LIBRA JOURNAL CLUB
7-14 JAN-2024

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])

BMC Health Serv Res

. 2024 Jan 13;24(1):69.

doi: 10.1186/s12913-023-10496-6.

Post-hospitalization remote monitoring for patients with heart failure or chronic obstructive pulmonary disease in an accountable care organization

Samantha Harris[1], Kayla Paynter[2], Megan Guinn[3], Julie Fox[3], Nathan Moore[3], Thomas M Maddox[2], Patrick G Lyons[4]

Affiliations expand

- PMID: 38218820

- DOI: 10.1186/s12913-023-10496-6

Abstract

Background: Post-hospitalization remote patient monitoring (RPM) has potential to improve health outcomes for high-risk patients with chronic medical conditions. The purpose of this study is to determine the extent to which RPM for patients with congestive heart failure (CHF) and chronic obstructive pulmonary disease (COPD) is associated with reductions in post-hospitalization mortality, hospital readmission, and ED visits within an Accountable Care Organization (ACO).

Methods: Nonrandomized prospective study of patients in an ACO offered enrollment in RPM upon hospital discharge between February 2021 and December 2021. RPM comprised of vital sign monitoring equipment (blood pressure monitor, scale, pulse oximeter), tablet device with symptom tracking software and educational material, and nurse-provided oversight and triage. Expected enrollment was for at least 30-days of monitoring, and outcomes were followed for 6 months following enrollment. The co-primary outcomes were (a) the composite of death, hospital admission, or emergency care visit within 180 days of eligibility, and (b) time to occurrence of this composite. Secondary outcomes were each component individually, the composite of death or hospital admission, and outpatient office visits. Adjusted analyses involved doubly robust estimation to address confounding by indication.

Results: Of 361 patients offered remote monitoring (251 with CHF and 110 with COPD), 140 elected to enroll (106 with CHF and 34 with COPD). The median duration of RPM-enrollment was 54 days (IQR 34-85). Neither the 6-month frequency of the co-primary composite outcome (59% vs 66%, FDR p-value = 0.47) nor the time to this composite (median 29 vs 38 days, FDR p-value = 0.60) differed between the groups, but 6-month mortality was lower in the RPM group (6.4% vs 17%, FDR p-value = 0.02). After adjustment for confounders, RPM enrollment was associated with nonsignificantly decreased odds for the composite outcome (adjusted OR [aOR] 0.68, 99% CI 0.25-1.34, FDR p-value 0.30) and lower 6-month mortality (aOR 0.41, 99% CI 0.00-0.86, FDR p-value 0.20).

Conclusions: RPM enrollment may be associated with improved health outcomes, including 6-month mortality, for selected patient populations.

Keywords: Accountable care organization; Innovation; Remote patient monitoring.

- 38 references

full text links

Proceed to details

Cite

2

Eur Radiol

. 2024 Jan 12.

doi: 10.1007/s00330-023-10502-9. Online ahead of print.

CT-based whole lung radiomics nomogram: a tool for identifying the risk of cardiovascular disease in patients with chronic obstructive pulmonary disease

XiaoQing Lin[1,2], TaoHu Zhou[1,3], Jiong Ni[4], Jie Li[1,2], Yu Guan[1], Xin'ang Jiang[1], Xiuxiu Zhou[1], Yi Xia[1], Fangyi Xu[5], Hongjie Hu[5], Qian Dong[6], Shiyuan Liu[1], Li Fan[7]

Affiliations expand

- PMID: 38216755

- DOI: 10.1007/s00330-023-10502-9

Abstract

Objectives: To evaluate the value of CT-based whole lung radiomics nomogram for identifying the risk of cardiovascular disease (CVD) in patients with chronic obstructive pulmonary disease (COPD).

Materials and methods: A total of 974 patients with COPD were divided into a training cohort (n = 402), an internal validation cohort (n = 172), and an external validation cohort (n = 400) from three hospitals. Clinical data and CT findings were analyzed. Radiomics features of whole lung were extracted from the non-contrast chest CT images. A radiomics signature was constructed with algorithms. Combined with the radiomics score and independent clinical factors, multivariate logistic regression analysis was used to establish a

radiomics nomogram. ROC curve was used to analyze the prediction performance of the model.

Results: Age, weight, and GOLD were the independent clinical factors. A total of 1218 features were extracted and reduced to 15 features to build the radiomics signature. In the training cohort, the combined model (area under the curve [AUC], 0.731) showed better discrimination capability ($p < 0.001$) than the clinical factors model (AUC, 0.605). In the internal validation cohort, the combined model (AUC, 0.727) performed better ($p = 0.032$) than the clinical factors model (AUC, 0.629). In the external validation cohort, the combined model (AUC, 0.725) performed better ($p < 0.001$) than the clinical factors model (AUC, 0.690). Decision curve analysis demonstrated the radiomics nomogram outperformed the clinical factors model.

Conclusion: The CT-based whole lung radiomics nomogram has the potential to identify the risk of CVD in patients with COPD.

Clinical relevance statement: This study helps to identify cardiovascular disease risk in patients with chronic obstructive pulmonary disease on chest CT scans.

Key points: • To investigate the value of CT-based whole lung radiomics features in identifying the risk of cardiovascular disease in chronic obstructive pulmonary disease patients. • The radiomics nomogram showed better performance than the clinical factors model to identify the risk of cardiovascular disease in patients with chronic obstructive pulmonary disease. • The radiomics nomogram demonstrated excellent performance in the training, internal validation, and external validation cohort (AUC, 0.731; AUC, 0.727; AUC, 0.725).

Keywords: Cardiovascular disease; Chronic obstructive pulmonary disease; Computed tomography; Radiomics.

- 35 references

full text links

Proceed to details

Cite

Share

3

Sci Rep

. 2024 Jan 11;14(1):1057.

doi: 10.1038/s41598-024-51465-1.

Diagnostic yield of viral multiplex PCR during acute exacerbation of COPD admitted to the intensive care unit: a pilot study

Costa Salachas[1], Cherifa Gounane[1], Gaëtan Beduneau[2], Julien Lopinto[1], Matthieu Turpin[1], Corinne Amiel[3], Antoine Cuvelier[4], Marie Gueudin[5], Guillaume Voiriot[1 6], Muriel Fartoukh[7 8]

Affiliations expand

- PMID: 38212620
- PMCID: PMC10784589
- DOI: 10.1038/s41598-024-51465-1

Abstract

Acute exacerbation of chronic obstructive pulmonary disease (AECOPD) is one of the leading causes of admission to the intensive care unit, often triggered by a respiratory tract infection of bacterial or viral aetiology. Managing antibiotic therapy in this context remains a challenge. Respiratory panel molecular tests allow identifying viral aetiologies of AECOPD. We hypothesized that the systematic use of a respiratory multiplex PCR (mPCR) would help antibiotics saving in severe AECOPD. Our objectives were to describe the spectrum of infectious aetiologies of severe AECOPD, using a diagnostic approach combining conventional diagnostic tests and mPCR, and to measure antibiotics exposure. The study was bicentric, prospective, observational, and included 105 critically ill patients with a severe AECOPD of presumed infectious aetiology, in whom a respiratory mPCR with a viral panel was performed in addition to conventional microbiological tests. Altogether, the microbiological documentation rate was 50%, including bacteria alone (19%), respiratory viruses alone (16%), and mixed viruses and bacterial species (16%). The duration of antibiotic therapy was shorter in patients without documented bacterial infection (5.6 vs. 9 days; P = 0.0006). This pilot study suggests that molecular tests may

help for the proper use of anti-infective treatments in critically ill patients with severe AECOPD.

Conflict of interest statement

BioMérieux graciously provided the multiplex kits. Muriel Fartoukh reports grants from La Fondation du Souffle, and personal fees from Pfizer, Fisher & Paykel, and BioMérieux, outside the submitted work. Guillaume Voiriot reports grants from BioMérieux outside the submitted work and travel expense coverage from SOS oxygène. Gaëtan Beduneau reports congress fees by MSD. Matthieu Turpin reports grants from SOS oxygène outside the submitted work for training and research. The other authors declare that they have no conflicts of interest.

- 21 references
- 1 figure

4

Qual Life Res

. 2024 Jan 11.

doi: 10.1007/s11136-023-03582-z. Online ahead of print.

Associations between the EQ-5D-5L and exacerbations of chronic

obstructive pulmonary disease in the ETHOS trial

Dan Jackson[1], Martin Jenkins[2], Enrico de Nigris[3], Debasree Purkayastha[2], Mehul Patel[2], Mario Ouwens[4]

Affiliations expand

- PMID: 38206455

- DOI: 10.1007/s11136-023-03582-z

Abstract

Purpose: Exacerbations of chronic obstructive pulmonary disease (COPD) are associated with deteriorating health and health-related quality of life (HRQoL) among people with COPD during and after events. HRQoL data are key to evaluating treatment cost-effectiveness and informing reimbursement decisions in COPD. EuroQoL 5-dimension 5-level (EQ-5D-5L) utility scores, based on various HRQoL measures, are used in economic evaluations of pharmacotherapy. These analyses estimated associations between EQ-5D-5L utility scores and exacerbations (new and previous) in patients with moderate-to-very severe COPD.

Methods: Longitudinal mixed models for repeated measures (MMRM), adjusted for time and treatment, were conducted using data from the ETHOS study (NCT02465567); models regressed EQ-5D-5L on current and past exacerbations that occurred during the study, adjusting for other patient reported outcomes and clinical factors.

Results: Based on the simplest covariate adjusted model (adjusted for current exacerbations and number of previous exacerbations during the study), a current moderate exacerbation was associated with an EQ-5D-5L disutility of 0.055 (95% confidence interval: 0.048, 0.062) with an additional disutility of 0.035 (0.014, 0.055) if the exacerbation was severe. After resolving, each prior exacerbation was associated with a disutility that persisted for the remainder of the study (moderate exacerbation, 0.014 [0.011, 0.016]; further disutility for severe exacerbation, 0.011 [0.003, 0.018]).

Conclusion: An EQ-5D-5L disutility of 0.090 was associated with a current severe exacerbation in ETHOS. Our findings suggest incorporating the effects of current, recently resolved, and cumulative exacerbations into economic models when estimating benefits and costs of COPD pharmacotherapy, as exacerbations have both acute and persistent effects.

Keywords: Chronic obstructive pulmonary disease (COPD); EuroQoL 5-dimension 5-level (EQ-5D-5L) questionnaire; Modeling; Quality of life.

- 28 references

full text links

Proceed to details

Cite

Share

5

Editorial

Curr Med Chem

-
-
-

. 2024 Jan 10.

doi: 10.2174/0109298673289734231228105444. Online ahead of print.

Exploring the Role of Nitric Oxide in Lower Airway Diseases: Insights and Real-world Application

Pasquale Ambrosino[1], Mauro Maniscalco[2], Giuseppina Marcuccio[2,3]

Affiliations expand

- PMID: 38204227

- DOI: 10.2174/0109298673289734231228105444

No abstract available

Keywords: asthma; biomarkers; copd; disability; nitric oxide; outcome.

6

Respir Med

. 2024 Jan 8:222:107527.

doi: 10.1016/j.rmed.2024.107527. Online ahead of print.

Tiotropium reduces clinically important deterioration in patients with mild-to-moderate chronic obstructive pulmonary disease: A post hoc analysis of the Tie-COPD study

Fan Wu[1], Cuiqiong Dai[2], Yumin Zhou[1], Zhishan Deng[2], Zihui Wang[2], Xiaochen Li[2], Shuyun Chen[2], Weijie Guan[2], Nanshan Zhong[1], Pixin Ran[3]

Affiliations expand

- PMID: 38199288

- DOI: 10.1016/j.rmed.2024.107527

Abstract

Background: Clinically important deterioration (CID) is a composite endpoint used to holistically assess the complex progression of chronic obstructive pulmonary disease (COPD). Tiotropium improves lung function and reduces the rate of COPD exacerbations in patients with COPD of Global Initiative for Chronic Obstructive Lung Disease (GOLD) stage 1 (mild) or 2 (moderate). However, whether tiotropium reduces CID risk in patients with mild-to-moderate COPD remains unclear.

Methods: This was a post hoc analysis of the 24-month Tie-COPD study comparing 18 μg tiotropium with placebo in patients with mild-to-moderate COPD. CID was defined as a decrease of ≥100 mL in trough forced expiratory volume in 1 s, an increase of ≥2 unit in COPD Assessment Test (CAT) score, or moderate-to-severe exacerbation. The time to the first occurrence of one of these events was recorded as the time to the first CID. Subgroup analyses were conducted among patients stratified by CAT score, modified Medical Research Council (mMRC) dyspnea score, and GOLD stage at baseline.

Results: Of the 841 randomized patients, 771 were included in the full analysis set. Overall, 643 patients (83.4 %) experienced at least one CID event. Tiotropium significantly reduced the CID risk and delayed the time to first CID compared with placebo (adjusted hazard ratio = 0.58, 95 % confidence interval = 0.49-0.68, P < 0.001). Significant reductions in CID risk were also observed in various subgroups, including patients with a CAT score <10, mMRC score <2, and mild COPD.

Conclusions: Tiotropium reduced CID risk in patients with mild-to-moderate COPD, even in patients with fewer respiratory symptoms or mild disease, which highlights tiotropium's effectiveness in treating COPD patients with mild disease.

Trial registration: This study is registered at ClinicalTrials.gov (Tie-COPD, NCT01455129).

Keywords: Chronic obstructive pulmonary disease; Clinically important deterioration; Mild-to-moderate; Tiotropium.

Conflict of interest statement

Declaration of competing interest Authors have no competing interests. There are no financial relationships between our research team and any organizations that might have an interest in the submitted work. Other relationships or activities that might influence the submitted work was excluded throughout the study.

supplementary info

Associated dataexpand

full text links

7

Arq Bras Cardiol

. 2024 Jan 8;120(12):e20230408.

doi: 10.36660/abc.20230408. eCollection 2024.

The Six Pillars of Lifestyle Medicine in Managing Noncommunicable Diseases – The Gaps in Current Guidelines

[Article in Portuguese, English]

Rafaella Rogatto de Faria[1,2], Sergio Freitas de Siqueira[1,3], Francisco Aguerre Haddad[1,4], Gustavo Del Monte Silva[1,4], Caio Vitale Spaggiari[3], Martino Martinelli Filho[1,3]

Affiliations expand

- PMID: 38198361
- PMCID: PMC10735241
- DOI: 10.36660/abc.20230408

Free PMC article

Abstract

in English, Portuguese

Background: Noncommunicable diseases (NCDs), also known as chronic diseases that are long-lasting, are considered the major cause of death and disability worldwide, and the six

pillars of lifestyle medicine (nutrition, exercise, toxic control, stress management, restorative sleep, and social connection) play an important role in a holistic management of their prevention and treatment. In addition, medical guidelines are the most accepted documents with recommendations to manage NCDs.

Objective: The present study aims to analyze the lack of lifestyle pillars concerning the major Brazilian medical guidelines for NCDs and identify evidence in the literature that could justify their inclusion in the documents.

Method: Brazilian guidelines were selected according to the most relevant causes of death in Brazil, given by the Mortality Information System, published by the Brazilian Ministry of Health in 2019. Journals were screened in the PUBMED library according to the disease and non-mentioned pillars of lifestyle.

Results: Relevant causes of deaths in Brazil are acute myocardial infarction (AMI), diabetes mellitus (DM), and chronic obstructive pulmonary diseases (COPD). Six guidelines related to these NCDs were identified, and all address aspects of lifestyle, but only one, regarding cardiovascular prevention, highlights all six pillars. Despite this, a literature search involving over 50 articles showed that there is evidence that all the pillars can help control each of these NCDs.

Conclusion: Rarely are the six pillars of lifestyle contemplated in Brazilian guidelines for AMI, DM, and COPD. The literature review identified evidence of all lifestyle pillars to offer a holistic approach for the management and prevention of NCDs.

Conflict of interest statement

Potencial conflito de interesse
Não há conflito com o presente artigo

- 81 references
- 2 figures

supplementary info

MeSH termsexpand

full text links

Proceed to details

Cite

8

Nat Med

-
-
-

. 2024 Jan 9.

doi: 10.1038/s41591-023-02743-4. Online ahead of print.

Health effects associated with exposure to secondhand smoke: a Burden of Proof study

Luisa S Flor[1,2], Jason A Anderson[3], Noah Ahmad[3], Aleksandr Aravkin[3,4], Sinclair Carr[3], Xiaochen Dai[3], Gabriela F Gil[3,5], Simon I Hay[3,4], Matthew J Malloy[3], Susan A McLaughlin[3], Erin C Mullany[3], Christopher J L Murray[3,4], Erin M O'Connell[3], Chukwuma Okereke[3], Reed J D Sorenson[3], Joanna Whisnant[3], Peng Zheng[3,4], Emmanuela Gakidou[3,4]

Affiliations expand

- PMID: 38195750

- DOI: 10.1038/s41591-023-02743-4

Abstract

Despite a gradual decline in smoking rates over time, exposure to secondhand smoke (SHS) continues to cause harm to nonsmokers, who are disproportionately children and women living in low- and middle-income countries. We comprehensively reviewed the literature published by July 2022 concerning the adverse impacts of SHS exposure on nine health outcomes. Following, we quantified each exposure-response association accounting for various sources of uncertainty and evaluated the strength of the evidence supporting our analyses using the Burden of Proof Risk Function methodology. We found all nine health outcomes to be associated with SHS exposure. We conservatively estimated that SHS increases the risk of ischemic heart disease, stroke, type 2 diabetes and lung cancer by at least around 8%, 5%, 1% and 1%, respectively, with the evidence supporting these harmful associations rated as weak (two stars). The evidence supporting the harmful associations between SHS and otitis media, asthma, lower respiratory infections, breast cancer and chronic obstructive pulmonary disease was weaker (one star). Despite the weak

underlying evidence for these associations, our results reinforce the harmful effects of SHS on health and the need to prioritize advancing efforts to reduce active and passive smoking through a combination of public health policies and education initiatives.

- 470 references

full text links

Proceed to details

Cite

Share

9

Thorax

. 2024 Jan 9:thorax-2023-220972.

doi: 10.1136/thorax-2023-220972. Online ahead of print.

Type-2 inflammation and lung function decline in chronic airway disease in the general population

Yunus Çolak[1 2 3], Shoaib Afzal[2 3 4], Jacob Louis Marott[5], Jørgen Vestbo[6], Børge Grønne Nordestgaard[2 3 4 5], Peter Lange[7 2 3 5 8]

Affiliations expand

- PMID: 38195642

- DOI: 10.1136/thorax-2023-220972

Abstract

Background: It is unclear if type-2 inflammation is associated with accelerated lung function decline in individuals with asthma and chronic obstructive pulmonary disease (COPD). We tested the hypothesis that type-2 inflammation indicated by elevated blood eosinophils (BE) and fraction of exhaled nitric oxide (FeNO) is associated with accelerated lung function decline in the general population.

Methods: We included adults from the Copenhagen General Population Study with measurements of BE (N=15 605) and FeNO (N=2583) from a follow-up examination and assessed forced expiratory volume in 1 s (FEV_1) decline in the preceding 10 years. Based on pre- and post-bronchodilator lung function, smoking history and asthma at follow-up examination, participants were assigned as not having airway disease, asthma with full reversibility (AR), asthma with persistent obstruction (APO), COPD, and not classifiable airflow limitation (NAL).

Results: FEV_1 decline in mL/year increased with 1.0 (95% CI 0.6 to 1.4, p<0.0001) per 100 cells/µL higher BE and with 3.2 (95% CI 2.0 to 4.5, p<0.0001) per 10 ppb higher FeNO. Adjusted FEV_1 decline in mL/year was 18 (95% CI 17 to 20) in those with BE<300 cells/µL and FeNO<20 ppb, 22 (19-25) in BE≥300 cells/µL or FeNO≥20 ppb, and 27 (21-33) in those with BE≥300 cells/µL and FeNO≥20 ppb (p for trend<0.0001). Corresponding FEV_1 declines were 24 (19-29), 33 (25-40) and 44 (31-56) in AR (0.002), 26 (14-37), 36 (12-60) and 56 (24-89) in APO (0.07), 32 (27-36), 31 (24-38) and 44 (24-65) in COPD (0.46), and 27 (21-33), 35 (26-45), and 37 (25-49) in NAL (0.10), respectively.

Conclusions: Type-2 inflammation indicated by elevated BE and FeNO is associated with accelerated FEV_1 decline in individuals with chronic airway disease in the general population, and this association was most pronounced in an asthma-like phenotype.

Keywords: Asthma Epidemiology; Asthma Mechanisms; COPD Pathology; COPD epidemiology; Clinical Epidemiology.

Conflict of interest statement

Competing interests: YÇ reports grants from Sanofi and personal fees from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline and Sanofi outside the submitted work. JV reports personal fees from ALK, AstraZeneca, Boehringer-Ingelheim, Chiesi, GlaxoSmithKline and Teva outside the submitted work. PL reports grants and personal fees from AstraZeneca and Sanofi and personal fees from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, and Sanofi outside the submitted work. SA, JLM and BGN have nothing to disclose.

10

Cardiovasc Ultrasound

. 2024 Jan 10;22(1):2.

doi: 10.1186/s12947-023-00322-8.

Evaluation of atherosclerosis as a risk factor in COPD patients by measuring the carotid intima-media thickness

Ali Firincioglulari[1], Hakan Erturk[2], Mujgan Firincioglulari[3], Cigdem Biber[4]

Affiliations expand

- PMID: 38195448
- PMCID: PMC10777512
- DOI: 10.1186/s12947-023-00322-8

Free PMC article

Abstract

Background: This study aimed to evaluate atherosclerosis as comorbidity by measuring the carotid (bulb and common carotid artery) Carotid intima-media thickness in COPD-diagnosed patients and to evaluate the relationship of atherosclerosis with the prevalence of COPD, hypoxemia and hypercapnia.

Methods: This study was conducted out between January 2019-December 2019 consisting of a total of 140 participants (70 COPD-diagnosed patients-70 healthy individuals). The

COPD-diagnosed patients have been planned according to the selection and diagnosis criteria as per the GOLD 2019 guide. It is planned to evaluate as per prospective matching case-control study of the carotid thickness, radial gas analysis, spirometric and demographic characteristics of COPD diagnosed patients and healthy individuals.

Results: The average Carotid intima-media thickness in COPD patients was 0.8746±0.161 ($p<0.05$), and the thickness of the carotid bulb was 1.04±0.150 ($p<0.05$). In the control group, the average CCA intima-media thickness was 0.6650±0.139 ($p<0.05$), and the thickness of the carotid bulb was 0.8250±0.15($p<0.05$) For the carotid thickness that has increased in COPD diagnosed patients a significant relationship is determined between hypoxemia ($p<0.05$) and hypercapnia($p<0.05$). A significant relationship determined between CIMT and severity of COPD ($p<0.05$) The CIMT was high in COPD patients with hypoxemia and hypercapnia($p<0.05$).

Conclusion: Significant difference was determined between the severity (grades) of COPD (mild, moderate, severe, very severe) in carotid thickness. Also, CIMT was found to be high in patients who is in the early phases of the prevalence of COPD. In COPD-diagnosed patients, it was determined that severity of COPD, hypoxemia, hypercapnia and age were determining factors of atherosclerosis.

Keywords: Atherosclerosis; CIMT; COPD; Carotid Bulbus; Stroke.

Conflict of interest statement

The authors declare no competing interests.

- 64 references
- 2 figures

supplementary info

MeSH termsexpand

full text links

Proceed to details

Cite

11

Pulm Ther

.
. 2024 Jan 9.

doi: 10.1007/s41030-023-00249-5. Online ahead of print.

Aerosol Plumes of Inhalers Used in COPD

Herbert Wachtel[1], Rachel Emerson-Stadler[2], Peter Langguth[3], Jens M Hohlfeld[4 5 6], Jill Ohar[7]

Affiliations expand

- PMID: 38194194

- DOI: 10.1007/s41030-023-00249-5

Free article

Abstract

Introduction: The selection of inhaler device is of critical importance in chronic obstructive pulmonary disease (COPD) as the interaction between a patient's inhalation profile and the aerosol characteristics of an inhaler can affect drug delivery and lung deposition. This study assessed the in vitro aerosol characteristics of inhaler devices approved for the treatment of COPD, including a soft mist inhaler (SMI), pressurized metered-dose inhalers (pMDIs), and dry powder inhalers (DPIs).

Methods: High-speed video recording was used to visualize and measure aerosol velocity and spray duration for nine different inhalers (one SMI, three pMDIs, and five DPIs), each containing dual or triple fixed-dose combinations of long-acting muscarinic receptor antagonists and long-acting β_2-agonists, with or without an inhaled corticosteroid. Measurements were taken in triplicate at experimental flow rates of 30, 60, and 90 l/min. Optimal flow rates were defined based on pharmacopoeial testing requirements: 30 l/min for pMDIs and SMIs, and the rate achieving a 4-kPa pressure drop against internal inhaler resistance for DPIs. Comparison of aerosol plumes was based on the experimental flow rates closest to the optimal flow rates.

Results: The Respimat SMI had the slowest plume velocity (0.99 m/s) and longest spray duration (1447 ms) compared with pMDIs (velocity: 3.65-5.09 m/s; duration: 227-270 ms) and DPIs (velocity: 1.43-4.60 m/s; duration: 60-757 ms). With increasing flow rates, SMI aerosol duration was unaffected, but velocity increased (maximum 2.63 m/s), pMDI aerosol velocity and duration were unaffected, and DPI aerosol velocity tended to increase, with a more variable impact on duration.

Conclusions: Aerosol characteristics (velocity and duration of aerosol plume) vary by inhaler type. Plume velocity was lower and spray duration longer for the SMI compared with pMDIs and DPIs. Increasing experimental flow rate was associated with faster plume velocity for DPIs and the SMI, with no or variable impact on plume duration, whereas pMDI aerosol velocity and duration were unaffected by increasing flow rate.

Keywords: Aerosol; Chronic obstructive pulmonary disease; Dry powder inhaler; Inhalation therapy; Inhaler; Pressurized metered-dose inhaler; Respiratory medicine; Soft mist inhaler.

- 59 references

12

Am J Respir Crit Care Med

. 2024 Jan 8.

doi: 10.1164/rccm.202312-2248ED. Online ahead of print.

Bronchodilator Responsiveness in Asthma and COPD: Time to Stop Chasing Shadows

David M G Halpin[1][2]

Affiliations expand

- PMID: 38190497

- DOI: 10.1164/rccm.202312-2248ED

No abstract available

Keywords: Asthma; Bronchodilator response; COPD; Diagnosis.

13

J Clin Sleep Med

-
-
-

. 2024 Jan 8.

doi: 10.5664/jcsm.11000. Online ahead of print.

The overlap of chronic obstructive pulmonary disease and obstructive sleep apnea in hospitalizations for acute exacerbation of COPD

Justin Rafael O De la Fuente[1], Patricia Greenberg[2], Jag Sunderram[3]

Affiliations expand

- PMID: 38189375

- DOI: 10.5664/jcsm.11000

Abstract

Study objectives: This study examined in-hospital outcomes for patients with both chronic obstructive pulmonary disease (COPD) and obstructive sleep apnea (OSA), also known as COPD-OSA overlap syndrome, during hospitalizations for acute exacerbation of COPD (AECOPD).

Methods: The National Inpatient Sample was used to examine in-hospital mortality, length of stay, costs, and utilization of supportive ventilation in patients with COPD-OSA overlap during AECOPD hospitalizations. A one-to-one matched case-control design was utilized to match patients with and without OSA. Multivariate logistic regression modeling was used to examine mortality and ventilatory support, while controlling for potentially confounding diagnoses.

Results: COPD-OSA overlap was associated with longer median length of stay (4 days OSA, 3 days non-OSA; $P<0.001$), higher mean costs ($32,197 OSA, $29,011 non-OSA; $P<0.001$), increased utilization of non-invasive positive pressure ventilation (NIPPV) (13.92% OSA, 6.78% non-OSA; $P<0.001$), and when required for greater than 96 hours, earlier initiation of mechanical ventilation (2.53 days OSA, 3.35 days non-OSA; $P=0.001$). However, COPD-OSA overlap was associated with reduced mortality (0.81% OSA, 1.05% non-OSA; $P<0.001$). These differences in mortality (adjusted OR: 0.650; 95% CI 0.624 - 0.678) and NIPPV usage (adjusted OR: 1.998; 95% CI 1.970 - 2.026) remained when adjusted for confounders.

Conclusions: Patients with COPD-OSA overlap have higher utilization of supportive ventilation and longer length of stay during AECOPD hospitalizations, contributing to higher costs. The diagnosis of OSA is associated with reduced mortality in these hospitalizations, which may be related to greater utilization of supportive ventilation when OSA is recognized.

Keywords: COPD; COPD exacerbations; OSA; inpatient outcomes; overlap syndrome.

14

Med Clin (Barc)

.

. 2024 Jan 12;162(1):9-14.

doi: 10.1016/j.medcli.2023.07.032. Epub 2023 Oct 7.

Chronic obstructive pulmonary disease mortality in Spain between 1999 and 2019

[Article in English, Spanish]

Gema Ramírez-Rodríguez[1], Antonio Menéndez-Lobo[2], Alejandro Romero-Linares[3], Miriam Bernabéu-Fernández de Liencres[2], Pedro Jose Romero-Palacios[2], Bernardino Alcázar-Navarrete[4]; "Spanish COPD mortality study group"

Collaborators, Affiliations expand

- PMID: 37813726

- DOI: 10.1016/j.medcli.2023.07.032

Abstract

Introduction: Mortality from COPD has decreased in Spain in recent years, but it is unknown whether this decline has been homogeneous among the different regions.

Methods: From the Statistical Portal of the Ministry of Health of Spain we obtained the age-adjusted mortality rates/100,000 inhabitants for men and women in Spain and the Autonomous Communities for the years 1999-2019, using the coding of the International Classification of Diseases (ICD 10, sections J40-J44). With the adjusted rates we performed a jointpoint regression analysis to estimate an annual percentage change (APC), as well as identify possible points of trend change. Statistical significance was considered for a value of $p<0.05$.

Results: During the study period, COPD mortality rates adjusted in Spain decreased from 28.77 deaths/100,000 inhabitants in 1999 to 12.14 deaths/100,000 inhabitants in 2019. We observed a linear decline in COPD mortality in men at national level of -3.67% per year

(95% CI -4.1 to -3.4; p<0.001), with differences between the Autonomous Communities. Mortality in women also experienced a decrease in mortality in two phases, with a first period from 1999 to 2006 with a fall of -6.8% per year (95% CI -8.6 to -5.0; p<0.001) and a second period from 2006 to 2019 with a decrease in mortality of -2.1% (95% CI -2.8 to -1.3; p<0.001), with again differences between the Autonomous Communities.

Conclusion: Mortality rates from COPD have decreased heterogeneously among the different Autonomous Communities in both men and women.

Keywords: COPD; EPOC; Jointpoint regression; Mortality rates; Regresión de jointpoint; Tasas de mortalidad; Tendencias; Trends.

supplementary info

MeSH termsexpand

full text links

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

1
BMJ Open

. 2024 Jan 12;14(1):e078843.

doi: 10.1136/bmjopen-2023-078843.

Staying Active with Multimorbidity In Acute hospital settings (StAMInA) trial: protocol for a feasibility randomised controlled trial of allied health assistant

mobility rehabilitation for patients with multimorbidity

David A Snowdon[1 2 3], Yi Tian Wang[4], Michele L Callisaya[5 3], Taya A Collyer[5 3], Laura Jolliffe[5 2 3], Nathan Johns[6], Peggy Vincent[4], Nandhinee Pragash[2 4], Nicholas F Taylor[7 8]

Affiliations expand

- PMID: 38216182

- DOI: 10.1136/bmjopen-2023-078843

Abstract

Introduction: Key to improving outcomes for patients with multimorbidity is increasing mobility through prescription of a physical activity programme, but this can be difficult to achieve in acute hospital settings. One approach that would assist physiotherapists to increase levels of physical activity is delegation of rehabilitation to allied health assistants. We aim to conduct a randomised controlled trial to determine the feasibility of an allied health assistant providing daily inpatient mobility rehabilitation for patients with multimorbidity.

Methods and analysis: Using a parallel group randomised controlled design, participants will be allocated to allied health assistant mobility rehabilitation or physiotherapist mobility rehabilitation. Adult inpatients (n=60) in an acute hospital with a diagnosis of multimorbidity who walked independently preadmission will be included. The experimental group will receive routine mobility rehabilitation, including daily mobilisation, from an allied health assistant under the supervision of a physiotherapist. The comparison group will receive routine rehabilitation from a physiotherapist. Feasibility will be determined using the following areas of focus in Bowen's feasibility framework: Acceptability (patient satisfaction); demand (proportion of patients who participate); implementation (time allied health assistant/physiotherapist spends with participant, occasions of service); and practicality (cost, adverse events). Staff involved in the implementation of allied health assistant rehabilitation will be interviewed to explore their perspectives on feasibility. Secondary outcomes include: Physical activity (daily time spent walking); daily mobilisation (Y/N); discharge destination; hospital readmission; falls; functional activity (Modified Iowa Level of Assistance Scale); and length of stay. Descriptive statistics will be used to describe feasibility. Secondary outcomes will be compared between groups using Poisson or negative binomial regression, Cox proportional hazards regression, survival analysis, linear regression or logistic regression.

Ethics and dissemination: Ethics approval was obtained from Peninsula Health (HREC/97 431/PH-2023). Findings will be disseminated in peer-reviewed journals and conference presentations.

Trial registration number: Australian and New Zealand Clinical Trial Registry ACTRN12623000584639p.

Keywords: general medicine (see internal medicine); health services for the aged; physical therapy modalities; rehabilitation medicine.

Conflict of interest statement

Competing interests: None declared.

2

PLoS Med

. 2024 Jan 12;21(1):e1004325.

doi: 10.1371/journal.pmed.1004325. Online ahead of print.

The forecasted prevalence of comorbidities and multimorbidity in people with HIV in the United States

through the year 2030: A modeling study

Keri N Althoff[1], Cameron Stewart[1], Elizabeth Humes[1], Lucas Gerace[1], Cynthia Boyd[1 2 3], Kelly Gebo[4], Amy C Justice[5 6], Emily P Hyle[7 8], Sally B Coburn[1], Raynell Lang[9], Michael J Silverberg[10 11], Michael A Horberg[12], Viviane D Lima[13], M John Gill[9], Maile Karris[14], Peter F Rebeiro[15], Jennifer Thorne[16], Ashleigh J Rich[17], Heidi Crane[18], Mari Kitahata[18], Anna Rubtsova[19], Cherise Wong[20], Sean Leng[2], Vincent C Marconi[21 22], Gypsyamber D'Souza[1], Hyang Nina Kim[18], Sonia Napravnik[23], Kathleen McGinnis[6], Gregory D Kirk[1 4], Timothy R Sterling[24 25], Richard D Moore[26], Parastu Kasaie[1]

Affiliations expand

- PMID: 38215160

- DOI: 10.1371/journal.pmed.1004325

Abstract

Background: Estimating the medical complexity of people aging with HIV can inform clinical programs and policy to meet future healthcare needs. The objective of our study was to forecast the prevalence of comorbidities and multimorbidity among people with HIV (PWH) using antiretroviral therapy (ART) in the United States (US) through 2030.

Methods and findings: Using the PEARL model-an agent-based simulation of PWH who have initiated ART in the US-the prevalence of anxiety, depression, stage ≥3 chronic kidney disease (CKD), dyslipidemia, diabetes, hypertension, cancer, end-stage liver disease (ESLD), myocardial infarction (MI), and multimorbidity (≥2 mental or physical comorbidities, other than HIV) were forecasted through 2030. Simulations were informed by the US CDC HIV surveillance data of new HIV diagnosis and the longitudinal North American AIDS Cohort Collaboration on Research and Design (NA-ACCORD) data on risk of comorbidities from 2009 to 2017. The simulated population represented 15 subgroups of PWH including Hispanic, non-Hispanic White (White), and non-Hispanic Black/African American (Black/AA) men who have sex with men (MSM), men and women with history of injection drug use and heterosexual men and women. Simulations were replicated for 200 runs and forecasted outcomes are presented as median values (95% uncertainty ranges are presented in the Supporting information). In 2020, PEARL forecasted a median population of 670,000 individuals receiving ART in the US, of whom 9% men and 4% women with history of injection drug use, 60% MSM, 8% heterosexual men, and 19% heterosexual women. Additionally, 44% were Black/AA, 32% White, and 23% Hispanic. Along with a gradual rise in population size of PWH receiving ART-reaching 908,000 individuals by 2030-PEARL forecasted a surge in prevalence of most comorbidities to 2030. Depression and/or anxiety was high and increased from 60% in 2020 to 64% in 2030. Hypertension decreased while dyslipidemia, diabetes, CKD, and MI increased. There was little change in

prevalence of cancer and ESLD. The forecasted multimorbidity among PWH receiving ART increased from 63% in 2020 to 70% in 2030. There was heterogeneity in trends across subgroups. Among Black women with history of injection drug use in 2030 (oldest demographic subgroup with median age of 66 year), dyslipidemia, CKD, hypertension, diabetes, anxiety, and depression were most prevalent, with 92% experiencing multimorbidity. Among Black MSM in 2030 (youngest demographic subgroup with median age of 42 year), depression and CKD were highly prevalent, with 57% experiencing multimorbidity. These results are limited by the assumption that trends in new HIV diagnoses, mortality, and comorbidity risk observed in 2009 to 2017 will persist through 2030; influences occurring outside this period are not accounted for in the forecasts.

Conclusions: The PEARL forecasts suggest a continued rise in comorbidity and multimorbidity prevalence to 2030, marked by heterogeneities across race/ethnicity, gender, and HIV acquisition risk subgroups. HIV clinicians must stay current on the ever-changing comorbidities-specific guidelines to provide guideline-recommended care. HIV clinical directors should ensure linkages to subspecialty care within the clinic or by referral. HIV policy decision-makers must allocate resources and support extended clinical capacity to meet the healthcare needs of people aging with HIV.

Conflict of interest statement

I have read the journal's policy and the authors of this manuscript have listed the following competing interests of the co-authors (collected via ICMJE Conflict of Interest forms) in the submission, as follows: KNA serves on the scientific review board for TrioHealth Inc and as a consultant to the All of Us Research Program. MJG has been an Hoc member on national HIV Advisory Boards of Merck, Gilead and ViiV. CW is currently employed by Regeneron Pharmaceuticals Inc and contributed to this article as a prior trainee of Johns Hopkins University. KG declares that his institution receives funding from U.S. Department of Defense's (DOD) Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense (JPEO-CBRND), in collaboration with the Defense Health Agency (DHA) (contract number: W911QY2090012), Bloomberg Philanthropies, State of Maryland, NIH National Center for Advancing Translational Sciences (NCATS) U24TR001609, Division of Intramural Research NIAID NIH, Mental Wellness Foundation, Moriah Fund, Octapharma, HealthNetwork Foundation, and the Shear Family Foundation for her work. KG received royalties from UptoDate and served as a paid consultant to Aspen Institute, and Teach for America. KG declares that none of these funding sources are related to this manuscript. PFR declares consultation with Gilead & Janssen pharmaceuticals (money paid to individual); research grants from NIH/NIAID (money paid to institution). JT declares to be consultant for AbbVie, Canfield, Gilead, Roche and Tarsier and being Equity owner for Tarsier. VFM has received support from the Emory CFAR (P30 AI050409) and received

investigator-initiated research grants (to the institution) and consultation fees (both unrelated to the current work) from Eli Lilly, Bayer, Gilead Sciences, and ViiV. HNK declares that Gilead Sciences program funding paid to the author's institution. The following authors have declared that no competing interests exist: CS, EH, LG, CB, ACJ, EH, SC, RL, MJS, MH, VL, MK, AJR, HC, MK, AR, SL, GDS, SN, KMG, GDK, TRS, RDM, PK.

3

Alzheimers Dement (Amst)

. 2024 Jan 10;16(1):e12523.

doi: 10.1002/dad2.12523. eCollection 2024 Jan-Mar.

Trajectory of multimorbidity before dementia: A 24-year follow-up study

Jing Guo[1], Bin Gao[2], Yun Huang[3], Suhang Song[4]

Affiliations expand

- PMID: 38213950
- PMCID: PMC10781649
- DOI: 10.1002/dad2.12523

Abstract

Introduction: Although the multimorbidity-dementia association has been widely addressed, little is known on the long-term trajectory of multimorbidity (TOM) in preclinical dementia.

Methods: Based on the Health and Retirement Study, burden of multimorbidity was quantified with the total number of eight long-term conditions (LTC). Patterns of TOM before dementia diagnosis were investigated with mixed-effects models.

Results: In 1752 dementia cases and 5256 matched controls, cases showed higher and faster increasing predicted number of LTC than controls, with a significant case-control difference from 20 years prior to dementia diagnosis. Larger increases in number of LTC during preclinical phase of dementia were found in White participants, females, those whose age at dementia onset was younger, and those who were less educated.

Discussion: Our findings emphasize the faster accumulation of multimorbidity in prodromal dementia than in natural aging, as well as effect modifications by age and sex.

Highlights: TOM increased faster in prodromal dementia than in natural ageing.Patterns of TOM by dementia status diverged at 20 years before dementia diagnosis.Patterns of TOM were modified by age and sex.

Keywords: dementia; epidemiology; multimorbidity; trajectory.

Conflict of interest statement

All authors declare no conflicts of interest. Author disclosures are available in the supporting information.

- 30 references
- 2 figures

full text links

Proceed to details

Cite

Share

4

BMC Pulm Med

. 2024 Jan 11;24(1):29.

doi: 10.1186/s12890-023-02817-6.

Comorbidity increases the risk of pulmonary tuberculosis: a nested case-control study using multi-source big data

Bao-Yu Wang[1,2], Ke Song[1,2], Hai-Tao Wang[2], Shan-Shan Wang[1,2], Wen-Jing Wang[1,2], Zhen-Wei Li[1], Wan-Yu Du[1], Fu-Zhong Xue[3,4], Lin Zhao[5,6], Wu-Chun Cao[7,8]

Affiliations expand

- PMID: 38212743
- PMCID: PMC10782630
- DOI: 10.1186/s12890-023-02817-6

Free PMC article

Abstract

Background: Some medical conditions may increase the risk of developing pulmonary tuberculosis (PTB); however, no systematic study on PTB-associated comorbidities and comorbidity clusters has been undertaken.

Methods: A nested case-control study was conducted from 2013 to 2017 using multi-source big data. We defined cases as patients with incident PTB, and we matched each case with four event-free controls using propensity score matching (PSM). Comorbidities diagnosed prior to PTB were defined with the International Classification of Diseases-10 (ICD-10). The longitudinal relationships between multimorbidity burden and PTB were analyzed using a generalized estimating equation. The associations between PTB and 30 comorbidities were examined using conditional logistic regression, and the comorbidity clusters were identified using network analysis.

Results: A total of 4265 cases and 17,060 controls were enrolled during the study period. A total of 849 (19.91%) cases and 1141 (6.69%) controls were multimorbid before the index date. Having 1, 2, and ≥ 3 comorbidities was associated with an increased risk of PTB (aOR 2.85-5.16). Fourteen out of thirty comorbidities were significantly associated with PTB (aOR 1.28-7.27), and the associations differed by sex and age. Network analysis identified three major clusters, mainly in the respiratory, circulatory, and endocrine/metabolic systems, in PTB cases.

Conclusions: Certain comorbidities involving multiple systems may significantly increase the risk of PTB. Enhanced awareness and surveillance of comorbidity are warranted to ensure early prevention and timely control of PTB.

Keywords: Comorbidity; Multimorbidity; Nested case-control study; Prevention; Pulmonary Tuberculosis.

Conflict of interest statement

The authors declare no competing interests.

- 34 references
- 3 figures

supplementary info

Grants and fundingexpand

full text links

Proceed to details

Cite

Share

5

BMC Geriatr

-
-
-

. 2024 Jan 11;24(1):50.

doi: 10.1186/s12877-023-04603-9.

Multimorbidity clusters in adults 50 years or older with and without a history of cancer: National Health Interview Survey, 2018

Gabriela Plasencia[1 2 3], Simone C Gray[4], Ingrid J Hall[4], Judith Lee Smith[4]

Affiliations expand

- PMID: 38212690
- PMCID: PMC10785430
- DOI: 10.1186/s12877-023-04603-9

Free PMC article

Abstract

Background: Multimorbidity is increasing among adults in the United States. Yet limited research has examined multimorbidity clusters in persons aged 50 years and older with and without a history of cancer. An increased understanding of multimorbidity clusters may improve the cancer survivorship experience for survivors with multimorbidity.

Methods: We identified 7580 adults aged 50 years and older with 2 or more diseases-including 811 adults with a history of primary breast, colorectal, cervical, prostate, or lung cancer-from the 2018 National Health Interview Survey. Exploratory factor analysis identified clusters of multimorbidity among cancer survivors and individuals without a history of cancer (controls). Frequency tables and chi-square tests were performed to determine overall differences in sociodemographic characteristics, health-related characteristics, and multimorbidity between groups.

Results: Cancer survivors reported a higher prevalence of having 4 or more diseases compared to controls (57% and 38%, respectively). Our analysis identified 6 clusters for cancer survivors and 4 clusters for controls. Three clusters (pulmonary, cardiac, and liver) included the same diseases for cancer survivors and controls.

Conclusions: Diseases clustered differently across adults ≥ 50 years of age with and without a history of cancer. Findings from this study may be used to inform clinical care, increase the development and dissemination of multilevel public health interventions, escalate system improvements, and initiate innovative policy reform.

Keywords: Cancer health disparities; Cancer survivors; Factor analysis; Multimorbidity; Multimorbidity clusters; Multiple chronic conditions.

Conflict of interest statement

The authors declare no competing interests.

- 51 references
- 1 figure

supplementary info

Grants and fundingexpand

full text links

Proceed to details

Cite

Share

6

Geriatr Gerontol Int

. 2024 Jan 10.

doi: 10.1111/ggi.14801. Online ahead of print.

Prevalence of depression and clinical depressive symptoms in community-dwelling older adults with cognitive frailty

A'isyah Mohd Safien[1], Norhayati Ibrahim[1], Ponnusamy Subramaniam[1], Devinder Kaur Ajit Singh[2], Arimi Fitri Mat Ludin[2], Ai-Vyrn Chin[3], Suzana Shahar[2]

Affiliations expand

- PMID: 38199952

- DOI: 10.1111/ggi.14801

Abstract

Aim: The present study determines the prevalence of depression and the extent of clinical depression symptoms among community-dwelling older adults with cognitive frailty and its associated factors.

Methods: A total of 755 older adults aged ≥60 years were recruited. Their cognitive performance was determined using the Clinical Dementia Rating. Fried's criteria was applied to identify physical frailty, and the Beck Depression Inventory assessed their mental states.

Results: A total of 39.2% (n = 304) of the participants were classified as cognitive frail. In this cognitive frail subpopulation, 8.6% (n = 26) had clinical depressive symptoms, which were mostly somatic such as disturbance in sleep pattern, work difficulty, fatigue, and lack of appetite. Older adults with cognitive frailty also showed significantly higher depression levels as compared with the noncognitive frail participants (t (622.06) = -3.38; P = 0.001). There are significant associations between depression among older adults with cognitive frailty and multimorbidity (P = 0.009), polypharmacy (P = 0.009), vision problems (P = 0.046), and hearing problems (P = 0.047). The likelihood of older adults with cognitive frailty who experience impairments to their vision and hearing, polypharmacy, and multimorbidity to be depressed also increased by 2, 3, 5, and 7-fold.

Conclusions: The majority of the Malaysian community-dwelling older adults were in a good mental state. However, older adults with cognitive frailty are more susceptible to depression due to impairments to their hearing and vision, multimorbidity, and polypharmacy. As common clinical depressive symptoms among older adults with cognitive frailty are mostly somatic, it is crucial for health professionals to recognize these and not to disregard them as only physical illness. Geriatr Gerontol Int 2024; ••: ••-••.

Keywords: cognitive frailty; community dwelling; depression; older adult.

- 68 references

supplementary info

Grants and fundingexpand

full text links

Proceed to details

Cite

Share

7

Psychol Med

-
-
-

. 2024 Jan 10:1-14.

doi: 10.1017/S0033291723003823. Online ahead of print.

Early life stress in relation with risk of overweight, depression, and their comorbidity across adulthood: findings from a British birth cohort

Ainhoa Ugarteche Pérez[1], Eloïse Berger[1], Michelle Kelly-Irving[1], Cyrille Delpierre[1], Lucile Capuron[2], Raphaële Castagné[1]

Affiliations expand

- PMID: 38197250

- DOI: 10.1017/S0033291723003823

Abstract

Background: Multimorbidity, known as the co-occurrence of at least two chronic conditions, has become of increasing concern in the current context of ageing populations, though it affects all ages. Early life risk factors of multimorbidity include adverse childhood experiences (ACEs), particularly associated with psychological conditions and weight problems. Few studies have considered related mechanisms and focus on old age participants. We are interested in estimating, from young adulthood, the risk of overweight-depression comorbidity related to ACEs while adjusting for early life confounders and intermediate variables.

Methods: We used data from the 1958 National Child Development Study, a prospective birth cohort study (*N* = 18 558). A four-category outcome (no condition, overweight only, depression only and, overweight-depression comorbidity) was constructed at 23, 33, and 42 years. Multinomial logistic regression models adjusting for intermediate variables co-occurring with this outcome were created. ACEs and sex interaction on comorbidity risk was tested.

Results: In our study sample (*N* = 7762), we found that ACEs were associated with overweight-depression comorbidity risk throughout adulthood (RRR [95% CI] at 23y = 3.80 [2.10-6.88]) though less overtime. Comorbidity risk was larger than risk of separate conditions. Intermediate variables explained part of the association. After full-adjustment, an association remained (RRR [95% CI] at 23y = 2.00 [1.08-3.72]). Comorbidity risk related to ACEs differed by sex at 42.

Conclusion: Our study provides evidence on the link and potential mechanisms between ACEs and the co-occurrence of mental and physical diseases throughout the life-course. We suggest addressing ACEs in intervention strategies and public policies to go beyond single disease prevention.

Keywords: adverse childhood experiences; depression; life course epidemiology; mental health; multimorbidity; overweight.

8

JAMA Intern Med

. 2024 Jan 8:e237410.

doi: 10.1001/jamainternmed.2023.7410. Online ahead of print.

Population-Based Trends in Complexity of Hospital Inpatients

Hiten Naik[1], Tyler M Murray[1], Mayesha Khan[1], Daniel Daly-Grafstein[1,2], Guiping Liu[3], Barry O Kassen[1], Jake Onrot[1], Jason M Sutherland[3,4], John A Staples[1,5]

Affiliations expand

- PMID: 38190179
- PMCID: PMC10775081 (available on 2025-01-08)
- DOI: 10.1001/jamainternmed.2023.7410

Abstract

Importance: Clinical experience suggests that hospital inpatients have become more complex over time, but few studies have evaluated this impression.

Objective: To assess whether there has been an increase in measures of hospital inpatient complexity over a 15-year period.

Design, setting and participants: This cohort study used population-based administrative health data from nonelective hospitalizations from April 1, 2002, to January 31, 2017, to describe trends in the complexity of inpatients in British Columbia, Canada. Hospitalizations were included for individuals 18 years and older and for which the most responsible diagnosis did not correspond to pregnancy, childbirth, the puerperal period, or the perinatal period. Data analysis was performed from July to November 2023.

Exposure: The passage of time (15-year study interval).

Main outcomes and measures: Measures of complexity included patient characteristics at the time of admission (eg, advanced age, multimorbidity, polypharmacy, recent hospitalization), features of the index hospitalization (eg, admission via the emergency

department, multiple acute medical problems, use of intensive care, prolonged length of stay, in-hospital adverse events, in-hospital death), and 30-day outcomes after hospital discharge (eg, unplanned readmission, all-cause mortality). Logistic regression was used to estimate the relative change in each measure of complexity over the entire 15-year study interval.

Results: The final study cohort included 3 367 463 nonelective acute care hospital admissions occurring among 1 272 444 unique individuals (median [IQR] age, 66 [48-79] years; 49.1% female and 50.8% male individuals). Relative to the beginning of the study interval, inpatients at the end of the study interval were more likely to have been admitted via the emergency department (odds ratio [OR], 2.74; 95% CI, 2.71-2.77), to have multimorbidity (OR, 1.50; 95% CI, 1.47-1.53) and polypharmacy (OR, 1.82; 95% CI, 1.78-1.85) at presentation, to receive treatment for 5 or more acute medical issues (OR, 2.06; 95% CI, 2.02-2.09), and to experience an in-hospital adverse event (OR, 1.20; 95% CI, 1.19-1.22). The likelihood of an intensive care unit stay and of in-hospital death declined over the study interval (OR, 0.96; 95% CI, 0.95-0.97, and OR, 0.81; 95% CI, 0.80-0.83, respectively), but the risks of unplanned readmission and death in the 30 days after discharge increased (OR, 1.14; 95% CI, 1.12-1.16, and OR, 1.28; 95% CI, 1.25-1.31, respectively).

Conclusions and relevance: By most measures, hospital inpatients have become more complex over time. Health system planning should account for these trends.

Conflict of interest statement

Conflict of Interest Disclosures: Dr Naik reported personal fees from the University of British Columbia Clinician Investigator Program Fellowship during the conduct of the study. Dr Staples reported grants from the Vancouver Coastal Health Research Institute and the BC Specialist Services Committee and personal fees from Michael Smith Health Research BC during the conduct of the study; and grants from the Canadian Institutes of Health Research, the Heart and Stroke Foundation of Canada, and the UBC Division of General Internal Medicine Academic Investment Fund outside the submitted work. No other disclosures were reported.

Comment in

- doi: 10.1001/jamainternmed.2023.7407
- 67 references

full text links

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

1
Intern Med
.
. 2024 Jan 13.

doi: 10.2169/internalmedicine.2918-23. Online ahead of print.

Relief of Airflow Limitation and Airway Inflammation by Endoscopic Sinus Surgery in a Patient with Severe Asthma with Eosinophilic Chronic Rhinosinusitis

Kosuke Matsumori[1], Kazuki Hamada[2], Keiji Oishi[2], Masatoshi Okimura[2], Kosei Yonezawa[2], Michiya Watanabe[2], Yukari Hisamoto[2], Keita Murakawa[2], Ayumi Fukatsu-Chikumoto[2], Kazuki Matsuda[2], Syuichiro Ohata[2], Ryo Suetake[2], Toshiaki Utsunomiya[2], Yoriyuki Murata[2], Yoshikazu Yamaji[2], Maki Asami-Noyama[2], Nobutaka Edakuni[2], Tomoyuki Kakugawa[3], Tsunahiko Hirano[2], Kazuto Matsunaga[2]

Affiliations expand

- PMID: 38220196

- DOI: 10.2169/internalmedicine.2918-23

Abstract

Although endoscopic sinus surgery (ESS) is beneficial in improving asthma symptoms, its impact on the lung function in patients with asthma and chronic rhinosinusitis remains unclear. We herein report a case of severe asthma with eosinophilic chronic rhinosinusitis, in which ESS substantially improved airflow limitation and concomitantly reduced fractional exhaled nitric oxide and blood eosinophil counts. ESS likely relieved airflow limitation by suppressing type 2 inflammatory pathways. This case highlights ESS as a promising strategy for achieving clinical remission in patients with severe asthma and chronic rhinosinusitis.

Keywords: airflow limitation; asthma remission; chronic rhinosinusitis; endoscopic sinus surgery; severe asthma.

2
Allergy Asthma Clin Immunol

. 2024 Jan 13;20(1):3.

doi: 10.1186/s13223-023-00868-2.

Different expression levels of interleukin-36 in asthma phenotypes

Jinyan Li[1], Zhengda Wang[1], Hongna Dong[1], Yuqiu Hao[1], Peng Gao[2], Wei Li[3]

Affiliations expand

- PMID: 38218943

- DOI: 10.1186/s13223-023-00868-2

Abstract

Interleukin (IL)-36 family is closely associated with inflammation and consists of IL-36α, IL-36β, IL-36γ, and IL-36Ra. The role of IL-36 in the context of asthma and asthmatic phenotypes is not well characterized. We examined the sputum IL-36 levels in patients with different asthma phenotypes in order to unravel the mechanism of IL-36 in different asthma phenotypes. Our objective was to investigate the induced sputum IL-36α, IL-36β, IL-36γ, and IL-36Ra concentrations in patients with mild asthma, and to analyze the relationship of these markers with lung function and other cytokines in patients with different asthma phenotypes. Induced sputum samples were collected from patients with mild controlled asthma (n = 62, 27 males, age 54.77 ± 15.49) and healthy non-asthmatic controls (n = 16, 10 males, age 54.25 ± 14.60). Inflammatory cell counts in sputum were determined. The concentrations of IL-36 and other cytokines in the sputum supernatant were measured by ELISA and Cytometric Bead Array. This is the first study to report the

differential expression of different isoforms of IL-36 in different asthma phenotypes. IL-36α and IL-36β concentrations were significantly higher in the asthma group (P = 0.003 and 0.031), while IL-36Ra concentrations were significantly lower (P < 0.001) compared to healthy non-asthmatic controls. Sputum IL-36α and IL-36β concentrations in the neutrophilic asthma group were significantly higher than those in paucigranulocytic asthma (n = 24) and eosinophilic asthma groups (n = 23). IL-36α and IL-36β showed positive correlation with sputum neutrophils and total cell count (R = 0.689, P < 0.01; R = 0.304, P = 0.008; R = 0.689, P < 0.042; R = 0.253, P = 0.026). In conclusion, IL-36α and IL-36β may contribute to asthma airway inflammation by promoting neutrophil recruitment in airways. Our study provides insights into the inflammatory pathways of neutrophilic asthma and identifies potential therapeutic target.

Keywords: Asthma; Asthma patients; Asthma phenotypes; IL-36; Induced sputum.

- 45 references

full text links

Proceed to details

Cite

Share

3
Respir Med
.
. 2024 Jan 11:222:107529.

doi: 10.1016/j.rmed.2024.107529. Online ahead of print.

The interplay between obesity and blood neutrophils in adult-onset asthma

Helena Backman[1], Sofia Winsa Lindmark[2], Linnea Hedman[2], Hannu Kankaanranta[3], Katja Warm[4], Anne Lindberg[4], Apostolos Bossios[5], Eva Rönmark[2], Caroline Stridsman[4]

Affiliations expand

- PMID: 38215999

- DOI: 10.1016/j.rmed.2024.107529

No abstract available

Conflict of interest statement

Declaration of competing interest None of the authors have any conflicts of interest directly related to the submitted work. HB reports personal fees for lectures from AstraZeneca, Boehringer-Ingelheim and GlaxoSmithKline outside the submitted work. AB reports a grant from AstraZeneca and lecture fees from Chiesi paid to his institution outside the submitted work. HK reports fees for lectures and/or consulting from AstraZeneca, Boehringer-Ingelheim, Chiesi, COVIS Pharma, GSK, MedScape, MSD, Novartis, Orion Pharma and Sanofi, outside the submitted work. KW reports a personal fee for lecctures from Astra Zeneca outside the submitted work. CS reports personal fees and institutional fees from AstraZeneca, Chiesi and TEVA, and fees for Advisory Board work for AstraZeneca, all outside the submitted work. AL reports personal fees for lectures at educational events from Boehringer-Ingelheim and Novartis, and for Advisory Board work from AstraZeneca, Boehringer Ingelhem, GlaxoSmithKline, and Novartis, all outside the submitted work. SWL, LH, and ER have no conflicts of interests to disclose related to the submitted work.

4
J Allergy Clin Immunol Pract

. 2024 Jan 9:S2213-2198(24)00017-5.

doi: 10.1016/j.jaip.2024.01.006. Online ahead of print.

Long-term Effectiveness of Benralizumab in Eosinophilic Granulomatosis with Polyangiitis

Alexandra M Nanzer[1], Anne-Catherine Maynard-Paquette[2], Vardah Alam[3], Linda Green[4], Louise Thomson[5], Jodie Lam[6], Mariana Fernandes[7], Cris Roxas[8], Grainne d'Ancona[9], Andrew Hearn[10], Jessica Gates[11], Sangita Agarwal[12], Brian D Kent[13], Michelle Fernando[14], David P D'Cruz[15], Claire Hopkins[16], Tevfik F Ismail[17], Jaideep Dhariwal[18], David J Jackson[19]

Affiliations expand

- PMID: 38211889

- DOI: 10.1016/j.jaip.2024.01.006

Abstract

Background: Eosinophilic granulomatosis with polyangiitis (EGPA) is a multi-systemic disease characterised by eosinophilic tissue inflammation. Benralizumab, an anti-IL-5-receptor monoclonal antibody, induces rapid depletion of eosinophils; its longer-term effect in EGPA is unknown.

Objective: To assess the real-world effectiveness and clinical remission rates of anti-IL5R therapy in EGPA METHODS: We performed a retrospective cohort analysis of EGPA patients, who commenced treatment with benralizumab. Clinical remission, assessed at 1 year and 2 years post-initiation of benralizumab, was defined as an absence of active vasculitis (BVAS of 0) and an OCS dose of ≤4mg/day prednisolone. ''Super-responders'' were defined as patients in remission and free of any significant relapses (asthma or extrapulmonary) over the preceding 12 months. The corticosteroid-sparing capacity of benralizumab, patient-reported outcome measures, and characteristics associated with clinical remission and super-responder status were also analysed.

Results: Seventy patients completed at least one year of treatment with benralizumab, of which fifty-three completed two years. 47/70 (67.1%) met the definition for clinical remission at 1 year, with a similar proportion in remission at 2 years. Excluding asthma related relapses, 61/70 (87.1%) of patients were relapse free at 1 year and of the 53 who completed 2 years, 45/53 (84.9%) were relapse free. 67.9% no longer needed any OCS for disease control. No significant difference was seen between ANCA-positive and ANCA-negative subgroups.

Conclusion: In this real-world setting of patients with EGPA, treatment with benralizumab was well tolerated and resulted in corticosteroid-free clinical remission for the majority of patients.

Keywords: EGPA; anti-eosinophilic biologics; immunosuppressants; oral corticosteroids; steroid-sparing.

5

Review

Respir Investig

. 2024 Jan 9;62(2):206-215.

doi: 10.1016/j.resinv.2023.12.015. Online ahead of print.

Efficacy and safety of macrolide therapy for adult asthma: A systematic review and meta-analysis

Yosuke Fukuda[1], Nobuyuki Horita[2], Masaharu Aga[3], Fumihiro Kashizaki[4], Yu Hara[5], Yasushi Obase[6], Akio Niimi[7], Takeshi Kaneko[5], Hiroshi Mukae[6], Hironori Sagara[8]

Affiliations expand

- PMID: 38211545

- DOI: 10.1016/j.resinv.2023.12.015

Abstract

Background: The evidence for macrolide therapy in adult asthma is not properly established and remains controversial. We conducted a systematic review and meta-analysis to examine the efficacy and safety of macrolide therapy for adult asthma.

Methods: We searched randomized controlled trials from MEDLINE via the PubMed, CENTRAL, and Ichushi Web databases. The primary outcome was asthma exacerbation. The secondary outcomes were serious adverse events (including mortality), asthma-related quality of life (symptom scales, Asthma Control Questionnaire, and Asthma Quality of Life Questionnaire), rescue medication (puffs/day), respiratory function (morning peak expiratory flow, evening peak flow, and forced expiratory volume in 1 s), bronchial hyperresponsiveness, and minimum oral corticosteroid dose. Of the 805 studies, we selected seven studies for the meta-analysis, which was conducted using a random-effects model.

Systematic review registration: University Hospital Medical Information Network Clinical Trials Registry (UMIN000050824).

Results: No significant difference between macrolide and placebo for asthma exacerbations was observed (risk ratio 0.71, 95 % confidence interval [CI] 0.46-1.09; p = 0.12). Macrolide therapy for adult asthma showed a significant improvement in rescue medication with short-acting beta-agonists (mean difference -0.41, 95 % CI -0.78 to -0.04; p = 0.03). Macrolide therapy did not show more serious adverse events (odd ratio 0.61, 95 % CI 0.34-1.10; p = 0.10) than those with placebo. The other secondary outcomes were not significantly different between the macrolide and placebo groups.

Conclusions: Macrolide therapy for adult asthma may be more effective than placebo and could be a treatment option.

Keywords: Adult; Asthma; Azithromycin; Clarithromycin; Exacerbation; Macrolide.

Conflict of interest statement

Declaration of competing interest The authors have no conflicts of interest.

Review

Expert Opin Investig Drugs

. 2024 Jan 11.

doi: 10.1080/13543784.2024.2305144. Online ahead of print.

Investigational thymic stromal lymphopoietin inhibitors for the treatment of asthma: a systematic review

Paola Rogliani[1], Gian Marco Manzetti[1], Federica Roberta Bettin[1], Maria D'Auria[1], Luigino Calzetta[2]

Affiliations expand

- PMID: 38206116

- DOI: 10.1080/13543784.2024.2305144

Abstract

Introduction: Severe asthma patients often remain uncontrolled despite high-intensity therapies. Biological therapies targeting thymic stromal lymphopoietin (TSLP), a key player in asthma pathogenesis, have emerged as potential options. Currently, the only TSLP inhibitor approved for the treatment of severe asthma is the immunoglobulin G (IgG) 2λ anti-TSLP monoclonal antibody (mAb) tezepelumab.

Areas covered: This systematic review assesses the efficacy and safety of investigational TSLP inhibitors across different stages of development for asthma treatment.

Expert opinion: TSLP contributes to airway inflammation, making it a pivotal therapeutic target. Ecleralimab, an inhaled antibody fragment antigen binding, shows promising evidence in enhancing efficacy and reducing systemic adverse events. SAR443765, with its NANOBODY® formulation and bispecific inhibition of TSLP and IL-13, offers improved

tissue penetration and efficacy. The mAB TQC2731 exhibits high in vitro bioactivity, and the strength of the mAb UPB-101 is to act against the TSLP receptor. Some studies include mild and moderate asthma patients, suggesting the potential for extending biological therapy to non-severe patients. This systematic review highlights the potential of TSLP inhibitors as valuable additions to asthma treatment, even in milder forms of the disease. Future research and cost-reduction efforts are needed to expanding access to these promising therapies.

Keywords: Investigational drugs; TSLP; asthma; efficacy; experimental drugs; fragment antigen binding; monoclonal antibody; nanobody; safety.

7

Editorial

Curr Med Chem

. 2024 Jan 10.

doi: 10.2174/0109298673289734231228105444. Online ahead of print.

Exploring the Role of Nitric Oxide in Lower Airway Diseases: Insights and Real-world Application

Pasquale Ambrosino[1], Mauro Maniscalco[2], Giuseppina Marcuccio[2,3]

Affiliations expand

- PMID: 38204227

- DOI: 10.2174/0109298673289734231228105444

No abstract available

Keywords: asthma; biomarkers; copd; disability; nitric oxide; outcome.

supplementary info

Publication typesexpand

full text links

Proceed to details

Cite

Share

8
Respir Med
.
. 2024 Jan 8:107528.

doi: 10.1016/j.rmed.2024.107528. Online ahead of print.

Comparison of clinical remission criteria for severe asthma patients receiving biologic therapy

Anna Breslavsky[1], Ahsen Al Qaied[1], Philip Tsenter[1], Nikita Mukaseev[1], Mohamed Alamor[1], Keren Cohen-Hagai[2], Ori Wand[3]

Affiliations expand

- PMID: 38199287

- DOI: 10.1016/j.rmed.2024.107528

Abstract

Background: The concept of remission on biological treatment has been suggested as a therapeutic target for patients with severe asthma, composed of 1. no chronic use of systemic steroids, 2. no exacerbations, 3. minimal symptoms, and 4. optimized lung function, for a significant time. However, the criteria for remission are not clearly defined.

Objective: Our objective was to compare different criteria for remission in subjects receiving biologicals for severe asthma.

Methods: A cross-sectional study of adult subjects who receive a stable regimen of a biological for severe asthma for at least 6-months. We compared the proportion of subjects who fulfilled different specific criteria in the four domains, as well as those who achieved different composite outcome measures of clinical remission.

Results: Of 39 subjects, 28 were females (71.8%), mean age 60.4. Twelve were current or past smokers (30.8%). Twelve had prior different biological treatment (30.8%), and 3/39 had more than one previous treatment (7.7%). Current biological included mepolizumab 12/39 (30.8%), dupilumab 11/39 (28.2%), benralizumab 10/39 (25.6%), omalizumab 5/39 (12.8%), reslizumab 1/39 (2.6%). Different specific criteria were achieved in 39-80% of subjects, being highest for no chronic steroid use and lowest for symptoms control and lung function. Overall remission was obtained by 20-41%, depending on definition, with significant variability in agreement between different sets of remission criteria (Cohen's kappa 0.33-0.89).

Conclusion: Clinical remission is achievable in real-world severe asthmatics on biological therapies. The core criteria for remission should be better defined.

Keywords: Asthma; Benralizumab; Dupilumab; Mepolizumab; Omalizumab; Remission; Reslizumab.

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: Ori Wand reports a relationship with GlaxoSmithKline that includes: consulting or advisory and speaking and lecture fees. Ori Wand reports a relationship with AstraZeneca that includes: consulting or advisory and speaking and lecture fees. Ori Wand reports a relationship with Boehringer Ingelheim Ltd that includes: speaking and lecture fees. Ori Wand reports a relationship with Sanofi that includes: speaking and lecture fees. Ori Wand reports a relationship with Kamada Ltd that includes: speaking and lecture fees. If there are other authors, they declare that they have no known competing financial interests or

personal relationships that could have appeared to influence the work reported in this paper.

full text links

Proceed to details

Cite

Share

9

Review

JMIR Mhealth Uhealth

. 2024 Jan 10:12:e47295.

doi: 10.2196/47295.

Functionality and Quality of Asthma mHealth Apps and Their Consistency With International Guidelines: Structured Search and Evaluation

Billy Robinson[1], Eleni Proimos[2], Daniel Zou[3], Enying Gong[4], Brian Oldenburg[5,6], Katharine See[1]

Affiliations expand

- PMID: 38198204

- DOI: 10.2196/47295

Free article

Abstract

Background: Asthma is a chronic respiratory disorder requiring long-term pharmacotherapy and judicious patient self-management. Few studies have systematically

evaluated asthma mobile health (mHealth) apps for quality and functionality; however, none have systematically assessed these apps for their content alignment with international best practice guidelines.

Objective: This review aims to conduct a systematic search and evaluation of current mHealth apps in the Australian marketplace for their functionality, quality, and consistency with best practice guidelines.

Methods: The most recent Global Initiative for Asthma (GINA) guidelines were reviewed to identify key recommendations that could be feasibly incorporated into an mHealth app. We developed a checklist based on these recommendations and a modified version of a previously developed framework. App stores were reviewed to identify potential mHealth apps based on predefined criteria. Evaluation of suitable apps included the assessment of technical information, an app quality assessment using the validated Mobile App Rating Scale (MARS) framework, and an app functionality assessment using the Intercontinental Medical Statistics Institute for Health Informatics (IMS) Functionality Scoring System. Finally, the mHealth apps were assessed for their content alignment with the GINA guidelines using the checklist we developed.

Results: Of the 422 apps initially identified, 53 were suitable for further analysis based on inclusion and exclusion criteria. The mean number of behavioral change techniques for a single app was 3.26 (SD 2.27). The mean MARS score for all the reviewed apps was 3.05 (SD 0.54). Of 53 apps, 27 (51%) achieved a total MARS score of ≥3. On average, the reviewed apps achieved 5.1 (SD 2.79) functionalities on the 11-point IMS functionality scale. The median number of functionalities identified was 5 (IQR 2-7). Overall, 10 (22%) of the 45 apps with reviewer consensus in this domain provided general knowledge regarding asthma. Of 53 apps, skill training in peak flow meters, inhaler devices, recognizing or responding to exacerbations, and nonpharmacological asthma management were identified in 8 (17%), 12 (25%), 11 (28%), and 14 (31%) apps, respectively; 19 (37%) apps could track or record "asthma symptoms," which was the most commonly recorded metric. The most frequently identified prompt was for taking preventive medications, available in 9 (20%) apps. Five (10%) apps provided an area for patients to store or enter their asthma action plan.

Conclusions: This study used a unique checklist developed based on the GINA guidelines to evaluate the content alignment of asthma apps. Good-quality asthma apps aligned with international best practice asthma guidelines are lacking. Future app development should target the currently lacking key features identified in this study, including the use of asthma action plans and the deployment of behavioral change techniques to engage and re-engage with users. This study has implications for clinicians navigating the ever-expanding mHealth app market for chronic diseases.

Trial registration: PROSPERO CRD42021269894; https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=269894.

International registered report identifier (irrid): RR2-10.2196/33103.

Keywords: app; apps; asthma; best practices; chronic disease; compliance; evaluation; guideline; guidelines; mHealth; mobile; mobile health; mobile phone; quality; respiratory; review methodology; review of apps; smartphone; systematic review.

supplementary info

Publication types, MeSH termsexpand

full text links

Proceed to details

Cite

Share

10
Allergy
.
2024 Jan 10.

doi: 10.1111/all.16011. Online ahead of print.

Sputum cytokines associated with raised FeNO after anti-IL5 biologic therapy in severe asthma

Pieter-Paul Hekking[1,2], Kayla Zhang[1], Carmen Paz Venegas Garrido[1], Raquel Lopez-Rodriguez[1,3], Melanie Kjarsgaard[1], Manali Mukherjee[1], Parameswaran Nair[1]

Affiliations expand

- PMID: 38197516

- DOI: 10.1111/all.16011

No abstract available

- 7 references

full text links

Proceed to details

Cite

Share

11
Expert Opin Biol Ther
.
. 2024 Jan 10.

doi: 10.1080/14712598.2024.2304556. Online ahead of print.

Safety of dupilumab in T2 airways conditions: focus on eosinophilia across trials and real-life evidence

Marco Caminati[1,2], Claudio Micheletto[3], Francesca Norelli[1], Bianca Olivieri[2], Giancarlo Ottaviano[4], Roberto Padoan[5], Giorgio Piacentini[6], Michele Schiappoli[2], Gianenrico Senna[1,2], Francesco Menzella[7]

Affiliations expand

- PMID: 38197326

- DOI: 10.1080/14712598.2024.2304556

Abstract

Introduction: Dupilumab, a monoclonal antibody targeting the IL-4 receptor alpha subunit, effectively blocks both IL-4 and IL-13 mediated pathways. Its introduction has represented a significant advancement in the treatment of severe asthma and other Type 2 (T2) conditions, including nasal polyps, atopic dermatitis, and eosinophilic esophagitis. To date, Dupilumab has demonstrated optimal efficacy and safety profile.

Areas covered: The safety profile of dupilumab has been extensively studied, especially for its effects on blood eosinophil count. Transient eosinophil increase during treatment is typically insignificant from a clinical point of view and related to its mechanism of action. Rare cases of hyper-eosinophilia associated with clinical conditions like eosinophilic granulomatosis with polyangiitis (EGPA) and hypereosinophilic syndrome (HES) have been reported. Those cases are often related to the drug's steroid-sparing effect or the natural trajectory of the underlying disease rather than a direct cause-effect relationship with dupilumab.

Expert opinion: The management of hyper-eosinophilia during dupilumab treatment requires comprehensive diagnostic work-up and strict follow-up monitoring for early detection of systemic disease progression in order to avoid unnecessary discontinuation of an effective treatment. This approach highlights the importance of a personalized treatment.

Keywords: Asthma; EGPA; chronic rhinosinusitis with nasal polyps; dupilumab; eosinophils; hyper-eosinophilia; safety; severe asthma.

12
ERJ Open Res

. 2024 Jan 8;10(1):00566-2023.

doi: 10.1183/23120541.00566-2023. eCollection 2024 Jan.

Asthma exacerbations and eosinophilia in the UK Biobank: a genome-wide association study

Ahmed Edris[1,2], Kirsten Voorhies[3], Sharon M Lutz[3,4], Carlos Iribarren[5], Ian Hall[6], Ann Chen Wu[3], Martin Tobin[2], Katherine Fawcett[2,7], Lies Lahousse[1,7]

Affiliations expand

- PMID: 38196893
- PMCID: PMC10772900
- DOI: 10.1183/23120541.00566-2023

Free PMC article

Abstract

Background: Asthma exacerbations reflect disease severity, affect morbidity and mortality, and may lead to declining lung function. Inflammatory endotypes (*e.g.* T2-high (eosinophilic)) may play a key role in asthma exacerbations. We aimed to assess whether genetic susceptibility underlies asthma exacerbation risk and additionally tested for an interaction between genetic variants and eosinophilia on exacerbation risk.

Methods: UK Biobank data were used to perform a genome-wide association study of individuals with asthma and at least one exacerbation compared to individuals with asthma and no history of exacerbations. Individuals with asthma were identified using self-reported data, hospitalisation data and general practitioner records. Exacerbations were identified as either asthma-related hospitalisation, general practitioner record of asthma exacerbation or an oral corticosteroid burst prescription. A logistic regression model adjusted for age, sex, smoking status and genetic ancestry *via* principal components was used to assess the association between genetic variants and asthma exacerbations. We sought replication for suggestive associations ($p<5\times10^{-6}$) in the GERA cohort.

Results: In the UK Biobank, we identified 11 604 cases and 37 890 controls. While no variants reached genome-wide significance ($p<5\times10^{-8}$) in the primary analysis, 116 signals were suggestively significant ($p<5\times10^{-6}$). In GERA, two single nucleotide polymorphisms (rs34643691 and rs149721630) replicated ($p<0.05$), representing signals near the NTRK3 and ABCA13 genes.

Conclusions: Our study has identified reproducible associations with asthma exacerbations in the UK Biobank and GERA cohorts. Confirmation of these findings in different asthma subphenotypes in diverse ancestries and functional investigation will be required to understand their mechanisms of action and potentially inform therapeutic development.

Conflict of interest statement

Conflict of interest: M. Tobin received funding from Orion Pharma and GSK, outside the submitted work. Conflict of interest: L. Lahousse received consulting from AstraZeneca, and

honoraria from IPSA vzw and Chiesi, all outside the submitted work; and is a leading member of the European and Belgian Respiratory Societies. Conflict of interest: A. Edris, K. Voorhies, A.C. Wu, S.M. Lutz, I. Hall, C. Iribarren and K. Fawcett declare no conflict of interest.

- 61 references
- 4 figures

full text links

Proceed to details

Cite

Share

13
Nat Med
.
. 2024 Jan 9.

doi: 10.1038/s41591-023-02743-4. Online ahead of print.

Health effects associated with exposure to secondhand smoke: a Burden of Proof study

Luisa S Flor[1,2], Jason A Anderson[3], Noah Ahmad[3], Aleksandr Aravkin[3,4], Sinclair Carr[3], Xiaochen Dai[3], Gabriela F Gil[3,5], Simon I Hay[3,4], Matthew J Malloy[3], Susan A McLaughlin[3], Erin C Mullany[3], Christopher J L Murray[3,4], Erin M O'Connell[3], Chukwuma Okereke[3], Reed J D Sorenson[3], Joanna Whisnant[3], Peng Zheng[3,4], Emmanuela Gakidou[3,4]

Affiliations expand

- PMID: 38195750

- DOI: 10.1038/s41591-023-02743-4

Abstract

Despite a gradual decline in smoking rates over time, exposure to secondhand smoke (SHS) continues to cause harm to nonsmokers, who are disproportionately children and women living in low- and middle-income countries. We comprehensively reviewed the literature published by July 2022 concerning the adverse impacts of SHS exposure on nine health outcomes. Following, we quantified each exposure-response association accounting for various sources of uncertainty and evaluated the strength of the evidence supporting our analyses using the Burden of Proof Risk Function methodology. We found all nine health outcomes to be associated with SHS exposure. We conservatively estimated that SHS increases the risk of ischemic heart disease, stroke, type 2 diabetes and lung cancer by at least around 8%, 5%, 1% and 1%, respectively, with the evidence supporting these harmful associations rated as weak (two stars). The evidence supporting the harmful associations between SHS and otitis media, asthma, lower respiratory infections, breast cancer and chronic obstructive pulmonary disease was weaker (one star). Despite the weak underlying evidence for these associations, our results reinforce the harmful effects of SHS on health and the need to prioritize advancing efforts to reduce active and passive smoking through a combination of public health policies and education initiatives.

- 470 references

full text links

Proceed to details

Cite

Share

14
Sci Rep
.
. 2024 Jan 10;14(1):940.

doi: 10.1038/s41598-024-51637-z.

Association between body mass index and respiratory symptoms in US adults: a national cross-sectional study

Yuefeng Sun[#1], Yueyang Zhang[#1], Xiangyang Liu[#2], Yingying Liu[3], Fan Wu[2], Xue Liu[4]

Affiliations expand

- PMID: 38195711
- PMCID: PMC10776771
- DOI: 10.1038/s41598-024-51637-z

Free PMC article

Abstract

The correlation between body mass index (BMI) and the development of cough, shortness of breath, and dyspnea is unclear. Therefore, this study aimed to investigate the association between these parameters. Data from individuals who participated in the National Health and Nutrition Examination Survey between 2003 and 2012 were analyzed. Weighted logistic regression analysis and smoothed curve fitting were used to examine the correlation between BMI and respiratory symptoms. In addition, the relationship between BMI, chronic obstructive pulmonary disease (COPD), and bronchial asthma was examined. Stratified analysis was used to discover inflection points and specific groups. Weighted logistic regression and smoothed curve fitting revealed a U-shaped relationship between BMI and respiratory symptoms. The U-shaped relationship in BMI was also observed in patients with bronchial asthma and COPD. Stratified analysis showed that the correlation between BMI and wheezing and dyspnea was influenced by race. In addition, non-Hispanic black individuals had a higher risk of developing cough than individuals of the other three races [OR 1.040 (1.021, 1.060), $p < 0.0001$], and they also exhibited an inverted U-shaped relationship between BMI and bronchial asthma. However, the association of BMI with cough, wheezing, dyspnea, COPD, and asthma was not affected by sex. High or low BMI was associated with cough, shortness of breath, and dyspnea, and has been linked to bronchial asthma and COPD. These findings provide new insights into the management of respiratory symptoms and respiratory diseases.

Conflict of interest statement

The authors declare no competing interests.

- 38 references
- 3 figures

supplementary info

MeSH terms, Grants and fundingexpand

full text links

Proceed to details

Cite

Share

15
Thorax
.
. 2024 Jan 9:thorax-2023-220972.

doi: 10.1136/thorax-2023-220972. Online ahead of print.

Type-2 inflammation and lung function decline in chronic airway disease in the general population

Yunus Çolak[1 2 3], Shoaib Afzal[2 3 4], Jacob Louis Marott[5], Jørgen Vestbo[6], Børge Grønne Nordestgaard[2 3 4 5], Peter Lange[7 2 3 5 8]

Affiliations expand

- PMID: 38195642

- DOI: 10.1136/thorax-2023-220972

Abstract

Background: It is unclear if type-2 inflammation is associated with accelerated lung function decline in individuals with asthma and chronic obstructive pulmonary disease (COPD). We tested the hypothesis that type-2 inflammation indicated by elevated blood eosinophils (BE) and fraction of exhaled nitric oxide (FeNO) is associated with accelerated lung function decline in the general population.

Methods: We included adults from the Copenhagen General Population Study with measurements of BE (N=15 605) and FeNO (N=2583) from a follow-up examination and

assessed forced expiratory volume in 1 s (FEV_1) decline in the preceding 10 years. Based on pre- and post-bronchodilator lung function, smoking history and asthma at follow-up examination, participants were assigned as not having airway disease, asthma with full reversibility (AR), asthma with persistent obstruction (APO), COPD, and not classifiable airflow limitation (NAL).

Results: FEV_1 decline in mL/year increased with 1.0 (95% CI 0.6 to 1.4, p<0.0001) per 100 cells/µL higher BE and with 3.2 (95% CI 2.0 to 4.5, p<0.0001) per 10 ppb higher FeNO. Adjusted FEV_1 decline in mL/year was 18 (95% CI 17 to 20) in those with BE<300 cells/µL and FeNO<20 ppb, 22 (19-25) in BE≥300 cells/µL or FeNO≥20 ppb, and 27 (21-33) in those with BE≥300 cells/µL and FeNO≥20 ppb (p for trend<0.0001). Corresponding FEV_1 declines were 24 (19-29), 33 (25-40) and 44 (31-56) in AR (0.002), 26 (14-37), 36 (12-60) and 56 (24-89) in APO (0.07), 32 (27-36), 31 (24-38) and 44 (24-65) in COPD (0.46), and 27 (21-33), 35 (26-45), and 37 (25-49) in NAL (0.10), respectively.

Conclusions: Type-2 inflammation indicated by elevated BE and FeNO is associated with accelerated FEV_1 decline in individuals with chronic airway disease in the general population, and this association was most pronounced in an asthma-like phenotype.

Keywords: Asthma Epidemiology; Asthma Mechanisms; COPD Pathology; COPD epidemiology; Clinical Epidemiology.

Conflict of interest statement

Competing interests: YÇ reports grants from Sanofi and personal fees from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline and Sanofi outside the submitted work. JV reports personal fees from ALK, AstraZeneca, Boehringer-Ingelheim, Chiesi, GlaxoSmithKline and Teva outside the submitted work. PL reports grants and personal fees from AstraZeneca and Sanofi and personal fees from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, and Sanofi outside the submitted work. SA, JLM and BGN have nothing to disclose.

Ann Am Thorac Soc

. 2024 Jan 9.

doi: 10.1513/AnnalsATS.202306-551OC. Online ahead of print.

Bronchiectasis with Chronic Rhinosinusitis Is Associated with Eosinophilic Airway Inflammation and Is Distinct from Asthma

Michal Shteinberg[1,2], James D Chalmers[3], Jayanth K Narayana[4], Alison J Dicker[5], Michal A Rahat[6,7], Elina Simanovitch[8], Lucy Bidgood[3], Shai Cohen[9,7], Nili Stein[10], Nizar Abo-Hilu[11], James Abbott[3], Sharon Avital[12], Einat Fireman-Klein[13], Hollian Richardson[14], Emad Muhammad[15], Jenny Jrbashyan[16], Sonia Schneer[17], Najwan Nasrallah[18], Iya Eisenberg[18], Sanjay H Chotirmall[4,19], Yochai Adir[17,20]

Affiliations expand

- PMID: 38194593

- DOI: 10.1513/AnnalsATS.202306-551OC

Abstract

Rationale: Bronchiectasis is an airway inflammatory disease frequently associated with chronic rhinosinusitis (CRS). An eosinophilic endotype of bronchiectasis has recently been described, but detailed testing to differentiate eosinophilic bronchiectasis from asthma has not been performed.

Objective: This prospective observational study aimed to test the hypotheses that bronchiectasis with CRS is enriched for the eosinophilic phenotype in comparison with bronchiectasis alone and that the eosinophilic bronchiectasis phenotype exists as a separate entity from bronchiectasis associated with asthma.

Methods: People with idiopathic or post-infectious bronchiectasis were assessed for concomitant CRS. We excluded people with asthma, PCD, and smokers. We assessed sputum and blood cell counts, nasal NO and fractional excreted NO, methacholine reactivity, skin allergy testing and total and specific IgE, cytokines in sputum and serum, and microbiome in sputum and nasopharynx.

Results: 22 people with CRS (BE+CRS) and 17 without CRS (BE-CRS) were included. Sex, age, Reiff score, and bronchiectasis severity were similar. Median (IQR) sputum eosinophil percentages were 0 (0-1.5)% in BE-CRS, and 3(1-12)% in BE+CRS (p=0.012). Blood eosinophil counts were predictive of sputum eosinophilia (counts ≥3%; AUC 0.68, 95% CI 0.50-0.85) inclusion of CRS improved the prediction of sputum eosinophilia by blood eosinophils (AUC 0.79 (95%CI 0.65-0.94). Methacholine tests were negative in 85.7% BE-CRS and 85.2% BE+CRS (p>0.99). Specific IgE and skin testing were similar between the groups, but total IgE levels were elevated in people with elevated sputum eosinophils. Microbiome analysis demonstrated distinct microbiota in nasopharyngeal and airway samples in both BE+CRS and BE-CRS without significant differences between groups, however, interactome analysis revealed altered interactomes in individuals with high sputum eosinophils and CRS.

Conclusion: Bronchiectasis with CRS is associated with an eosinophilic airway inflammation that is distinct from asthma.

17
J Asthma
.
. 2024 Jan 9:1-13.

doi: 10.1080/02770903.2024.2303753. Online ahead of print.

Factors associated with emergency department visits for asthma resulting in hospital admission- United States, 2020

Xiaoting Qin[1], Cynthia A Pate[1], Hatice S Zahran[1]

Affiliations expand

- PMID: 38193801

- DOI: 10.1080/02770903.2024.2303753

Abstract

ObjectiveTo identify risk factors associated with hospital admission following an ED visit for asthma at the time of discharge among U.S. children and adults.MethodsAsthma emergency department visits resulting in hospital admissions using discharge data among children (aged 0-17 years) and adults (aged 18 years or older) from the 2020 Nationwide Emergency Department Sample (NEDS), Healthcare Cost and Utilization Project (HCUP), Agency for Healthcare Research and Quality were examined. Risk factors associated with hospital admission following ED visits were identified using univariable and multi-variable logistic regression models.ResultsAmong children, hospital admission after asthma-related ED visits was higher for females, ages less than 12 years, and discharged in January-March or in October-December and lower for Black children, Hispanic children, Medicaid or Medicare beneficiaries, other/no charge/self-pay, and in metropolitan non-teaching or non-metropolitan hospitals. Among adults, asthma ED visits resulting in hospital admissions were higher for females, ages 35 years or older, discharged in January-March, and for Medicare beneficiaries and lower for Black adults, Hispanic adults, adults of other races, other/no charge/self-pay, in metropolitan non-teaching or non-metropolitan hospitals, and median household income quartiles for patient's ZIP Code of less than $59,000 were lower.ConclusionsSociodemographic factors, healthcare use, and household income were significantly associated with hospital admissions at the time of discharge from the ED. Examining hospital admission after an ED visit for asthma is important in identifying these groups and better addressing their healthcare needs.

Keywords: Healthcare use; adults; children; disparities; respiratory diseases.

18
Am J Respir Cell Mol Biol
.
.
.
. 2024 Jan 8.

doi: 10.1165/rcmb.2023-0176PS. Online ahead of print.

Extracellular Matrix as a Driver of Chronic Lung Diseases

Janette K Burgess[1], Daniel J Weiss[2], Gunilla Westergren-Thorsson[3], Jenny Wigen[4], Charlotte H Dean[5], Sharon Mumby[6], Andrew Bush[7], Ian M Adcock[8]

Affiliations expand

- PMID: 38190723

- DOI: 10.1165/rcmb.2023-0176PS

Abstract

The extracellular matrix (ECM) is not just a 3 dimensional scaffold that provides stable support for all cells in the lungs but is also an important component of chronic fibrotic airways, vascular, and interstitial diseases. It is a bioactive entity that is dynamically modulated during tissue homeostasis and disease, which controls structural and immune cell functions, drug responses, and which can release fragments that have biological activity and that can be used to monitor disease activity. There is a growing recognition of the importance of considering ECM changes in chronic airways, vascular, and interstitial diseases including (i) compositional changes, (ii) structural and organizational changes, and (iii) mechanical changes -and how these impact on disease pathogenesis. Since altered ECM biology is an important component of many lung diseases, disease models must incorporate this factor to fully recapitulate disease-driver pathways and to study potential novel therapeutic interventions. While novel models are evolving that capture some or all of the elements of the altered ECM microenvironment in lung diseases, opportunities exist to more fully understand cell-ECM interactions that will help devise future therapeutic targets to restore function in chronic lung diseases. In this perspective article, we review evolving knowledge about the ECM's role in homeostasis and disease in the lung.

Keywords: extracellular matrix , Asthma , COPD , IPF , remodeling.

Am J Respir Crit Care Med

. 2024 Jan 8.

doi: 10.1164/rccm.202312-2248ED. Online ahead of print.

Bronchodilator Responsiveness in Asthma and COPD: Time to Stop Chasing Shadows

David M G Halpin[1,2]

Affiliations expand

- PMID: 38190497

- DOI: 10.1164/rccm.202312-2248ED

No abstract available

Keywords: Asthma; Bronchodilator response; COPD; Diagnosis.

20
Br J Nutr

. 2024 Jan 14;131(1):143-155.

doi: 10.1017/S0007114523001605. Epub 2023 Jul 20.

Longitudinal analysis of the Alternative Healthy Eating Index-2010 and incident non-communicable diseases over 15 years in the 1973-1978 cohort of the Australian Longitudinal Study on Women's Health

Hlaing Hlaing-Hlaing[1,2], Xenia Dolja-Gore[1,2], Meredith Tavener[1,2], Alexis J Hure[1,2]

Affiliations expand

- PMID: 37470131

- DOI: 10.1017/S0007114523001605

Abstract

In studies that contain repeated measures of variables, longitudinal analysis accounting for time-varying covariates is one of the options. We aimed to explore longitudinal association between diet quality (DQ) and non-communicable diseases (NCDs). Participants from the 1973-1978 cohort of the Australian Longitudinal Study on Women's Health (ALSWH) were included, if they; responded to survey 3 (S3, 2003, aged 25-30 years) and at least one survey between survey 4 (S4, 2006) and survey 8 (S8, 2018), were free of NCDs at or before S3, and provided dietary data at S3 or S5. Outcomes were coronary heart disease (CHD), hypertension (HT), asthma, cancer (except skin cancer), diabetes mellitus (DM), depression and/or anxiety, and multimorbidity (MM). Longitudinal modelling using generalised estimation equation (GEE) approach with time-invariant (S4), time-varying (S4-S8) and lagged (S3-S7) covariates were performed. The mean (± standard deviation) of Alternative Healthy Eating Index-2010 (AHEI-2010) of participants (n = 8022) was 51·6 ± 11·0 (range: 19-91). Compared to women with the lowest DQ (AHEI-2010 quintile 1), those in quintile 5 had reduced odds of NCDs in time-invariant model (asthma: OR (95 % CI): 0·77 (0·62-0·96), time-varying model (HT: 0·71 (0·50-0·99); asthma: 0·62 (0·51-0·76); and MM: 0·75 (0·58-0·97) and lagged model (HT: 0·67 (0·49-0·91); and asthma: 0·70 (0·57-0·85). Temporal associations between diet and some NCDs were more prominent in lagged GEE analyses. Evidence of diet as NCD prevention in women aged 25-45 years is evolving, and more studies that consider different longitudinal analyses are needed.

Keywords: Childbearing age; Diet quality; Longitudinal analysis; Multimorbidity; Non-communicable disease; Young women.

supplementary info

MeSH termsexpand

full text links

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

1
Ear Nose Throat J
.
. 2024 Jan 11:1455613231222363.

doi: 10.1177/01455613231222363. Online ahead of print.

Investigating Experimental Treatments for Rhinitis: A State-of-the-Art Systematic Review

Zouina Sarfraz[1], Azza Sarfraz[2], Ivan Cherrez-Ojeda[3]

Affiliations expand

- PMID: 38205635
- DOI: 10.1177/01455613231222363

Free article

Abstract

Background: Rhinitis is a common inflammatory condition that affects the nasal passages, significantly impacting quality of life and placing a considerable burden on healthcare systems. While traditional treatments offer limited relief, there is a growing interest in novel therapies. This systematic review aims to analyze investigational new treatments for rhinitis. **Methods:** A search was conducted in ClinicalTrials.gov, the World Health Organization International Clinical Trials Registry Platform, and the European Union Clinical Trials Register, as well as PubMed, Web of Science, and the Cochrane Library. Both ongoing and completed clinical trials exploring innovative therapies for rhinitis, including immunotherapy, probiotics, and stem cell therapy, were included. **Results:** This systematic review compiled information from 74 clinical trials-51 completed and 23 ongoing-focused

on new treatments for rhinitis. A significant portion of the completed studies (44) focused on various forms of immunotherapy, which showed potential for long-term effectiveness and had a high safety profile. Another seven completed trials investigated probiotics as a treatment method, yielding mixed results, though they did show promise in managing symptoms, particularly when combined with other treatments. The ongoing trials are primarily investigating immunotherapy, with a smaller number looking at probiotics and stem cell therapy. This shows a continued exploration of innovative and diverse therapies for managing rhinitis. **Conclusion:** This study highlights the potential of emerging rhinitis therapies to improve patient outcomes and enhance quality of life. Continued research is recommended for developing more effective, personalized, and targeted therapeutic strategies for rhinitis.

Keywords: clinical trials; immunotherapy; probiotics; rhinitis; stem cell therapy; targeted therapies.

Conflict of interest statement

Declaration of Conflicting InterestsThe authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

2
Clin Drug Investig
. 2024 Jan 9.

doi: 10.1007/s40261-023-01338-8. Online ahead of print.

A Real-World Observational Study to Evaluate the Safety and Effectiveness of Fluticasone Furoate-Oxymetazoline Fixed

Dose Combination Nasal Spray in Patients with Allergic Rhinitis

Meenesh R Juvekar[1], Gauri Kapre Vaidya[2], Aniruddha Majumder[3], Amod D Pendharkar[4], Anthony Irudhayarajan[5], Avijit Kundu[6], D Ramesh[7], J Dheeraj Kumar[8], B Jagannatha[9], Joseph Mathew[10], Mahesh P Nikam[11], Madhuri Mehta[12], Neeraj Chawla[13], Priti Hajare[14], P G Chandre Gowda[15], P V L N Murthy[16], Suma Moni Mathew[17], Makarand V Damle[18], Chandra Kant[19], Arun B Nair[20], Ashok Jaiswal[21], Ravi T Mehta[22]

Affiliations expand

- PMID: 38195833

- DOI: 10.1007/s40261-023-01338-8

Abstract

Background: Allergic rhinitis (AR) has shown an increasing prevalence leading to a considerable medical and social burden. Nasal congestion is the cardinal symptom of AR, and the upper respiratory tract is most affected by this long-lasting ailment. Intranasal corticosteroids alleviate nasal congestion, along with other symptoms of AR, but their effect is not evident immediately. Oxymetazoline has a rapid onset of action, but its use should be limited to 3-5 days.

Objective: The study aimed to evaluate the safety and effectiveness of the fixed-dose combination nasal spray containing fluticasone furoate and oxymetazoline hydrochloride (FF + OXY) 27.5/50 mcg once daily in patients with AR in a real-world clinical setting.

Methods: The study was a prospective, open-label, single-arm, multicenter, real-world observational study conducted in patients with AR for a period of 28 days. Patients (n = 388) with a diagnosis of AR were treated with a combination of FF + OXY nasal spray. Total nasal symptom score (TNSS), total ocular symptom score (TOSS) and total symptom score (TSS) were documented at baseline and at the end of study period. The overall effectiveness of treatment with FF + OXY was rated by the investigators as very good/good/satisfactory/poor (4-point Likert scale) for each patient.

Results: Treatment with FF + OXY resulted in significant reduction in the TNSS, TOSS and TSS, from 7.18 ± 3.38 at baseline to 0.20 ± 0.84 ($p < 0.001$), from 2.34 ± 2.29 at baseline to 0.09 ± 0.53 ($p < 0.001$), from 9.51 ± 4.94 at baseline to 0.29 ± 1.32 ($p < 0.001$) at 28 days respectively. With respect to effectiveness, the investigators reported very good effectiveness in 52.12% of patients. No serious adverse events were reported.

Conclusion: The fixed-dose combination of once-daily fluticasone furoate and oxymetazoline hydrochloride nasal spray 27.5/50 mcg was effective in relieving the nasal

congestion and reduction of TNSS, TOSS and TSS in patients suffering from AR. The combination was safe and well tolerated with no rebound congestion throughout the treatment period.

- 13 references

full text links

chronic cough

1
Sci Rep
.
. 2024 Jan 10;14(1):940.

doi: 10.1038/s41598-024-51637-z.

Association between body mass index and respiratory symptoms in US adults: a national cross-sectional study

Yuefeng Sun[#1], Yueyang Zhang[#1], Xiangyang Liu[#2], Yingying Liu[3], Fan Wu[2], Xue Liu[4]

Affiliations expand

- PMID: 38195711
- PMCID: PMC10776771
- DOI: 10.1038/s41598-024-51637-z

Free PMC article

Abstract

The correlation between body mass index (BMI) and the development of cough, shortness of breath, and dyspnea is unclear. Therefore, this study aimed to investigate the

association between these parameters. Data from individuals who participated in the National Health and Nutrition Examination Survey between 2003 and 2012 were analyzed. Weighted logistic regression analysis and smoothed curve fitting were used to examine the correlation between BMI and respiratory symptoms. In addition, the relationship between BMI, chronic obstructive pulmonary disease (COPD), and bronchial asthma was examined. Stratified analysis was used to discover inflection points and specific groups. Weighted logistic regression and smoothed curve fitting revealed a U-shaped relationship between BMI and respiratory symptoms. The U-shaped relationship in BMI was also observed in patients with bronchial asthma and COPD. Stratified analysis showed that the correlation between BMI and wheezing and dyspnea was influenced by race. In addition, non-Hispanic black individuals had a higher risk of developing cough than individuals of the other three races [OR 1.040 (1.021, 1.060), $p < 0.0001$], and they also exhibited an inverted U-shaped relationship between BMI and bronchial asthma. However, the association of BMI with cough, wheezing, dyspnea, COPD, and asthma was not affected by sex. High or low BMI was associated with cough, shortness of breath, and dyspnea, and has been linked to bronchial asthma and COPD. These findings provide new insights into the management of respiratory symptoms and respiratory diseases.

Conflict of interest statement

The authors declare no competing interests.

- 38 references
- 3 figures

supplementary info

MeSH terms, Grants and fundingexpand

full text links

Proceed to details

Cite

Share

2

Review

Aliment Pharmacol Ther

. 2024 Jan 8.

doi: 10.1111/apt.17858. Online ahead of print.

Review article: Diagnosis and management of laryngopharyngeal reflux

Amanda J Krause[1], Rena Yadlapati[1]

Affiliations expand

- PMID: 38192086

- DOI: 10.1111/apt.17858

Abstract

Background: Laryngopharyngeal reflux has classically referred to gastroesophageal reflux leading to chronic laryngeal symptoms such as throat clearing, dysphonia, cough, globus sensation, sore throat or mucus in the throat. Current lack of clear diagnostic criteria significantly impairs practitioners' ability to identify and manage laryngopharyngeal reflux.

Aims: To discuss current evidence-based diagnostic and management strategies in patients with laryngopharyngeal reflux.

Methods: We selected studies primarily based on current guidelines for gastroesophageal reflux disease and laryngopharyngeal reflux, and through PubMed searches.

Results: We assess the current diagnostic modalities that can be used to determine if laryngopharyngeal reflux is the cause of a patient's laryngeal symptoms, as well as review some of the common treatments that have been used for these patients. In addition, we note that the lack of a clear diagnostic gold-standard, as well as specific diagnostic criteria, significantly limit clinicians' ability to determine adequate therapies for these patients. Finally, we identify areas of future research that are needed to better manage these patients.

Conclusions: Patients with chronic laryngeal symptoms are complex due to the heterogenous nature of symptom pathology, inconsistent definitions and variable response to therapies. Further outcomes data are critically needed to help elucidate ideal diagnostic workup and therapeutic management for these challenging patients.

Keywords: GERD or GORD; acidity (oesophageal); diagnostic tests; oesophagus.

- 137 references

supplementary info

Publication types, Grants and fundingexpand

full text links

Proceed to details

Cite

Share

3
Meta-Analysis

Cochrane Database Syst Rev

. 2024 Jan 8;1(1):CD010216.

doi: 10.1002/14651858.CD010216.pub8.

Electronic cigarettes for smoking cessation

Nicola Lindson[1], Ailsa R Butler[1], Hayden McRobbie[2], Chris Bullen[3], Peter Hajek[4], Rachna Begh[1], Annika Theodoulou[1], Caitlin Notley[5], Nancy A Rigotti[6], Tari Turner[7], Jonathan Livingstone-Banks[1], Tom Morris[8], Jamie Hartmann-Boyce[9]

Affiliations expand

- PMID: 38189560

- PMCID: PMC10772980 (available on 2025-01-08)

- DOI: 10.1002/14651858.CD010216.pub8

Abstract

Background: Electronic cigarettes (ECs) are handheld electronic vaping devices which produce an aerosol by heating an e-liquid. People who smoke, healthcare providers and regulators want to know if ECs can help people quit smoking, and if they are safe to use for this purpose. This is a review update conducted as part of a living systematic review.

Objectives: To examine the safety, tolerability and effectiveness of using electronic cigarettes (ECs) to help people who smoke tobacco achieve long-term smoking abstinence, in comparison to non-nicotine EC, other smoking cessation treatments and no treatment.

Search methods: We searched the Cochrane Tobacco Addiction Group's Specialized Register to 1 February 2023, and Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, Embase, and PsycINFO to 1 July 2023, and reference-checked and contacted study authors.

Selection criteria: We included trials in which people who smoke were randomized to an EC or control condition. We also included uncontrolled intervention studies in which all participants received an EC intervention as these studies have the potential to provide further information on harms and longer-term use. Studies had to report an eligible outcome.

Data collection and analysis: We followed standard Cochrane methods for screening and data extraction. Critical outcomes were abstinence from smoking after at least six months, adverse events (AEs), and serious adverse events (SAEs). We used a fixed-effect Mantel-Haenszel model to calculate risk ratios (RRs) with a 95% confidence interval (CI) for dichotomous outcomes. For continuous outcomes, we calculated mean differences. Where appropriate, we pooled data in pairwise and network meta-analyses (NMA).

Main results: We included 88 completed studies (10 new to this update), representing 27,235 participants, of which 47 were randomized controlled trials (RCTs). Of the included studies, we rated ten (all but one contributing to our main comparisons) at low risk of bias overall, 58 at high risk overall (including all non-randomized studies), and the remainder at unclear risk. There is high certainty that nicotine EC increases quit rates compared to nicotine replacement therapy (NRT) (RR 1.59, 95% CI 1.29 to 1.93; I^2 = 0%; 7 studies, 2544 participants). In absolute terms, this might translate to an additional four quitters per 100 (95% CI 2 to 6 more). There is moderate-certainty evidence (limited by imprecision) that the rate of occurrence of AEs is similar between groups (RR 1.03, 95% CI 0.91 to 1.17; I^2 = 0%; 5 studies, 2052 participants). SAEs were rare, and there is insufficient evidence to determine whether rates differ between groups due to very serious imprecision (RR 1.20, 95% CI 0.90 to 1.60; I^2 = 32%; 6 studies, 2761 participants; low-certainty evidence). There is moderate-certainty evidence, limited by imprecision, that nicotine EC increases quit rates

compared to non-nicotine EC (RR 1.46, 95% CI 1.09 to 1.96; I^2 = 4%; 6 studies, 1613 participants). In absolute terms, this might lead to an additional three quitters per 100 (95% CI 1 to 7 more). There is moderate-certainty evidence of no difference in the rate of AEs between these groups (RR 1.01, 95% CI 0.91 to 1.11; I^2 = 0%; 5 studies, 1840 participants). There is insufficient evidence to determine whether rates of SAEs differ between groups, due to very serious imprecision (RR 1.00, 95% CI 0.56 to 1.79; I^2 = 0%; 9 studies, 1412 participants; low-certainty evidence). Due to issues with risk of bias, there is low-certainty evidence that, compared to behavioural support only/no support, quit rates may be higher for participants randomized to nicotine EC (RR 1.88, 95% CI 1.56 to 2.25; I^2 = 0%; 9 studies, 5024 participants). In absolute terms, this represents an additional four quitters per 100 (95% CI 2 to 5 more). There was some evidence that (non-serious) AEs may be more common in people randomized to nicotine EC (RR 1.22, 95% CI 1.12 to 1.32; I^2 = 41%, low-certainty evidence; 4 studies, 765 participants) and, again, insufficient evidence to determine whether rates of SAEs differed between groups (RR 0.89, 95% CI 0.59 to 1.34; I^2 = 23%; 10 studies, 3263 participants; very low-certainty evidence). Results from the NMA were consistent with those from pairwise meta-analyses for all critical outcomes, and there was no indication of inconsistency within the networks. Data from non-randomized studies were consistent with RCT data. The most commonly reported AEs were throat/mouth irritation, headache, cough, and nausea, which tended to dissipate with continued EC use. Very few studies reported data on other outcomes or comparisons, hence, evidence for these is limited, with CIs often encompassing both clinically significant harm and benefit.

Authors' conclusions: There is high-certainty evidence that ECs with nicotine increase quit rates compared to NRT and moderate-certainty evidence that they increase quit rates compared to ECs without nicotine. Evidence comparing nicotine EC with usual care/no treatment also suggests benefit, but is less certain due to risk of bias inherent in the study design. Confidence intervals were for the most part wide for data on AEs, SAEs and other safety markers, with no difference in AEs between nicotine and non-nicotine ECs nor between nicotine ECs and NRT. Overall incidence of SAEs was low across all study arms. We did not detect evidence of serious harm from nicotine EC, but the longest follow-up was two years and the number of studies was small. The main limitation of the evidence base remains imprecision due to the small number of RCTs, often with low event rates. Further RCTs are underway. To ensure the review continues to provide up-to-date information to decision-makers, this review is a living systematic review. We run searches monthly, with the review updated when relevant new evidence becomes available. Please refer to the Cochrane Database of Systematic Reviews for the review's current status.

Conflict of interest statement

RB holds a National Institiute for Health Research (NIHR) grant, but this did not directly fund this current work. RB is also supported by Cancer Research UK. She is principal investigator of an ongoing study listed in this review.
CB was principal investigator on the ASCEND e-cigarette trial reported in the Cochrane Review and a co-investigator on the ASCEND II trial and several other studies included in the review. CB reports research grants from the Health Research Council of NZ, the Heart Foundation of NZ and the NZ Ministry of Health (Monitoring the Illicit Tobacco Trade in NZ), the NZ Ministry of Foreign Affairs and Trade (estimating the numbers of tobacco and vaping retailers in NZ) and Auckland Council (Evaluation of the Smokefree Auckland Project). CB reports research grants from: Wellcome Trust UK, REFLECT Cool roofing trial; Health Research Council of NZ, Cess@tion trial, FASD studies; The University of Auckland Transdisciplinary Ideation Fund for The Collective website; Putahi Manawa Centre for Research Excellence in Heart Health Integrated Research Module grant; US NIH (via Wake Forest University): CENIC study; Education NZ Smoking cessation in China; Marsden Fund (NZ): Respiratory effects of vaping. He has recently led a project funded by Pfizer (NZ) on chronic disease management. CB is President of the Society for Research on Nicotine & Tobacco; Member of the Expert Working Group on Tobacco, Health Coalition Aotearoa; Member of the Scientific Advisory Committee of the Cancer Society of NZ; Member of the Scientific Advisory Committee of the RESPIRE research programme, University of Edinburgh; Member of the CREATE Tobacco Endgame Centre of Research Excellence, Australia. CB has carried out independent contractor consultancy for Johnson and Johnson in 2020 on NRT and to Kervue Inc. regarding setting up an ASEAN regional smoking cessation networking board.
ARB's work on this review has been supported by Cancer Research UK Project Award funding. This is not deemed a conflict of interest.
PH was principal investigator on three of the trials included in this review two funded by NIHR and one by CRUK and co-investigator on other relevant studies.
JHB has received support for this work from the Cochrane Review Support Programme and the University of Oxford's Returning Carer's Fund. JHB been an applicant and pricipal investigator on project grants to carry out research in the area of tobacco control from National Institute for Health Research and Cancer Research UK. None of these are deemed conflicts of interest.
NL has received payment for lectures on systematic review methodology (Oxford University Hospitals NHS Foundation Trust), and has been an applicant and pricipal investigator on project funding to carry out research in the area of tobacco control from the NIHR Evidence Synthesis programme, Cancer Research UK (charity), Clarion Futures (charity), Oxfordshire County Council and the NIHR Oxfordshire and Thames Valley ARC, and Greater Manchester NHS Integrated Care. None of this is deemed a conflict of interest.
JLB was employed by the University of Oxford to work as a Managing Editor and Information Specialist for the Cochrane Tobacco Addiction Review Group before becoming an author on this review. During this time, he was involved in the editorial processing of the review. He is now an Editor for Cochrane. Since becoming an author, he has not been involved in the editorial process for this review. Core infrastructure funding for the Cochrane Tobacco Addiction Group was provided by the NIHR to the University of Oxford.

HM is an employee of Te Whatu Ora-Health New Zealand. HM holds fellowships with New Zealand College of Public Health Medicine (NZCPHM represents public health medicine specialists); and the Society of Lifestyle Medicine. HM is a Professor in Public Health Interventions, University of New South Wales, National Drug and Alcohol Research Centre and provide mentorship and advice for the Tobacco Research Group. He is currently a named investigator on three smoking cessation trials that are all funded by the Australian National Health and Medical Research Council (NHMRC). HM is a named investigator of a smoking cessation trial at Queen Mary University of London, funded by the National Institute of Health Research. HM is a named investigator of a study that examines an approach to prevent e-cigarette use among adolescents at University of Sydney, funded by the Australian National Health and Medical Research Council (NHMRC). HM is a co-investigator on a number of studies included in this review. HM is a board Member, Rotorua Community Youth Centre Trust.
CN has received an honorarium from Vox Media for filming a 'nicotine explainer' on the role of nicotine in addiction. This is not deemed a conflict of interest. CN is a member of the advisory council for 'Action on Smoking and Health (ASH)'. CN is co-PI on an ongoing trial (protocol) Cessation of Smoking Trial in the Emergency Department (CoSTED) - National Institute for Health Research - Health Technology Assessment. NIHR129438.
TM is funded by the National Institute for Health Research (NIHR) Complex Reviews Support Unit (CRSU) and supported by the NIHR Applied Research Collaboration East Midlands (ARC EM) and Leicester Biomedical Research Centre (BRC). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.
NAR has received royalties from UpToDate, Inc. for chapters on electronic cigarettes and occasional fees from academic hospitals or professional medical societies for lectures on smoking cessation that include discussion of electronic cigarettes. NAR was a member of the committee that produced the 2018 National Academies of Science, Engineering, and Medicine's Consensus Study Report on the Public Health Benefits of E-cigarettes. She was unpaid for this work. NAR is employed by Massachusetts General Hospital (MGH). Outside the topic of e-cigarettes, NAR is a consultant for Achieve LifeSciences, which is developing an investigational smoking cessation medication for FDA approval (cytisine) and her institution (MGH) receives a grant from the company as a site for a clinical trial testing the safety and efficacy of cytisine. NAR holds grants from NIH for research work.
AT's work on this review has been supported by the Nuffield Department of Primary Care Health Sciences at the University of Oxford. This is not deemed a conflict of interest
TT has no known conflicts of interest.

Update of

- Electronic cigarettes for smoking cessation.
Hartmann-Boyce J, Lindson N, Butler AR, McRobbie H, Bullen C, Begh R, Theodoulou A, Notley C, Rigotti NA, Turner T, Fanshawe TR, Hajek P.Cochrane Database Syst Rev. 2022 Nov 17;11(11):CD010216. doi:

10.1002/14651858.CD010216.pub7.PMID: 36384212 **Free PMC article. Updated.** Review.

- 457 references

supplementary info

Publication types, MeSH terms, Substancesexpand

full text links

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

1

Ann Am Thorac Soc

-
-
-

. 2024 Jan 9.

doi: 10.1513/AnnalsATS.202306-551OC. Online ahead of print.

Bronchiectasis with Chronic Rhinosinusitis Is Associated with Eosinophilic Airway Inflammation and Is Distinct from Asthma

Michal Shteinberg[1,2], James D Chalmers[3], Jayanth K Narayana[4], Alison J Dicker[5], Michal A Rahat[6,7], Elina Simanovitch[8], Lucy Bidgood[3], Shai Cohen[9,7], Nili Stein[10], Nizar Abo-Hilu[11], James Abbott[3], Sharon Avital[12], Einat Fireman-Klein[13], Hollian Richardson[14], Emad Muhammad[15], Jenny Jrbashyan[16], Sonia Schneer[17], Najwan Nasrallah[18], Iya Eisenberg[18], Sanjay H Chotirmall[4,19], Yochai Adir[17,20]

Affiliations expand

- PMID: 38194593

- DOI: 10.1513/AnnalsATS.202306-551OC

Abstract

Rationale: Bronchiectasis is an airway inflammatory disease frequently associated with chronic rhinosinusitis (CRS). An eosinophilic endotype of bronchiectasis has recently been described, but detailed testing to differentiate eosinophilic bronchiectasis from asthma has not been performed.

Objective: This prospective observational study aimed to test the hypotheses that bronchiectasis with CRS is enriched for the eosinophilic phenotype in comparison with bronchiectasis alone and that the eosinophilic bronchiectasis phenotype exists as a separate entity from bronchiectasis associated with asthma.

Methods: People with idiopathic or post-infectious bronchiectasis were assessed for concomitant CRS. We excluded people with asthma, PCD, and smokers. We assessed sputum and blood cell counts, nasal NO and fractional excreted NO, methacholine reactivity, skin allergy testing and total and specific IgE, cytokines in sputum and serum, and microbiome in sputum and nasopharynx.

Results: 22 people with CRS (BE+CRS) and 17 without CRS (BE-CRS) were included. Sex, age, Reiff score, and bronchiectasis severity were similar. Median (IQR) sputum eosinophil percentages were 0 (0-1.5)% in BE-CRS, and 3(1-12)% in BE+CRS (p=0.012). Blood eosinophil counts were predictive of sputum eosinophilia (counts ≥3%; AUC 0.68, 95% CI 0.50-0.85) inclusion of CRS improved the prediction of sputum eosinophilia by blood eosinophils (AUC 0.79 (95%CI 0.65-0.94). Methacholine tests were negative in 85.7% BE-CRS and 85.2% BE+CRS (p>0.99). Specific IgE and skin testing were similar between the groups, but total IgE levels were elevated in people with elevated sputum eosinophils. Microbiome analysis demonstrated distinct microbiota in nasopharyngeal and airway samples in both BE+CRS and BE-CRS without significant differences between groups, however, interactome analysis revealed altered interactomes in individuals with high sputum eosinophils and CRS.

Conclusion: Bronchiectasis with CRS is associated with an eosinophilic airway inflammation that is distinct from asthma.

BMC Pulm Med

. 2024 Jan 8;24(1):20.

doi: 10.1186/s12890-023-02816-7.

The clinical characteristics of non-cystic fibrosis bronchiectasis patients with positive serum tumor markers: a retrospective study

Xiaoyue Wang[#1], Juan Wang[#2], Siqi He[#2], Jing Li[2], Xiaoting Chen[3], Tianyuan Ma[3], Lu Liu[4], Lei Zhang[5], Xiaoning Bu[6]

Affiliations expand

- PMID: 38191360
- PMCID: PMC10775564
- DOI: 10.1186/s12890-023-02816-7

Free PMC article

Abstract

Background: Serum tumor markers (STM), extensively used for the diagnosis, monitoring and prognostic assessment of tumors, can be increased in some non-malignant lung diseases. To date, there is a paucity of studies regarding the clinical characteristics of non-cystic fibrosis bronchiectasis patients with positive STMs.

Objective: To investigate the clinical characteristics and indicators of bronchiectasis with positive STMs.

Methods: The clinical data of 377 bronchiectasis patients was retrospectively collected from January 2017 to December 2019 from Beijing Chaoyang Hospital. Patients were divided into the STM negative group, the single STM positive group and the ≥2 STMs positive group according to the number of the positive STMs. The clinical characteristics are described and compared separately. The multivariate logistic regression analysis model was used to investigate the indicators regarding positive STMs.

Results: Patients in the ≥2 STMs positive group were older (P = 0.015), had higher mMRC scores (P < 0.001) and developed higher fever (P = 0.027). Additionally, these patients also had lower Albumin/Globulin Ratio (A/G), albumin (ALB), prealbumin (PAB) (P < 0.001, P < 0.001, P < 0.001, respectively) and higher CRP, ESR and Fbg (P < 0.001, P < 0.001 and P < 0.001, respectively). Age (OR 1.022, 95%CI 1.003-1.042; P = 0.026) and the number of affected lobes (OR 1.443, 95%CI 1.233-1.690; P < 0.001) were independently associated with one and ≥ 2 positive STMs in bronchiectasis patients.

Conclusion: The ≥2 positive STMs are associated with a higher inflammation status and severer radiologic manifestations in bronchiectasis patients.

Keywords: Bronchiectasis; Clinical characteristic; Indicators; Serum tumor marker.

Conflict of interest statement

The authors declare no competing interests.

- 31 references
- 3 figures

supplementary info

MeSH terms, Substancesexpand

full text links

Proceed to details

Cite

Share

3
Am J Respir Crit Care Med
.
.
.
. 2024 Jan 8.

doi: 10.1164/rccm.202312-2275ED. Online ahead of print.

Small Airways in Non-Cystic Fibrosis Bronchiectasis

John D Dickinson[1], Christopher M Evans[2], Burton F Dickey[3]

Affiliations expand

- PMID: 38190706

- DOI: 10.1164/rccm.202312-2275ED

No abstract available

Keywords: bronchiectasis; mucin; mucus.

full text links