tests, and logistic regression were used for statistical analysis.

Results: We analyzed 45 cases of ICI-pneumonitis and 135 controls. Patients with abnormal baseline chest CT imaging (emphysema; bronchiectasis; reticular, ground glass and/or consolidative opacities) had increased risk for ICI-pneumonitis (OR 3.41, 95%CI: 1.68-6.87, p = 0.001). Patients with gastroesophageal reflux disease (GERD) (OR 3.83, 95%CI: 1.90-7.70, p = < 0.0001) also had increased risk for ICI-pneumonitis. On multivariable logistic regression, patients with abnormal baseline chest imaging and/or GERD remained at increased risk for ICI-pneumonitis. Eighteen percent of all patients (32/180) had abnormal baseline chest CT consistent with chronic lung disease without a documented diagnosis.

Conclusion: Patients with baseline chest CT abnormalities and GERD were at increased risk for developing ICI-pneumonitis. The large proportion of patients with baseline radiographic abnormalities without a clinical diagnosis of chronic lung disease highlights the importance of multidisciplinary evaluation prior to ICI initiation.

Keywords: Cancer immunotherapy; Immune checkpoint inhibitor pneumonitis; Immune related adverse events; Pneumonitis.

Conflict of interest statement

Declaration of competing interest There is no conflict of interest.

ERJ Open Res

. 2023 Jun 26;9(3):00156-2023.

doi: 10.1183/23120541.00156-2023. eCollection 2023 May.

Pseudomonas aeruginosa population genomics among adults with bronchiectasis across Germany

Ilona Rosenboom[1,2], Sibel Oguz[1], Idalina M Lüdemann[1,2], Felix C Ringshausen[2,3,4,5], Jessica Rademacher[3,4], Ludwig Sedlacek[6], Burkhard Tümmler[1,2,4], Nina Cramer[1,2]
Affiliations expand

- PMID: 37377651

- PMCID: PMC10291309

- DOI: 10.1183/23120541.00156-2023

Free PMC article

Abstract

Genome sequencing of 130 *Pseudomonas aeruginosa* isolates from 110 bronchiectasis patients identified a few dominant clones common in the global bacterial population and numerous rare clones infrequently seen in the environment or other human infections https://bit.ly/3IlfD2X.

Conflict of interest statement

Conflict of interest: I. Rosenboom, S. Oguz, I. M. Lüdemann, J. Rademacher, L. Sedlacek and N. Cramer have nothing to disclose. Conflict of interest: F.C. Ringshausen declares grants to their institution from the German Center for Lung Research (DZL), the German Center for Infection Research (DZIF), IMI (EU/EFPIA), iABC Consortium (including Alaxia, Basilea, Novartis and Polyphor), Mukoviszidose Institute, Novartis, Insmed Germany, Grifols, Bayer and InfectoPharm; consulting fees from Parion, Grifols, Zambon, Insmed and the Helmholtz-Zentrum für Infektionsforschung; payments or honoraria from I!DE Werbeagentur GmbH, Interkongress GmbH, AstraZeneca, Insmed, Grifols and Universitätsklinikum Frankfurt am Main; payment to their institution for expert testimony at the Social Court Cologne; support for attending meetings from German Kartagener Syndrome and PCD PAG and Mukoviszidose e.V; participation on a data safety monitoring

or advisory board for Insmed, Grifols and Shionogi; fees for clinical trial participation paid to their institution by AstraZeneca, Boehringer Ingelheim, Celtaxsys, Corbus, Insmed, Novartis, Parion, University of Dundee, Vertex and Zambon; and honorary roles as Coordinator of the ERN-LUNG Bronchiectasis Core Network, Chair of the German Bronchiectasis Registry PROGNOSIS, Member of the SteerCo of the European Bronchiectasis Registry EMBARC, Member of the SteerCo of the European NTM Registry EMBARC-NTM, Co-Speaker of the Medical Advisory Board of the German Kartagener Syndrome and PCD PAG, Speaker of the Respiratory Infections and TB group of the German Respiratory Society (DGP), Speaker of the Cystic Fibrosis group of German Respiratory Society (DGP), PI of the DZL, member of the protocol review committee of the PCD-CTN and Member of Physician Association of the German Cystic Fibrosis PAG. Conflict of interest: B. Tümmler reports grants from the German Centre for Infection Research (DZIF), the German Center for Lung Research (DZL), the German Research Foundation (DFG); and consulting fees from Helmholtz Institute for Infection Research (HZI); payments or honoraria from Vertex Pharmaceuticals (Germany) Inc.

BMC Infect Dis

. 2023 Jun 27;23(1):436.
doi: 10.1186/s12879-023-08386-7.

Computed tomography findings in patients with pulmonary tuberculosis and diabetes at an infectious disease hospital in China: a retrospective cross-sectional study

Qianwen Yang[#1], Rongping Zhang[#2], Yan Gao[2], Chaoxin Zhou[2], Weifang Kong[3], Wang Tao[2], Guojin Zhang[4], Lan Shang[5]
Affiliations expand

- PMID: 37370020

- PMCID: PMC10304231

- DOI: 10.1186/s12879-023-08386-7

Free PMC article

Abstract

Background: This study aimed to investigate the relationship between active pulmonary tuberculosis (TB) and type 2 diabetes mellitus (T2DM) by analysing the clinical features and computed tomography (CT) findings of patients with active pulmonary TB and comorbid T2DM (TB-DM) in the LiangShan Yi regions.

Methods: We collected data from 154 hospitalised patients with TB-DM initially confirmed at an infectious disease hospital in the Liangshan Yi Autonomous Prefecture between 1 and 2019, and 31 December 2021. These were matched by sex and age ± 3 years to 145 hospitalised patients with initially confirmed pulmonary TB without comorbid T2DM (TB-NDM) over the same period. The clinical characteristics of the two groups were analysed separately. Three group-blinded radiologists independently analysed the CT findings and classified them into mild-to-moderate and severe groups. Severe chest CT lesion refers to a lesion that is less diffused or moderately dense and either exceeds the total volume of one lung, a high-density fused lesion greater than one-third of the volume of one lung, or a cavitary lesion with a maximum diameter ≥ 4 cm.

Results: No significant differences were observed in the presentation of clinical features. Regarding the severity of chest CT manifestation, patients with TB-DM had significantly more severe TB than those with TB-NDM (89.61% vs. 68.97%, $P < 0.0001$). Regarding CT findings, patients with TB-DM had higher proportions of consolidation (79.22% vs. 52.41%, $P < 0.0001$), cavitary lesions (85.06% vs. 59.31%, $P < 0.0001$), bronchiectasis (71.43% vs. 31.03%, $P < 0.0001$), exudative lesions (88.96% vs. 68.28%, $P < 0.0001$), and fibrous lesions (93.51% vs. 68.97%, $P < 0.0001$) than patients with TB-NDM. In conclusion, patients with TB-DM have more severe pulmonary TB CT findings than those without. There were no significant differences in the distribution of lesions in the lung lobes between TB-DM and TB-NDM patients.

Conclusions: Among patients hospitalised with pulmonary TB, those with T2DM had more severe findings on chest CT than those without T2DM. However, the clinical presentation was not significantly different.

Keywords: China; Computed tomography; Infectious disease; Tuberculosis; Type 2 diabetes mellitus.

Conflict of interest statement

The authors declare no competing interests.

- 30 references
- 3 figures

SUPPLEMENTARY INFO

MeSH terms, Grant supportexpand

FULL TEXT LINKS

Case Reports

Respirol Case Rep
.
.
.
. 2023 Jun 12;11(7):e01172.
doi: 10.1002/rcr2.1172. eCollection 2023 Jul.

Cystic fibrosis modulator therapy can reverse cystic bronchiectasis

Peter G Middleton[1,2], Nicholas J Simmonds[3,4]
Affiliations expand

- PMID: 37323158
- PMCID: PMC10261305
- DOI: 10.1002/rcr2.1172

Free PMC article

Abstract

Bronchiectasis is often considered progressive and irreversible, so cases of regression or reversal are an important step in understanding the underlying pathophysiological mechanisms. Cystic fibrosis, (CF) caused by pathogenic variants in the *cystic fibrosis transmembrane conductance regulator* (*CFTR*) gene has been a success story in personalized medicine. The recent development of *CFTR* modulator therapies has revolutionized care. Dramatic improvements in lung function, sputum production, daytime functioning, and quality of life are seen within weeks. However, the effect of long-term exposure to elexacaftor + tezacaftor + ivacaftor (ETI) on the structural abnormalities is at present unknown. This case series outlines three adults with CF who have demonstrated progressive improvement in the cylindrical, varicose and importantly cystic changes of bronchiectasis with prolonged ETI treatment. This raises the exciting question of reversibility of bronchiectasis as well as the mechanisms involved in the maintenance and progression of bronchiectasis as it relates to CF.

Keywords: bronchiectasis; cystic fibrosis; elexacaftor; ivacaftor; tezacaftor.

Conflict of interest statement

Peter Middleton reports grants from Vertex Pharmaceuticals, during the conduct of the study; personal fees from Vertex Pharmaceuticals, outside the submitted work. Nicholas Simmonds reports personal fees from Vertex Pharmaceuticals, Chiesi, Gilead, Menarini, Zambon, outside the submitted work.

- 15 references
- 3 figures

SUPPLEMENTARY INFO

Eur Respir Rev

. 2023 Jun 7;32(168):230015.
doi: 10.1183/16000617.0015-2023. Print 2023 Jun 30.

Basic, translational and clinical aspects of bronchiectasis in adults

James D Chalmers[1], Stuart Elborn[2], Catherine M Greene[3]
Affiliations expand

- PMID: 37286220
- PMCID: PMC10245133
- DOI: 10.1183/16000617.0015-2023

Free PMC article

Abstract

Bronchiectasis is a common progressive respiratory disease with recognisable radiological abnormalities and a clinical syndrome of cough, sputum production and recurrent respiratory infections. Inflammatory cell infiltration into the lung, in particular neutrophils, is central to the pathophysiology of bronchiectasis. Herein we explore the roles and relationships between infection, inflammation and mucociliary clearance dysfunction in the establishment and progression of bronchiectasis. Microbial and host-mediated damage are

important processes underpinning bronchiectasis and the relative contribution of proteases, cytokines and inflammatory mediators to the propagation of inflammation is presented. We also discuss the emerging concept of inflammatory endotypes, defined by the presence of neutrophilic and eosinophilic inflammation, and explore the role of inflammation as a treatable trait. Current treatment for bronchiectasis focuses on treatment of underlying causes, enhancing mucociliary clearance, controlling infection and preventing and treating complications. Data on airway clearance approaches *via* exercise and mucoactive drugs, pharmacotherapy with macrolides to decrease exacerbations and the usefulness of inhaled antibiotics and bronchodilators are discussed, finishing with a look to the future where new therapies targeting host-mediated immune dysfunction hold promise.

Conflict of interest statement

Conflict of interest: J.D. Chalmers reports grants or contracts from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Gilead Sciences, Grifols, Novartis and Insmed, outside the submitted work; consulting fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Insmed, Janssen, Novartis, Pfizer and Zambon, outside the submitted work. Conflict of interest: S. Elborn holds a joint public–private grant from the European commission in the innovative medicines initiative with Novartis AG and Spexsis; he worked as a paid consultant for Vertex Pharmaceuticals and Viatris Inc.; and has been a paid speaker for many pharmaceutical companies over 30 years in respiratory medicine. Conflict of interest: C.M. Greene reports grants or contracts from NIH and Vertex, outside the submitted work; payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from Vertex, outside the submitted work; support for attending meetings and/or travel from European Respiratory Society, outside the submitted work; and was Head of ERS Assembly 3 2019–2022, outside the submitted work.

- 106 references
- 2 figures

8
Eur Respir J
.
. 2023 Jun 29;61(6):2300186.
doi: 10.1183/13993003.00186-2023. Print 2023 Jun.

The effect of beclomethasone-formoterol *versus* placebo on chronic cough in patients with non-CF bronchiectasis: the FORZA randomised controlled trial

Tjeerd van der Veer[1,2,3], Johanna Margaretha de Koning Gans[4,5,3], Gerrit J Braunstahl[4,2], Angelina L P Pieters[6], Johanna M W van den Berg[7], Rogier A S Hoek[4,8], Lieke S J Kamphuis[4], Marleen Bakker[4], Alain V F Dubois[9], Joachim G J V Aerts[4], Menno M van der Eerden[4]
Affiliations expand

- PMID: 37263749

- DOI: 10.1183/13993003.00186-2023

No abstract available

Conflict of interest statement

Conflict of interest: T. van der Veer declares support for the present study from Chiesi Pharmaceuticals (provision of study medication; no payments and no other support provided). J.M. de Koning Gans declares support for the present study from Chiesi Pharmaceuticals (provision of study medication; no payments and no other support provided). G.J. Braunstahl declares grants or contract funds paid to their institution by GlaxoSmithKline, AstraZeneca and Sanofi, consulting fees from Sanofi, GlaxoSmithKline, ALK Abello and AstraZeneca, and payment or honoraria from Chiesi, ALK Abello, GlaxoSmithKline and TEVA, all in the 36 months prior to manuscript submission; and holds unpaid roles as the Chair of the Asthma Section of NVALT and an editorial board member of NTvAAKI. L.S.J. Kamphuis declares payment from Chiesi for developing e-learning

materials about non-CF bronchiectasis, in the 36 months prior to manuscript submission. J.G.J.V. Aerts declares payment of speaker's fees from Eli Lilly, Merck Sharp & Dohme and BIOCAD, and participation on data safety monitoring boards or advisory boards for Eli Lilly, Amphera, BIOCAD and Merck Sharp & Dohme, all in the 36 months prior to manuscript submission; in addition, they have patents planned, issued or pending with Pamgene and Amphera, holds stock in Amphera, and also declare board membership of the International Association for the Study of Lung Cancer. M.M. van der Eerden declares support for the present study from Chiesi Pharmaceuticals (provision of study medication; no payments and no other support provided). All other authors declare no competing interests.

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Editorial

ERJ Open Res
. 2023 May 2;9(3):00087-2023.
doi: 10.1183/23120541.00087-2023. eCollection 2023 Jul.

The BED-Pro Tool: facilitating the detection of bronchiectasis exacerbations

Yong-Hua Gao[1,2], Wei-Jie Guan[3,4]
Affiliations expand

- PMID: 37143843

- PMCID: PMC10152263

- DOI: 10.1183/23120541.00087-2023

Free PMC article

Abstract

The Bronchiectasis Exacerbation Diary is an eight-item patient-reported outcome instrument for detecting exacerbations in bronchiectasis https://bit.ly/3k2IH4p.

Conflict of interest statement

Conflict of interest: W-j. Guan is an associate editor of this journal. Y-h. Gao has nothing to disclose.

- 12 references

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

10

ERJ Open Res

-
-
-

. 2023 May 2;9(3):00712-2022.
doi: 10.1183/23120541.00712-2022. eCollection 2023 Jul.

The Bronchiectasis Exacerbation Diary: a novel patient-reported outcome for non-cystic fibrosis bronchiectasis

Vivian H Shih[1], Maria Jison[2], Erik Bark[3], Meredith Venerus[4], Oren Meyers[4], James D Chalmers[5]
Affiliations expand

- PMID: 37143836
- PMCID: PMC10152244
- DOI: 10.1183/23120541.00712-2022

Free PMC article

Abstract

Bronchiectasis is a chronic, progressive lung disease believed to result from a vicious cycle of infection and inflammation, with symptoms of chronic cough with sputum production, chronic fatigue, rhinosinusitis, chest pain, breathlessness and haemoptysis. There are currently no established instruments to monitor daily symptoms and exacerbations for use in clinical trials. Following a literature review and three expert clinician interviews, we conducted concept elicitation interviews with 20 patients with bronchiectasis to understand their personal disease experience. Findings from literature and clinician feedback were used to develop a draft version of the Bronchiectasis Exacerbation Diary (BED), which was designed to monitor key symptoms on a daily basis and during exacerbations. Patients were eligible to be interviewed if they were US residents aged ≥18 years, had a computed tomography scan-confirmed diagnosis of bronchiectasis with ≥two exacerbations in the previous 2 years and had no other uncontrolled respiratory conditions. Four waves of five patient interviews each were conducted. Patients (n=20) had a mean±$_{SD}$ age of 53.9±12.8 years, and most were female (85%) and white (85%). A total of 33 symptoms and 23 impacts arose from the patient concept elicitation interviews. The BED was revised and finalised based upon patient feedback. The final BED is a novel, eight-item patient-reported outcome (PRO) instrument for monitoring key exacerbation symptoms on a daily basis with content validity established through comprehensive qualitative research and direct patient insight. The BED PRO development framework will

be completed following psychometric evaluations of the data from a phase 3 bronchiectasis clinical trial.

Conflict of interest statement

Conflicts of interest: V.H. Shih, M. Jison and E. Bark are employees of AstraZeneca and may own stock. M. Venerus and O. Meyers are employees of IQVIA, which received funding from AstraZeneca to conduct this study. J.D. Chalmers has received research grants from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Gilead Sciences, Novartis, and Insmed, as well as consultancy or speaker fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Novartis, Insmed, Janssen, and Zambon.

ERJ Open Res

. 2023 May 2;9(3):00695-2022.
doi: 10.1183/23120541.00695-2022. eCollection 2023 Jul.

Benefit–risk assessment of brensocatib for treatment of non–cystic fibrosis bronchiectasis

James D Chalmers[1], Mark L Metersky[2], Joseph Feliciano[3], Carlos Fernandez[3], Ariel Teper[3], Andrea Maes[3], Mariam Hassan[3], Anjan Chatterjee[3]
Affiliations expand

- PMID: 37143828

- PMCID: PMC10152260

- DOI: 10.1183/23120541.00695-2022

Free PMC article

Abstract

Brensocatib is a novel anti-inflammatory therapy in development for bronchiectasis treatment. Phase 2 WILLOW trial data demonstrate a low number needed to treat and negative number needed to harm, suggesting a favourable benefit-risk profile. https://bit.ly/3SbisW3.

Conflict of interest statement

Conflict of interest: J.D. Chalmers has received grants and personal fees from AstraZeneca, Boehringer Ingelheim, GSK, Zambon and Insmed Incorporated; a grant from Gilead; and personal fees from Novartis and Chiesi within the past 24 months. He is an associate editor of this journal. Conflict of interest: M.L. Metersky has received consulting fees from Insmed Incorporated, Boehringer Ingelheim, California Institute for Biomedical Research and Zambon; and his institution has received clinical trial support from Insmed Incorporated. Conflict of interest: J. Feliciano, C. Fernandez, A. Teper, A. Maes, M. Hassan and A. Chatterjee are employed by Insmed Incorporated.

- 10 references

FULL TEXT LINKS

Proceed to details
Cite

Share
12
Editorial

Am J Med Sci

. 2023 Jul;366(1):1-2.
doi: 10.1016/j.amjms.2023.04.013. Epub 2023 Apr 22.

Community-acquired pneumonia and bronchiectasis: a dangerous combination?

Luis Coelho[1], Ana Pais[2]
Affiliations expand

- PMID: 37094632

- DOI: 10.1016/j.amjms.2023.04.013

No abstract available

Conflict of interest statement

Declaration of Competing Interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

doi: 10.1016/j.amjms.2023.04.001. Epub 2023 Apr 10.

Outcomes of hospitalized patients with COPD exacerbation with bronchiectasis compared to COPD exacerbation and bronchiectasis exacerbation patients

Saqib H Baig[1], Michael J Stephen[2]
Affiliations expand

- PMID: 37040828

- DOI: 10.1016/j.amjms.2023.04.001

No abstract available

Conflict of interest statement

Declaration of Competing Interests No conflict of interests for all authors.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

J Infect Chemother

-
-
-

. 2023 Jul;29(7):688-692.
doi: 10.1016/j.jiac.2023.03.019. Epub 2023 Apr 1.

Factors associated with acid-fast bacillus isolation in patients with noncystic fibrosis bronchiectasis: A cross-sectional study

Yukiko Takeno[1], Kosaku Komiya[2], Eri Mizukami[3], Kazufumi Hiramatsu[4], Jun-Ichi Kadota[5]
Affiliations expand

- PMID: 37011836

- DOI: 10.1016/j.jiac.2023.03.019

Abstract

Introduction: Acid-fast bacillus (AFB) is a major pathogen that causes noncystic fibrosis bronchiectasis requiring multidrug chemotherapy. Bronchoscopic bronchial wash is performed to determine the causative pathogens of bronchiectasis; but, predictive factors for AFB isolation have not been fully elucidated. This study aimed to determine the factors associated with AFB isolation from bronchial wash samples.

Methods: This was a single-center, cross-sectional study. Patients undergoing bronchoscopic bronchial wash for bronchiectasis were included, whereas those who did not undergo high-resolution computed tomography (HRCT); had acute pneumonia, interstitial lung disease, and a positive polymerase chain reaction result but a negative culture result for AFB; or in whom a guide sheath was used for suspected lung cancer were excluded. Binomial logistic regression was used to analyze the factors associated with a positive culture for AFB.

Results: Of the 96 included cases, AFB isolation was observed in the bronchial wash fluid of 26 patients (27%). No smoking history, a positive result for antiglycopeptidolipid (GPL)-core IgA antibody, and the presence of tree-in-bud appearance, multiple granular and nodular images on HRCT were more commonly observed in patients with AFB isolation than in those without. In the multivariate analysis, the tree-in-bud appearance (odds ratio, 4.223; 95% CI, 1.046-17.052) and anti-GPL core IgA antibody (odds ratio, 9.443; 95% CI, 2.206-40.421) were significantly associated with AFB isolation.

Conclusions: The tree-in-bud appearance on HRCT is likely to predict AFB isolation independent of anti-GPL core IgA antibody results. Bronchoscopic bronchial wash should be recommended for bronchiectasis with multiple granulomas on HRCT.

Keywords: Acid-fast bacillus; Bronchial wash; Bronchiectasis.

Conflict of interest statement

Declaration of competing interest All authors have stated explicitly that they have no conflicts of interest in connection with this article.

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS