LIBRA JOURNAL CLUB
25-SEP-4 OCT 2023

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

Considerato il crescente interesse sull'argomento, abbiamo aggiunto una sezione su (premature birth) AND (pulmonary obstructive disease), ed in questo numero abbiamo incluso tutti gli articoli risultati dalla ricerca, dal prossimo verranno inseriti solo i settimanali

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

1
BMC Public Health

-
-
-

. 2023 Nov 24;23(1):2330.

doi: 10.1186/s12889-023-17274-3.

Exploring the use of masks for protection against the effects of wildfire smoke among people with preexisting respiratory conditions

Holly Seale[1], M Trent[2], G B Marks[3,4], S Shah[5,6], A A Chughtai[7], C R MacIntyre[2]

Affiliations expand

- PMID: 38001501

- DOI: 10.1186/s12889-023-17274-3

Abstract

Background: The impact of wildfire smoke is a growing public health issue, especially for those living with preexisting respiratory conditions. Understanding perceptions and behaviors relevant to the use of individual protective strategies, and how these affect the adoption of these strategies, is critical for the development of future communication and support interventions. This study focused on the use of masks by people living in the Australian community with asthma or chronic obstructive pulmonary disease (COPD).

Methods: Semi-structured phone interviews were undertaken with people living in the community aged 18 years and over. Participants lived in a bushfire-prone area and reported having been diagnosed with asthma or COPD.

Results: Twenty interviews were undertaken between July and September 2021. We found that, during wildfire episodes, there was an overwhelming reliance on closing windows and staying inside as a means of mitigating exposure to smoke. There was limited use of masks for this purpose. Even among those who had worn a mask, there was little consideration given to the type of mask or respirator used. Reliance on sensory experiences with smoke was a common prompt to adopting an avoidance behavior. Participants lacked confidence in the information available from air-quality apps and websites, however they were receptive to the idea of using masks in the future.

Conclusions: Whilst COVID-19 has changed the nature of community mask use over the last couple of years, there is no guarantee that this event will influence an individual's mask behavior during other events like bushfires. Instead, we must create social support processes for early and appropriate mask use, including the use of air quality monitoring.

Keywords: Air pollution; Communication; Masks; Public health; Respiratory health; Wildfire.

- 38 references

SUPPLEMENTARY INFO

Grants and fundingexpand

FULL TEXT LINKS

Proceed to details

Cite

2

Review

Respir Res

.

. 2023 Nov 24;24(1):295.

doi: 10.1186/s12931-023-02574-4.

Role of thioredoxin in chronic obstructive pulmonary disease (COPD): a promising future target

Heena Kansal[1], Vishal Chopra[2], Kranti Garg[2], Siddharth Sharma[3]

Affiliations expand

- PMID: 38001457

- DOI: 10.1186/s12931-023-02574-4

Abstract

Introduction: Thioredoxin (Trx) is a secretory protein that acts as an antioxidant, redox regulator, anti-allergic, and anti-inflammatory molecule. It has been used to treat dermatitis and inflammation of the digestive tract. In the lungs, Trx has a significant anti-inflammatory impact. On the other hand, Chronic Obstructive Pulmonary Disease (COPD) is one of the significant causes of death in the developed world, with a tremendous individual and socioeconomic impact. Despite new initiatives and endless treatment trials, COPD incidence and death will likely escalate in the coming decades.

Areas covered: COPD is a chronic inflammatory disease impacting the airways, lung parenchyma, and pulmonary vasculature. Oxidative stress and protease-antiprotease imbalances are thought to be involved in the process. The most popular respiratory inflammatory and allergic disorders therapies are corticosteroids and β-receptor agonists. These medications are helpful but have some drawbacks, such as infection and

immunosuppression; thus, addressing Trx signalling treatments may be a viable COPD treatment approach. This review shall cover the pathophysiology of COPD, the pharmacognosy of anti-COPD drugs, including the assets and liabilities of each, and the role and mechanism of Trx in COPD treatment.

Expert opinion: Limited research has targeted the thioredoxin system as an anti-COPD drug. Spectating the increase in the mortality rates of COPD, this review article would be an interesting one to research.

Keywords: COPD; Inflammation; Oxidative stress; ROS; Thioredoxin.

- 123 references

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

3

Pulmonology

-
-
-

. 2023 Nov 23:S2531-0437(23)00192-7.

doi: 10.1016/j.pulmoe.2023.10.001. Online ahead of print.

Mould exposure and COPD outcomes: Association or causation?

Hiroshi Ito[1]

Affiliations expand

- PMID: 38001007

- DOI: 10.1016/j.pulmoe.2023.10.001

No abstract available

Conflict of interest statement

Conflicts of interest The author declares no potential conflicts of interest.

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

4

BMC Cardiovasc Disord

-
-
-

. 2023 Nov 24;23(1):579.

doi: 10.1186/s12872-023-03585-1.

Value of inferior vena cava collapsibility index as marker of heart failure in chronic obstructive pulmonary disease exacerbation

Cyrine Kouraichi[1,2], Adel Sekma[1,2], Khaoula Bel Haj Ali[1,2], Ikram Chamtouri[3], Sarra Sassi[1,2], Marwa Toumia[1,4], Hajer Yaakoubi[5], Rym Youssef[5], Mohamed Amine Msolli[1,2], Kaouthar Beltaief[1,2], Zied Mezgar[6], Mariem Khrouf[6], Wahid Bouida[1,2], Zohra Dridi[6], Riadh Boukef[1,5], Hamdi Boubaker[1,2], Mohamed Habib Grissa[1,2], Semir Nouira[7,8,9]

Affiliations expand

- PMID: 37996792

- DOI: 10.1186/s12872-023-03585-1

Abstract

Introduction: Inferior vena cava (IVC) diameter variability with respiration measured by ultrasound was found to be useful for the diagnosis of heart failure (HF) in ED patients with acute dyspnea. Its value in identifying HF in acute exacerbation of chronic obstructive pulmonary disease exacerbation (AECOPD) was not specifically demonstrated.

Objective: To determine the value of ΔIVC in the diagnosis of HF patients with AECOPD.

Methods: This is a prospective study conducted in the ED of three Tunisian university hospitals including patients with AECOPD. During this period, 401 patients met the inclusion criteria. The final diagnosis of HF is based on the opinion of two emergency experts after consulting the data from clinical examination, cardiac echocardiography, and BNP level. The ΔIVC was calculated by two experienced emergency physicians who were blinded from the patient's clinical and laboratory data. A cut off of 15% was used to define the presence (< 15%) or absence of HF (≥ 15%). Left ventricular ejection fraction (LVEF) was also measured. The area under the ROC curve, sensitivity, specificity, and positive and negative predictive values were calculated to determine the diagnostic and predictive accuracy of the ΔIVC in predicting HF.

Results: The study population included 401 patients with AECOPD, mean age 67.2 years with male (68.9%) predominance. HF was diagnosed in 165 (41.1%) patients (HF group) and in 236 patients (58.9%) HF was excluded (non HF group). The assessment of the performance of the ΔIVC in the diagnosis of HF showed a sensitivity of 37.4% and a specificity of 89.7% using the threshold of 15%. The positive predictive value was 70.9% and the negative predictive value was 66.7%. The area under the ROC curve was 0.71(95%, CI 0.65-0.76). ΔIVC values were not different between HF patients with reduced LVEF and those with preserved LVEF.

Conclusion: Our results showed that ΔIVC has a good value for ruling out HF in ED patients consulting for AECOPD.

Keywords: Collabsibility index; Dyspnea; Emergency AECOPD; Heart failure; Ultrasound.

- 33 references

FULL TEXT LINKS

Proceed to details

Cite

Share

5

BMJ Open

. 2023 Nov 23;13(11):e070155.

doi: 10.1136/bmjopen-2022-070155.

Nebulised furosemide for the treatment of patients with obstructive lung disease: a systematic review protocol

Richard Veldhoen[1], John Muscedere[2]

Affiliations expand

- PMID: 37996224

- DOI: 10.1136/bmjopen-2022-070155

Free article

Abstract

Introduction: Obstructive lung diseases (OLDs) such as asthma and chronic obstructive pulmonary disease are major global sources of morbidity and mortality. Current treatments

broadly include bronchodilators such as beta agonists/antimuscarinics and anti-inflammatory agents such as steroids. Despite therapy patients still experience exacerbations of their diseases and overall decline over time. Nebulised furosemide may have a novel use in the treatment of OLD. Multiple small studies have shown improvement in pulmonary function as well as dyspnoea. This systematic review will aim to summarise and analyse the existing literature on nebulised furosemide use in OLD to guide treatment and future studies.

Methods and analysis: We will identify all experimental studies using nebulised/inhaled furosemide in patients with asthma or chronic obstructive pulmonary disease that report any outcome. Databases will include EMBASE, MEDLINE, Cochrane Database of Systematic Reviews, ACP Journal Club, Database of Abstracts of Reviews of Effects, Cochrane Clinical Answers, Cochrane Central Register of Controlled Trials, Cochrane Methodology Register, Health Technology Assessment and the NHS Economic Evaluation Database (1995-2015). We will also search ClinicalTrials.gov and the WHO-International Clinical Trials Registry Platform. Two reviewers will independently determine trial eligibility. For each included trial, we will perform duplicate independent data extraction, risk of bias assessment and evaluation of the quality of evidence using the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach.

Ethics and dissemination: Ethical approval will not be applicable to this systematic review. The results of the study will be communicated through publication in peer-reviewed journals.

Prospero registration number: CRD42021284680.

Keywords: asthma; chronic airways disease; emphysema.

Conflict of interest statement

Competing interests: None declared.

Review

Curr Rheumatol Rep

. 2023 Nov 23.

doi: 10.1007/s11926-023-01121-w. Online ahead of print.

Multimorbidity in Rheumatoid Arthritis: Literature Review and Future Directions

Jonathan Katz[1], Christie M Bartels[2]

Affiliations expand

- PMID: 37995046

- DOI: 10.1007/s11926-023-01121-w

Abstract

Purpose of review: To offer a narrative review of literature and an update on rheumatoid arthritis (RA) multimorbidity research over the past five years as well as future directions.

Recent findings: Patients with RA experience higher prevalence of multimorbidity (31-86% vs 18-71% in non-RA) and faster accumulation of comorbidities. Patients with multimorbidity have worse outcomes compared to non-RA multimorbid patients and RA without multimorbidity including mortality, cardiac events, and hospitalizations. Comorbid disease clusters often included: cardiopulmonary, cardiometabolic, and depression and pain-related conditions. High-frequency comorbidities included interstitial lung disease, asthma, chronic obstructive pulmonary disease, cardiovascular disease, fibromyalgia, osteoarthritis, and osteoporosis, thyroid disorders, hypertension, and cancer. Furthermore, patients with RA and multimorbidity are paradoxically at increased risk of high RA disease activity but experience a lower likelihood of biologic use and more biologic failures. RA patients experience higher prevalence of multimorbidity and worse outcomes versus non-RA and RA without multimorbidity. Findings call for further studies.

Keywords: COPD; Comorbidity; Depression; Multimorbidity; Pain; Rheumatoid Arthritis.

- 42 references

SUPPLEMENTARY INFO

Publication types, Grants and fundingexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

7

Meta-Analysis

BMC Pulm Med

-
-
-

. 2023 Nov 22;23(1):462.

doi: 10.1186/s12890-023-02761-5.

Asthma and COPD as co-morbidities in patients hospitalised with Covid-19 disease: a global systematic review and meta-analysis

James Patrick Finnerty[1,2], A B M Arad Hussain[3], Aravind Ponnuswamy[4,5], Hafiz Gulzeb Kamil[4], Ammar Abdelaziz[4]

Affiliations expand

- PMID: 37993829

- DOI: 10.1186/s12890-023-02761-5

Abstract

Background: Factors predisposing to increased mortality with COVID-19 infection have been identified as male sex, hypertension, obesity, and increasing age. Early studies looking at airway diseases gave some contradictory results. The purpose of our study was to determine global variation in studies in patients hospitalized with COVID-19 in the prevalence of COPD and asthma; and to determine whether the presence of asthma or COPD affected mortality in the same hospital population.

Methods: A systematic review and meta-analysis of the published literature of COPD and asthma as co-morbidities in patients hospitalized with COVID-19 was performed, looking firstly at the prevalence of these diseases in patients hospitalized with COVID-19, and secondly at the relative risk of death from any cause for patients with asthma or COPD.

Results: Prevalence of both airway diseases varied markedly by region, making meaningful pooled global estimates of prevalence invalid and not of clinical utility. For individual studies, the interquartile range for asthma prevalence was 4.21 to 12.39%, and for COPD, 3.82 to 11.85%. The relative risk of death with COPD for patients hospitalized with COVID-19 was 1.863 (95% CI 1.640-2.115), while the risk with asthma was 0.918 (95% CI 0.767 to 1.098) with no evidence of increased mortality.

Conclusions: For asthma and COPD, prevalence in patients hospitalized with COVID-19 varies markedly by region. We found no evidence that asthma predisposed to increased mortality in COVID-19 disease. For COPD, there was clear evidence of an association with increased mortality.

Trial registration: The trial was registered with PROSPERO: registration number CRD42021289886.

Keywords: Asthma; COPD; COVID-19; Chronic obstructive pulmonary disease; SARS-Cov-2.

- 78 references

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

Observational Study

BMC Pulm Med

. 2023 Nov 22;23(1):464.

doi: 10.1186/s12890-023-02775-z.

The rate of ward to intensive care transfer and its predictors among hospitalized COPD patients, a retrospective study in a local tertiary center in Saudi Arabia

Abdallah Y Naser[#1], Mohammad Saleh Dairi[#2], Hassan Alwafi[3], Deema Sami Ashoor[2], Sami Qadus[4], Abdulelah M Aldhahir[5], Abdullah A Alqarni[6], Wael Aly Elrefaey[7], Sultan Qanash[8], Waleed Hafiz[2], Jaber S Alqahtani[9], Rakan Ekram[10], Amjad Abuirmeileh[11], Anan S Jarab[12 13 14], Omaima Ibrahim Badr[7 15]

Affiliations expand

- PMID: 37993810

- PMCID: PMC10666425

- DOI: 10.1186/s12890-023-02775-z

Abstract

Objective: To investigate the prevalence of intensive care unit (ICU) admission and its predictors among hospitalized chronic obstructive pulmonary disease (COPD) patients.

Methods: An observational retrospective study was conducted. All patients with a confirmed diagnosis of COPD according to the GOLD guidelines between 28 and 2020 and 1 March 2023 at Al-Noor Specialist Hospital were included in this study. Patients were excluded if a preemptive diagnosis of COPD was made clinically without spirometry evidence of fixed airflow limitation. Descriptive results were presented as frequency (percentage) for categorical variables and mean (SD) for continuous variables and to estimate prevalence of ICU admission. Predictors of ICU admission among hospitalized COPD patients were determined using logistic regression analysis. A SPSS (Statistical Package for the Social Sciences) version 25 was used to perform all statistical analysis.

Results: A total of 705 patients with COPD were included in this study. The mean age was 65.4 (25.3) years. Around 12.4% of the hospitalized patients were admitted to the ICD. Logistic regression analysis identified that older age (OR; 1.92, (1.41-2.62)), smoking (OR; 1.60 (1.17-2.19)), and having specific comorbidities (Hypertension (OR; 1.98 (1.45-2.71)), Diabetes mellitus (OR; 1.42 (1.04-1.93)), GERD (OR; 2.81 (1.99-3.96)), Ischemic heart disease (OR; 3.22 (2.19-4.75)), Obstructive sleep apnea syndrome (OR; 2.14 (1.38-3.33)), stroke (OR; 4.51 (2.20-9.26))) were predictors of ICU admissions among patients with COPD.

Conclusions: Our study found that a step-up approach to inpatient COPD management requires admission to the ICU in 12.4%, for which age, smoking status, cardiovascular, and stroke were important predictors. Further clinical research is needed to provide a validated model that can be incorporated into clinical practice to monitor this patient population during their admission and identify at-risk individuals for early transfer to higher acuity settings and intensive care units.

Keywords: Admissions; COPD; Hospital; ICU; Saudi Arabia.

Conflict of interest statement

The authors declare no competing interests.

- 50 references

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

UNIMORE

Proceed to details

Cite

Share

9

BMJ Open Respir Res

-
-
-

. 2023 Nov 22;10(1):e001588.

doi: 10.1136/bmjresp-2022-001588.

Survey-identified experiences of prediagnosis and diagnosis process among patients with COPD, asthma, interstitial lung disease and bronchiectasis

Xiubin Zhang[1], Andrew Ellis[2], Jennifer K Quint[3], Alex Bottle[1]

Affiliations expand

- PMID: 37993278

- DOI: 10.1136/bmjresp-2022-001588

Free article

Abstract

Introduction: Diagnosis of asthma, chronic obstructive pulmonary disease (COPD), bronchiectasis and interstitial lung disease (ILD) can be convoluted, and limited data exist on understanding the experience of diagnosis from a patient perspective.

Aim: To investigate a patient's 'route to diagnosis', particularly focusing on the time prior to seeking healthcare, and perceived experiences of the diagnostic pathway.

Methods: An online survey was distributed via the UK Taskforce for Lung Health and member mailing lists to patients as well as the website and social media accounts from 23 May 2022 to 5 July 2022. Analysis was descriptive; χ^2 tests were performed to make comparisons across diseases.

Results: There were 398 valid responses (COPD=156, asthma=119, ILD=67 and bronchiectasis=56). While only 9.2% of respondents who were eventually diagnosed with asthma had not heard of their disease, the corresponding percentages for COPD, ILD and bronchiectasis were 34.0%, 74.6% and 69.6%, respectively. 33.9% of people with bronchiectasis believed their delayed diagnosis was due to the health professionals' lack of expertise or knowledge-24.4% for asthma, 19.2% for COPD and 17.9% for ILD.People with COPD were more likely (37.2%) and patients with asthma less likely (10.9%) to report they did not know the signs of potential lung disease ($p<0.001$). People with COPD were more likely to report that they did not appreciate the severity or urgency of the situation (58.3%) than people with asthma (32.8%), ILD (43.3%) or bronchiectasis (28.6%, $p<0.001$). The proportion of patients reporting that they were being initially treated for another lung condition was higher in people with bronchiectasis (44.6%) and lower in people with asthma (8.4%, $p<0.001$).

Conclusions: Perceived reasons for diagnostic delay can help health professionals promote early diagnosis and management. Patients' limited knowledge of respiratory diseases also played a factor, indicating the necessity to promote patients' knowledge to encourage earlier help seeking.

Keywords: COPD; asthma; bronchiectasis; diagnosis; interstitial lung disease; online survey.

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

Review

Eur Respir Rev

. 2023 Nov 22;32(170):230134.

doi: 10.1183/16000617.0134-2023. Print 2023 Dec 31.

Investigating the prognostic value of digital mobility outcomes in patients with chronic obstructive pulmonary disease: a systematic literature review and meta-analysis

Sara C Buttery[1,2], Parris J Williams[3,2], Saeed M Alghamdi[4], Keir E J Philip[3,2], Alexis Perkins[3,2], Constantinos Kallis[3], Jennifer K Quint[3], Michael I Polkey[3,2], Sofie Breuls[5,6], Joren Buekers[7,8,9], Nikolaos Chynkiamis[10,11], Laura Delgado-Ortiz[7,8,9], Heleen Demeyer[5,6], Anja Frei[12], Judith Garcia-Aymerich[7,8,9], Elena Gimeno-Santos[7,8,9], Sarah Koch[7,8,9], Dimitrios Megaritis[10], Ashley Polhemus[11], Thierry Troosters[5,6], Ioannis Vogiatzis[12,10], Henrik Watz[13], Nicholas S Hopkinson[3,2]

Affiliations expand

- PMID: 37993126

- PMCID: PMC10663939

- DOI: 10.1183/16000617.0134-2023

Free PMC article

Abstract

Background: Reduced mobility is a central feature of COPD. Assessment of mobility outcomes that can be measured digitally (digital mobility outcomes (DMOs)) in daily life such as gait speed and steps per day is increasingly possible using devices such as pedometers and accelerometers, but the predictive value of these measures remains unclear in relation to key outcomes such as hospital admission and survival.

Methods: We conducted a systematic review, nested within a larger scoping review by the MOBILISE-D consortium, addressing DMOs in a range of chronic conditions. Qualitative and quantitative analysis considering steps per day and gait speed and their association with clinical outcomes in COPD patients was performed.

Results: 21 studies (6076 participants) were included. Nine studies evaluated steps per day and 11 evaluated a measure reflecting gait speed in daily life. Negative associations were demonstrated between mortality risk and steps per day (per 1000 steps) (hazard ratio (HR) 0.81, 95% CI 0.75-0.88, p<0.001), gait speed (<0.80 $m \cdot s^{-1}$) (HR 3.55, 95% CI 1.72-7.36, p<0.001) and gait speed (per 1.0 $m \cdot s^{-1}$) (HR 7.55, 95% CI 1.11-51.3, p=0.04). Fewer steps per day (per 1000) and slow gait speed (<0.80 $m \cdot s^{-1}$) were also associated with increased healthcare utilisation (HR 0.80, 95% CI 0.72-0.88, p<0.001; OR 3.36, 95% CI 1.42-7.94, p=0.01, respectively). Available evidence was of low-moderate quality with few studies eligible for meta-analysis.

Conclusion: Daily step count and gait speed are negatively associated with mortality risk and other important outcomes in people with COPD and therefore may have value as prognostic indicators in clinical trials, but the quantity and quality of evidence is limited. Larger studies with consistent methodologies are called for.

Conflict of interest statement

Conflicts of interest declaration: S.C. Buttery reports educational speaker fees for Pulmonx. J.K. Quint has received grants from the Medical Research Council, the National Institute for Health Data Science (HDR UK), GlaxoSmithKline, Bohringer Ingelheim and Taskforce via Asthma + Lung UK, and AstraZeneca; and personal fees for advisory board participation, consultancy or speaking fees from GlaxoSmithKline, Evidera, AstraZeneca and Insmed. M.I. Polkey reports consultancy for Philips Respironics. J. Garcia-Aymerich reports speaker honoraria from Chiesi and a grant from AstraZeneca paid to her institution for a COVID-19-related project and is also a paid advisory board member for AstraZeneca. A. Polhemus

is a paid employee of Merck & Co, Inc. and IQVIA AG. T. Troosters reports a Mobilise-D Innotive Medicines Initiative grant. All other authors report no conflicts of interest.

- 83 references
- 3 figures

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

11

J Psychosom Res

. 2023 Nov 19:176:111554.

doi: 10.1016/j.jpsychores.2023.111554. Online ahead of print.

Individuals with psychosis present a reduced lung diffusion capacity and early spirometry alterations: Results from a cross-sectional study

Ana Viejo Casas[1], Carlos Amado Diago[2], Juan Agüero Calvo[3], Marcos Gómez-Revuelta[4], Mario Ruiz Núñez[5], María Juncal-Ruiz[6], Rocío Pérez-Iglesias[4], Paloma Fuentes-Pérez[7], Benedicto Crespo-Facorro[8], Javier Vázquez-Bourgon[9]

Affiliations expand

- PMID: 37992571

- DOI: 10.1016/j.jpsychores.2023.111554

Abstract

Objective: Individuals with psychosis present a greater prevalence of chronic lung diseases, including Chronic Obstructive Pulmonary Disease (COPD). These chronic respiratory diseases are preceded by early lung function alterations; such as preserved ratio impaired spirometry (PRISm) or normal spirometry but low diffusion capacity of the lung for carbon monoxide (DLCO). However, there is no previous evidence on these lung function alterations in psychosis. The aim of this study is to evaluate the risk of having spirometry and DLCO alterations in subjects with psychosis compared with a control group.

Methods: Cross-sectional study on a cohort of 170 individuals including 96 subjects with psychosis and 74 sex-age-and smoking habit matched healthy controls. All subjects were under 60 years-old, and without COPD or asthma. Respiratory function was evaluated through spirometry. Clinical characteristics and DLCO values were recorded.

Results: Patients with psychosis showed lower spirometry results, both in terms of absolute and percentage of Forced Vital Capacity (FVC) and Forced Expiratory Volume in one second (FEV1). Absolute and percentage levels of diffusion were also lower in patients with psychosis. The percentage of individuals with DLCO<80% was higher among patients with psychosis (75% vs. 40%, $p < 0.001$). And the prevalence of PRISm was higher among patients with psychosis (10.4% vs. 1.4%, $p < 0.001$). Multivariate logistic regression analysis indicated that psychosis was an independent predictor of DLCO<80% (OR 5.67, CI95% 1.86-17.27).

Conclusion: Patients with psychosis and females had early alterations in lung function. These results suggest that early screening for lung disease should be encouraged in psychosis.

Keywords: COPD; Epidemiology; Psychosis; Respiratory function tests.

Conflict of interest statement

Declaration of Competing Interest The authors have no competing interests to report.

12

Implement Sci Commun

. 2023 Nov 21;4(1):143.

doi: 10.1186/s43058-023-00520-5.

Applying RE-AIM to examine the impact of an implementation facilitation package to scale up a program for Veterans with chronic obstructive pulmonary disease

Edward C Portillo[1,2], Martha A Maurer[3], Jordyn T Kettner[3,4], Sonia D Bhardwaj[3,4], Ziting Zhang[3,4], Cassie Sedgwick[3,4], Aaron M Gilson[3], Jamie A Stone[3], Nora Jacobson[5], Rose Hennessy-Garza[6], Sarah Will[7,8], M Shawn McFarland[8], Heather Ourth[8], Michelle A Chui[3]

Affiliations expand

- PMID: 37990241

- PMCID: PMC10664371

- DOI: 10.1186/s43058-023-00520-5

Free PMC article

Abstract

Background: US Veterans are four times more likely to be diagnosed with chronic obstructive pulmonary disease (COPD) compared to the civilian population with no care model that consistently improves Veteran outcomes when scaled. COPD Coordinated Access to Reduce Exacerbations (CARE) is a care bundle intended to improve the delivery of evidence-based practices to Veterans. To address challenges to scaling this program in the Veterans' Health Administration (VA), the COPD CARE Academy (Academy), an implementation facilitation package comprised of five implementation strategies was designed and implemented.

Methods: This evaluation utilized a mixed-methods approach to assess the impact of the Academy's implementation strategies on the RE-AIM framework implementation outcomes and the extent to which they were effective at increasing clinicians' perceived capability to implement COPD CARE. A survey was administered one week after Academy participation and a semi-structured interview conducted 8 to 12 months later. Descriptive statistics were calculated for quantitative items and thematic analysis was used to analyze open-ended items.

Results: Thirty-six clinicians from 13 VA medical centers (VAMCs) participated in the Academy in 2020 and 2021 and 264 front-line clinicians completed COPD CARE training. Adoption of the Academy was indicated by high rates of Academy session attendance (90%) and high utilization of Academy resources. Clinicians reported the Academy to be acceptable and appropriate as an implementation package and clinicians from 92% of VAMCs reported long-term utilization of Academy resources. Effectiveness of the Academy was represented by clinicians' significant increases ($p < 0.05$) in their capability to complete ten implementation tasks after Academy participation.

Conclusions: This evaluation found that the use of implementation facilitation paired with additional strategies enhanced the capacity of clinicians to implement COPD CARE. Future assessments are needed to explore post-academy resources that would help VAMCs to strategize localized approaches to overcome barriers.

Keywords: Chronic obstructive pulmonary disease; Implementation facilitation; RE-AIM; Veterans Healthcare Administration.

Conflict of interest statement

ECP declares the following potential competing interest: He has completed consulting work with AstraZeneca. All other authors (MAM, JTK, SDB, ZZ, CS, AMG, JAS, NJ, RHG, SW, MSM, HO, MAC) declare that they have no competing interests.

- 33 references
- 1 figure

13

BMC Pulm Med

. 2023 Nov 21;23(1):455.

doi: 10.1186/s12890-023-02698-9.

Healthcare resource utilization in patients with pulmonary hypertension associated with chronic obstructive pulmonary disease (PH-COPD): a real-world data analysis

Tracey Weiss[1], Aimee M Near[2], Xiaohui Zhao[2], Dena Rosen Ramey[3], Tania Banerji[2], Handing Xie[2], Steven D Nathan[4]

Affiliations expand

- PMID: 37990203

- PMCID: PMC10664271

- DOI: 10.1186/s12890-023-02698-9

Free PMC article

Abstract

Rationale: There is a lack of real-world characterization of healthcare costs and associated cost drivers in patients with pulmonary hypertension secondary to chronic obstructive pulmonary disease (PH-COPD).

Objectives: To examine (1) excess healthcare resource utilization (HCRU) and associated costs in patients with PH-COPD compared to COPD patients without PH; and (2) patient characteristics that are associated with higher healthcare costs in patients with PH-COPD.

Methods: This study analyzed data from the IQVIA PharMetrics® Plus database (OCT2014-MAY2020). Patients with PH-COPD were identified by a claims-based algorithm based on PH diagnosis (ICD-10-CM: I27.0, I27.2, I27.20, I27.21, I27.23) after COPD diagnosis. Patients aged ≥40 years and with data available ≥12 months before (baseline) and ≥6 months after (follow-up) the first observed PH diagnosis were included. Patients with other non-asthma chronic pulmonary diseases, PH associated with other causes, cancer, left-sided heart failure (HF), PH before the first observed COPD diagnosis, or right-sided/unspecified HF during baseline were excluded. Patients in the PH-COPD cohort were matched 1:1 to COPD patients without PH based on propensity scores derived from baseline patient characteristics. Annualized all-cause and COPD/PH-related (indicated by a primary diagnosis of COPD or PH) HCRU and costs during follow-up were compared between the matched cohorts. Baseline patient characteristics associated with higher total costs were examined in a generalized linear model in the PH-COPD cohort.

Results: A total of 2,224 patients with PH-COPD were identified and matched to COPD patients without PH. Patients with PH-COPD had higher all-cause HCRU and annual healthcare costs ($51,435 vs. $18,412, $p<0.001$) than matched COPD patients without PH. Among patients with PH-COPD, costs were primarily driven by hospitalizations (57%), while COPD/PH-related costs accounted for 13% of all-cause costs. Having a higher comorbidity burden and a prior history of COPD exacerbation were major risk factors for higher total all-cause costs among patients with PH-COPD.

Conclusions: Treatment strategies focusing on preventing hospitalizations and managing comorbidities may help reduce the burden of PH-COPD.

Keywords: Chronic obstructive pulmonary disease (COPD); Comorbidities; Healthcare cost; Healthcare resource utilization; Hospitalization; Pulmonary hypertension secondary to COPD.

Conflict of interest statement

Weiss and Ramey are employees of Merck & Co., Inc. Near and Zhao are employees of IQVIA, Inc., which received consulting fees for conducting this study. Xie and Banerji were

employees of IQVIA at the time of study conduct. Nathan has received consulting fees and serves on the advisory board for Merck &Co., Inc., United Therapeutics Corporation, Bellerophon Therapeutics, Third Pole Therapeutics and F. Hoffmann-La Roche AG.

- 23 references
- 5 figures

14

Respir Res

-
-
-

. 2023 Nov 21;24(1):293.

doi: 10.1186/s12931-023-02601-4.

Risk of cardiovascular events after an exacerbation of chronic obstructive pulmonary disease: results from the EXACOS-CV cohort study using the PHARMO Data Network in the Netherlands

Karin M A Swart[1], Brenda N Baak[2], Louise Lemmens[2], Fernie J A Penning-van Beest[2], Camilla Bengtsson[3], Muriel Lobier[4], Fabian Hoti[4], Dina Vojinovic[5], Lindy van Burk[6], Kirsty Rhodes[7], Edeltraut Garbe[8], Ron M C Herings[2,9], Clementine Nordon[7], Sami O Simons[10]

Affiliations expand

- PMID: 37990197

- PMCID: PMC10662240

- DOI: 10.1186/s12931-023-02601-4

Free PMC article

Abstract

Background: People living with chronic obstructive pulmonary disease (COPD) have an increased risk of experiencing cardiovascular (CV) events, particularly after an exacerbation. Such CV burden is not yet known for incident COPD patients. We examined the risk of severe CV events in incident COPD patients in periods following either moderate and/or severe exacerbations.

Methods: Persons aged ≥ 40 years with an incident COPD diagnosis from the PHARMO Data Network were included. Exposed time periods included 1-7, 8-14, 15-30, 31-180 and 181-365 days following an exacerbation. Moderate exacerbations were defined as those managed in outpatient settings; severe exacerbations as those requiring hospitalisation. The outcome was a composite of time to first severe CV event (acute coronary syndrome, heart failure decompensation, cerebral ischaemia, or arrhythmia) or death. Hazard ratios (HR) were estimated for association between each exposed period and outcome.

Results: 8020 patients with newly diagnosed COPD were identified. 2234 patients (28%) had ≥ 1 exacerbation, 631 patients (8%) had a non-fatal CV event, and 461 patients (5%) died during a median follow-up of 36 months. The risk of experiencing the composite outcome was increased following a moderate/severe exacerbation as compared to time periods of stable disease [range of HR: from 15.3 (95% confidence interval 11.8-20.0) in days 1-7 to 1.3 (1.0-1.8) in days 181-365]. After a moderate exacerbation, the risk was increased over the first 180 days [HR 2.5 (1.3-4.8) in days 1-7 to 1.6 (1.3-2.1) in days 31-180]. After a severe exacerbation, the risk increased substantially and remained higher over the year following the exacerbation [HR 48.6 (36.9-64.0) in days 1-7 down to 1.6 (1.0-2.6) in days 181-365]. Increase in risk concerned all categories of severe CV events.

Conclusions: Among incident COPD patients, we observed a substantial risk increase of severe CV events or all-cause death following either a moderate or severe exacerbation of COPD. Increase in risk was highest in the initial period following an exacerbation. These findings highlight the significant cardiopulmonary burden among people living with COPD even with a new diagnosis.

Keywords: COPD; Cardiopulmonary risk; Chronic obstructive pulmonary disease; Exacerbation; Retrospective cohort study.

Conflict of interest statement

KS, BB, LL, FPB and RH are employees of the PHARMO Institute for Drug Outcomes Research. This independent research institute performs financially supported studies for government and related healthcare authorities and several pharmaceutical companies. ML, FH, DV, and CB are employees of IQVIA, a contract research organization that performs financially supported studies for pharmaceutical companies. EG has been a consultant to AstraZeneca on this project and has previously chaired a department at the Leibniz Institute that occasionally conducted studies for pharmaceutical companies, including Bayer, Nycomed, Celgene, Glaxo-Smith-Kline, Mundipharma, Novartis, Sanofi-Aventis, Sanofi Pasteur MSD and STADA. CN, LB and KR are employees of AstraZeneca and own shares in AstraZeneca. SS has received grants or contracts from AstraZeneca, GlaxoSmithKline, Roche and Boehringer Ingelheim, outside the submitted work; consulting fees from Chiesi and GlaxoSmithKline, outside the submitted work; honoraria received from AstraZeneca and Chiesi for lectures outside the submitted work; support for attending meetings from Chiesi, outside the submitted work; honoraria for advisory board for AstraZeneca, Chiesi and Boehringer Ingelheim, outside the submitted work.

- 20 references
- 1 figure

15

BMC Pulm Med

. 2023 Nov 20;23(1):450.

doi: 10.1186/s12890-023-02759-z.

The association between walking pace and hand grip strength with the risk of chronic obstructive pulmonary disease: a bidirectional Mendelian randomization study

Peng Qiu[1], Mingxian Chen[2], Shuaibing Lv[3], Juanjuan Xie[4], Junyu Wu[5]

Affiliations expand

- PMID: 37986176

- PMCID: PMC10658936

- DOI: 10.1186/s12890-023-02759-z

Free PMC article

Abstract

Background: Chronic Obstructive Pulmonary Disease (COPD) currently ranks as the third leading cause of mortality worldwide, imposing substantial burdens on societal and individual health. Amongst health research tools, walking pace (WP) and hand grip strength (HGS) are cornerstones, extensively associated with diverse health conditions. However, the intricate interplay between these factors and COPD risk remains ambiguous. This study aims to elucidate the causal association of WP, HGS, with COPD risk through a bidirectional Mendelian randomization (MR) approach.

Methods: Bidirectional MR analysis was performed using Genome-wide association study (GWAS) data of European individuals for WP, HGS, and COPD. Inverse Variance Weighted (IVW) served as the primary MR analysis approach. To supplement the IVW findings, four additional MR methods [MR-Egger, weighted median, maximum likelihood, simple median] were used. To assess heterogeneity and pleiotropy, sensitivity analyses were performed. In addition, multivariate MR (MVMR) analysis was used to assess causality after adjustment for potential confounders.

Results: IVW method results show a significant negative association between WP and COPD risk in both initial (genome-wide threshold, odds ratio (OR) = 0.21, 95% confidence interval (CI) 0.09-0.51, P = 5.06×10^{-4}) and secondary (locus-wide threshold, OR = 0.27, 95%CI: 0.18-0.41, P = 4.88×10^{-10}) MR analysis. The reverse MR analysis suggested that COPD also diminishes WP. Additionally, a causal risk reduction for COPD with right HGS (OR = 0.74, 95% CI: 0.58-0.94, P = 1.44×10^{-2}) was only found in secondary MR analysis. The outcomes of the four additional MR methods also suggested similar causal relationships, and sensitivity analyses endorsed their robustness. Lastly, the MVMR analysis demonstrated that the WP's effect on reducing COPD risk persisted independently of potential confounding variables.

Conclusion: A bidirectional causal relationship exists between typical WP and COPD risk. Conversely, a decrease in right HGS is unidirectionally associated with an increased risk of COPD. The study suggests that WP may serve as a predictive factor for COPD or as a simple evaluative indicator for prognosis.

Keywords: Causal relationship; Chronic obstructive pulmonary disease; Hand grip strength; Mendelian randomization; Walking pace.

Conflict of interest statement

The authors declare no competing interests.

- 70 references
- 5 figures

. 2023 Nov 20:1-5.

doi: 10.1159/000534922. Online ahead of print.

Response to Various Biologics in Patients with Both Asthma and Chronic Obstructive Pulmonary Disease

Marek Lommatzsch[1], Sebastian Niels Mohme[1], Paul Stoll[1], J Christian Virchow[1]

Affiliations expand

- PMID: 37984349

- DOI: 10.1159/000534922

Abstract

Introduction: Patients can have features of both chronic obstructive pulmonary disease (COPD) and asthma. However, there is still no consensus how to precisely define this patient population. In addition, there are little data on the effectiveness of biologics in these patients.

Method: Presence of COPD was defined by a smoking history of ≥10 pack years (PY), a postbronchodilator FEV1/FVC ratio < lower limit of normal (LLN) and FEV1 < 80% predicted, a carbon monoxide diffusion capacity (DLCO) < LLN, and dyspnoea on exertion as a leading symptom. Presence of asthma was defined by high type 2 biomarkers (blood eosinophils ≥300 cells/µL and/or FeNO ≥50 ppb), typical clinical features of asthma (including nocturnal respiratory symptoms), and a documented history of a clinical benefit from inhaled and/or oral glucocorticoid treatment. We analysed data from 20 patients fulfilling the criteria for both COPD and asthma who were newly treated with a biologic due to recurrent exacerbations despite high-dose inhaled triple therapy.

Results: Median values before treatment with a biologic were as follows: 40 PY, FEV1 42% predicted, DLCO 45% predicted, 475 eosinophils/µL blood, FeNO 48 ppb. Median duration of biologic treatment (mepolizumab, benralizumab, dupilumab, omalizumab, or tezepelumab) was 12 months. There were significant improvements in exacerbations (most prominent effect), asthma control, and lung function during biologic treatment.

Conclusions: Various types of biologics approved for severe asthma treatment can be effective in patients with both COPD and asthma. We propose an easy-to-use definition of these patients for routine clinical practice.

Keywords: Asthma; Biologics; Chronic obstructive pulmonary disease; Exacerbations; Type-2 biomarkers.

17

Int J Pharm

. 2023 Nov 25:647:123529.

doi: 10.1016/j.ijpharm.2023.123529. Epub 2023 Oct 17.

Preparation and evaluation of βcyclodextrin-based nanosponges loaded with Budesonide for pulmonary delivery

Yasmein Yaser Salem[1], Gjylije Hoti[2], Rana M F Sammour[3], Fabrizio Caldera[4], Claudio Cecone[5], Adrián Matencio[6], Aliasgar F Shahiwala[7], Francesco Trotta[8]

Affiliations expand

- PMID: 37858636

- DOI: 10.1016/j.ijpharm.2023.123529

Abstract

Budesonide (BUD) is a glucocorticosteroid used to treat chronic obstructive pulmonary disease. Despite this, it is a hydrophobic compound with low bioavailability. To address these hurdles, non-toxic and biocompatible βcyclodextrin-based nanosponges (βCD-NS) were attempted. BUD was loaded on five different βCD-NS at four different ratios. NS with 1,1'-carbonyldiimidazole (CDI) as a crosslinking agent, presented a higher encapsulation efficiency (~80%) of BUD at 1:3 BUD: βCD-NS ratio (BUD-βCD-NS). The optimized formulations were characterized by Fourier-transform infrared spectroscopy (FTIR), thermogravimetric analysis (TGA), water absorption capacity (WAC), scanning electron microscopy (SEM), X-ray powder diffraction studies (XRD), particle size, zeta potential, encapsulation efficiency, in vitro and in vivo release studies, acute toxicity study, solid-state characterization, and aerosol performance. In vitro-in vivo correlation and cytotoxicity of the formulations on alveolar cells in vitro were further determined. In vitro and in vivo studies showed almost complete drug release and drug absorption from the lungs in the initial 2 h for pure BUD, which were sustained up to 12 h from BUD loaded into nanosponges (BUD-βCD-NS). Acute toxicity studies and in vitro cytotoxicity studies on alveolar cells proved the safety of BUD-βCD-NS. Several parameters, including particle size, median mass aerodynamic diameter, % fine particle fraction, and % emitted dose, were evaluated for aerosol performance, suggesting the capability of BUD-βCD-NS to formulate as a dry powder inhaler (DPI) with a suitable diluent. To sum up, this research will offer new insights into the future advancement of βCD-NS as drug delivery systems for providing controlled release of therapeutic agents against pulmonary disease.

Keywords: Budesonide; Cyclodextrin nanosponges; Dry powder inhaler; In vitro and in vivo studies; Pulmonary disease.

Conflict of interest statement

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

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

medRxiv

. 2023 Nov 20:2023.05.26.23290532.

doi: 10.1101/2023.05.26.23290532. Preprint

Quantitative CT of Normal Lung Parenchyma and Small Airways Disease Topologies are Associated With COPD Severity and Progression

Alexander J Bell, Ravi Pal, Wassim W Labaki, Benjamin A Hoff, Jennifer M Wang, Susan Murray, Ella A Kazerooni, Stefanie Galban, David A Lynch, Stephen M Humphries, Fernando J Martinez, Charles R Hatt, MeiLan K Han, Sundaresh Ram, Craig J Galban

- PMID: 37333382

- PMCID: PMC10274970

- DOI: 10.1101/2023.05.26.23290532

Abstract

Objectives: Small airways disease (SAD) is a major cause of airflow obstruction in COPD patients, and has been identified as a precursor to emphysema. Although the amount of SAD in the lungs can be quantified using our Parametric Response Mapping (PRM) approach, the full breadth of this readout as a measure of emphysema and COPD progression has yet to be explored. We evaluated topological features of PRM-derived normal parenchyma and SAD as surrogates of emphysema and predictors of spirometric decline.

Materials and methods: PRM metrics of normal lung (PRMNorm) and functional SAD (PRMfSAD) were generated from CT scans collected as part of the COPDGene study (n=8956). Volume density (V) and Euler-Poincaré Characteristic (χ) image maps, measures of the extent and coalescence of pocket formations (i.e., topologies), respectively, were determined for both PRMNorm and PRMfSAD. Association with COPD severity, emphysema, and spirometric measures were assessed via multivariable regression models. Readouts were evaluated as inputs for predicting FEV1 decline using a machine learning model.

Results: Multivariable cross-sectional analysis of COPD subjects showed that V and χ measures for PRMfSAD and PRMNorm were independently associated with the amount of emphysema. Readouts χfSAD (β of 0.106, $p<0.001$) and VfSAD (β of 0.065, $p=0.004$) were also independently associated with FEV1% predicted. The machine learning model using PRM topologies as inputs predicted FEV1 decline over five years with an AUC of 0.69.

Conclusions: We demonstrated that V and χ of fSAD and Norm have independent value when associated with lung function and emphysema. In addition, we demonstrated that these readouts are predictive of spirometric decline when used as inputs in a ML model. Our topological PRM approach using PRMfSAD and PRMNorm may show promise as an early indicator of emphysema onset and COPD progression.

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

1
Int J Cardiol

.
. 2023 Nov 22:131605.

doi: 10.1016/j.ijcard.2023.131605. Online ahead of print.

Multimorbidity in atrial fibrillation for clinical implications using the Charlson Comorbidity Index

Moonki Jung[1], Pil-Sung Yang[2], Daehoon Kim[1], Jung-Hoon Sung[2], Eunsun Jang[1], Hee Tae Yu[1], Tae-Hoon Kim[1], Jae-Sun Uhm[1], Hui-Nam Pak[1], Moon-Hyoung Lee[1], Boyoung Joung[3]

Affiliations expand

- PMID: 38000669

- DOI: 10.1016/j.ijcard.2023.131605

Abstract

Background: Predicting survival in atrial fibrillation (AF) patients with comorbidities is challenging. This study aimed to assess multimorbidity in AF patients using the Charlson Comorbidity Index (CCI) and its clinical implications.

Methods: We analyzed 451,368 participants from the Korea National Health Insurance Service-Health Screening cohort (2002-2013) without prior AF diagnoses. Patients were categorized into new-onset AF and non-AF groups, with a high CCI defined as ≥4 points. Antithrombotic treatment and outcomes (all-cause death, stroke, major bleeding, and heart failure [HF] hospitalization) were evaluated over 9 years.

Results: In total, 9.5% of the enrolled patients had high CCI. During follow-up, 12,241 patients developed new-onset AF. Among AF patients, antiplatelet drug use increased

significantly in those with high CCI (adjusted odds ratio [OR] 1.05, 95%confidence interval [CI] 1.02-1.08, P < .001). However, anticoagulants were significantly less prescribed in patients with high CCI (OR 0.97, 95%CI 0.95-0.99, P = .012). Incidence of adverse events (all-cause death, stroke, major bleeding, HF hospitalization) progressively increased in this order: low CCI without AF, high CCI without AF, low CCI with AF, and high CCI with AF (all P < .001). Furthermore, high CCI with AF had a significantly higher risk compared to low CCI without AF (all-cause death, adjusted hazard ratio [aHR] 2.52, 95% CI 2.37-2.68, P < .001; stroke, aHR 1.43, 95% CI 1.29-1.58, P < .001; major bleeding, aHR 1.14, 95% CI 1.04-1.26, P = .007; HF hospitalization, aHR 4.75, 95% CI 4.03-5.59, P < .001).

Conclusions: High CCI predicted increased antiplatelet use and reduced oral anticoagulant prescription. AF was associated with higher risks of all-cause death, stroke, major bleeding, and HF hospitalization compared to high CCI.

Keywords: Anticoagulation; Atrial fibrillation; Charlson Comorbidity Index; Multimorbidity.

Conflict of interest statement

Declaration of Competing Interest BJ has served as a speaker for Bayer, BMS/Pfizer, Medtronic, and Daiichi-Sankyo and received research funds from Medtronic and Abbott. No fees were received directly or personally. The remaining authors have no other relationships or activities that could appear to have influenced the submitted work.

2

Fam Pract

. 2023 Nov 24:cmad109.

doi: 10.1093/fampra/cmad109. Online ahead of print.

The role of social support as a moderator between resilience and levels of burden of multimorbidity management among general practitioners: a cross-sectional study in Portugal

Filipe Prazeres[1,2,3], Luísa Castro[3,4,5], Andreia Teixeira[3,5,6]

Affiliations expand

- PMID: 38001040

- DOI: 10.1093/fampra/cmad109

Abstract

Background: Multimorbidity management poses significant challenges for general practitioners (GPs). The aim of this study is to analyse the role of resilience and social support on the burden experienced by GPs in managing patients with multiple health conditions in Portugal.

Methods: Cross-sectional quantitative study conducted among GPs in Portugal using an online questionnaire that included validated measurement tools: Questionnaire of Evaluation of Burden of Management of Multimorbidity in General and Family Medicine (SoGeMM-MGF), European Portuguese Version of the Resilience Scale (ER14), and the Oslo Social Support Scale-3 (OSSS-3) in Portuguese. A multiple linear regression analysis was conducted to examine the factors influencing the burden of managing multimorbidity.

Results: Two hundred and thirty-nine GPs were included, with 76.6% being female and a median age of 35 years. Most participants were specialists (66.9%) and had less than a decade of experience managing multimorbidity. Over 70% had not received specific training in multimorbidity. Female GPs and those with a higher proportion of multimorbid patients in the registries experienced higher burden levels. A multivariate regression model with moderation revealed that the effect of resilience on burden varied depending on the level of social support. Higher resilience was associated with higher burden in the "Poor Social Support" category, while it was associated with lower burden in the "Moderate

Social Support" and "Strong Social Support" categories, although not statistically significant.

Conclusions: The study highlights the importance of GPs' social support and resilience in managing the burden of multimorbidity, with poor social support potentially worsening the effects of high resilience.

Keywords: cross-sectional study; general practitioners; multimorbidity; resilience; social support.

3

Review

Curr Rheumatol Rep

. 2023 Nov 23.

doi: 10.1007/s11926-023-01121-w. Online ahead of print.

Multimorbidity in Rheumatoid Arthritis: Literature Review and Future Directions

Jonathan Katz[1], Christie M Bartels[2]

Affiliations expand

- PMID: 37995046

- DOI: 10.1007/s11926-023-01121-w

Abstract

Purpose of review: To offer a narrative review of literature and an update on rheumatoid arthritis (RA) multimorbidity research over the past five years as well as future directions.

Recent findings: Patients with RA experience higher prevalence of multimorbidity (31-86% vs 18-71% in non-RA) and faster accumulation of comorbidities. Patients with multimorbidity have worse outcomes compared to non-RA multimorbid patients and RA without multimorbidity including mortality, cardiac events, and hospitalizations. Comorbid disease clusters often included: cardiopulmonary, cardiometabolic, and depression and pain-related conditions. High-frequency comorbidities included interstitial lung disease, asthma, chronic obstructive pulmonary disease, cardiovascular disease, fibromyalgia, osteoarthritis, and osteoporosis, thyroid disorders, hypertension, and cancer. Furthermore, patients with RA and multimorbidity are paradoxically at increased risk of high RA disease activity but experience a lower likelihood of biologic use and more biologic failures. RA patients experience higher prevalence of multimorbidity and worse outcomes versus non-RA and RA without multimorbidity. Findings call for further studies.

Keywords: COPD; Comorbidity; Depression; Multimorbidity; Pain; Rheumatoid Arthritis.

- 42 references

SUPPLEMENTARY INFO

Publication types, Grants and fundingexpand

FULL TEXT LINKS

UNIMORE

Proceed to details

Cite

Share

4

Ned Tijdschr Geneeskd

.
.
.
. 2023 Nov 22:167:D7906.

[Managing multimorbidity is more than counting the number of conditions]

[Article in Dutch]

Barbara C van Munster[1,2], Jako S Burgers[3]

Affiliations expand

- PMID: 37994714

Abstract

The prevalence of patients with multimorbidity, defined by two chronic conditions is rapidly increasing. Defining multimorbidity remains challenging, with varying criteria in research. A recent study by MacRae et al. examined the impact of the number and selection of conditions on estimated multimorbidity prevalence, revealing significant variations from 4.6% to 40.5%. To standardize the definition for research, MacRae et al. recommend using three measurement instruments (Ho always + usually, Barnett, or Fortin condition-lists) to consistently measure prevalence over time. Multimorbidity's complexity is not adequately captured by dichotomous definitions, as this depends on context and purpose. Chronic diseases profoundly affect daily life, leading to reduced physical function and adverse psychosocial outcomes. Patients often experience increased stress, anxiety, and depression, which can further exacerbate somatic conditions. To assess multimorbidity from a patient perspective, considering experienced health and quality of life indicators like ADL functioning, mobility, mood, memory, and social factors is crucial. Effectively managing multimorbidity requires a holistic, tailored approach, including identifying and prioritizing key health issues, promoting self-management, proactive care planning, and coordinating treatments. Understanding the potential for differential treatment effects and considering individual life expectancy is vital. Multimorbidity also places a significant burden on healthcare systems, leading to fragmented care, communication gaps, and increased costs. Identifying complex disease clusters with high mortality and resource utilization can guide integrated care efforts. In less complex cases, primary care physicians can collaborate to provide comprehensive care. Multimorbidity remains a priority in

healthcare, necessitating appropriate measurement and tailored interventions for diverse populations.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

5

Meta-Analysis

BMC Med

. 2023 Nov 23;21(1):418.

doi: 10.1186/s12916-023-03114-z.

Body mass index and cancer risk among adults with and without cardiometabolic diseases: evidence from the EPIC and UK Biobank prospective cohort studies

Emma Fontvieille[1], Vivian Viallon[1], Martina Recalde[1], Reynalda Cordova[1], Anna Jansana[1], Laia Peruchet-Noray[1 2], Hannah Lennon[1], Alicia K Heath[3], Dagfinn Aune[3 4 5], Sofia Christakoudi[3 6], Verena Katzke[7], Rudolf Kaaks[7], Elif Inan-Eroglu[8], Matthias B Schulze[8 9], Lene Mellemkjær[10], Anne Tjønneland[10 11], Kim Overvad[12], Marta Farràs[13], Dafina Petrova[14 15 16], Pilar Amiano[17 18 19], María-Dolores Chirlaque[16 20], Conchi Moreno-Iribas[16 21 22], Sandar Tin Tin[23], Giovanna Masala[24], Sabina

Sieri[25], Fulvio Ricceri[26], Salvatore Panico[27], Anne M May[28], Evelyn M Monninkhof[28], Elisabete Weiderpass[1], Marc J Gunter[1,3], Pietro Ferrari[1], Heinz Freisling[29]

Affiliations expand

- PMID: 37993940

- PMCID: PMC10666332

- DOI: 10.1186/s12916-023-03114-z

Abstract

Background: Whether cancer risk associated with a higher body mass index (BMI), a surrogate measure of adiposity, differs among adults with and without cardiovascular diseases (CVD) and/or type 2 diabetes (T2D) is unclear. The primary aim of this study was to evaluate separate and joint associations of BMI and CVD/T2D with the risk of cancer.

Methods: This is an individual participant data meta-analysis of two prospective cohort studies, the UK Biobank (UKB) and the European Prospective Investigation into Cancer and nutrition (EPIC), with a total of 577,343 adults, free of cancer, T2D, and CVD at recruitment. We used Cox proportional hazard regressions to estimate multivariable-adjusted hazard ratios (HRs) and 95% confidence intervals (CIs) for associations between BMI and incidence of obesity-related cancer and in turn overall cancer with a multiplicative interaction between BMI and the two cardiometabolic diseases (CMD). HRs and 95% CIs for separate and joint associations for categories of overweight/obesity and CMD status were estimated, and additive interaction was quantified through relative excess risk due to interaction (RERI).

Results: In the meta-analysis of both cohorts, BMI (per ~ 5 kg/m^2) was positively associated with the risk of obesity-related cancer among participants without a CMD (HR: 1.11, 95%CI: 1.07,1.16), among participants with T2D (HR: 1.11, 95% CI: 1.05,1.18), among participants with CVD (HR: 1.17, 95% CI: 1.11,1.24), and suggestively positive among those with both T2D and CVD (HR: 1.09, 95% CI: 0.94,1.25). An additive interaction between obesity (BMI ≥ 30 kg/m^2) and CVD with the risk of overall cancer translated into a meta-analytical RERI of 0.28 (95% CI: 0.09-0.47).

Conclusions: Irrespective of CMD status, higher BMI increased the risk of obesity-related cancer among European adults. The additive interaction between obesity and CVD suggests that obesity prevention would translate into a greater cancer risk reduction among population groups with CVD than among the general population.

Keywords: Cardiovascular diseases; Comorbidities; Multimorbidity; Obesity; Obesity-related cancers; Type 2 diabetes.

Conflict of interest statement

The authors declare that they have no competing interests.

- 48 references
- 2 figures

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

6

Arthritis Care Res (Hoboken)

. 2023 Nov 20.

doi: 10.1002/acr.25273. Online ahead of print.

Classifying Multimorbidity Using Drug Concepts via the Rx-Risk Comorbidity Index: Methods & Comparative Cross-sectional Study

Jared J Vanderbleek [1,2], Justin K Owensby [2], Alex McAnnally [1], Bryant R England [3], Lang Chen [1], Jeffrey R Curtis [1], Huifeng Yun [1]

Affiliations expand

- PMID: 37986017

- DOI: 10.1002/acr.25273

Abstract

Objective: To update a method to identify comorbid conditions using only medication information in circumstances where diagnosis codes may be under-captured, such as in single-specialty EHRs, and to compare the distribution of comorbidities across Rx-Risk vs. other traditional comorbidity indices.

Methods: Using First Databank (FDB), RxNorm, and its web-based clients, RxNav and RxClass, we mapped Drug Concept Unique Identifiers (RxCUIs), National Drug Codes (NDCs), and Anatomical Therapeutic Chemical (ATC) codes to Rx-Risk, a medication-focused comorbidity index. In established RA and OA cohorts within the Rheumatology Informatics System for Effectiveness (RISE) registry, we then compared Rx-Risk with other comorbidity indices, including the Charlson Comorbidity Index, Rheumatic Disease Comorbidity Index (RDCI), and Elixhauser.

Results: We identified 965 unique ingredient RxCUIs representing the 46 Rx-Risk comorbidity categories. After excluding dosage form and ingredient related RxCUIs, 80,911 unique associated RxCUIs were mapped to the index. Additionally,187,024 unique NDCs and 354 ATC codes were obtained and mapped to the index categories. When compared to traditional comorbidity indices in the RA cohort, the median score (median/25th ,75th percentiles) for Rx-Risk: 6.00 (2,9), was much greater than for Charlson: 0 (0,0), RDCI: 0 (0,0), and Elixhauser: 1 (1,1). Analyses of the OA cohort yielded similar results. For patients with a Charlson score of 0 (85% of total), both the RDCI and Elixhauser were close to 1, but the Rx-Risk score ranged from 0 to 16 or more.

Conclusions: The misclassification and under ascertainment of comorbidities in single-specialty EHRs can largely be overcome by using a medication-focused comorbidity index.

7

Geriatr Gerontol Int

.

. 2023 Nov 20.

doi: 10.1111/ggi.14727. Online ahead of print.

Multimorbidity, consisting of a combination of chronic diseases and geriatric syndromes, predicts the risk of difficulty in discharge home in older patients admitted to acute care hospital

Rika Iwakiri[1], Hironobu Hamaya[1], Tomohiro Nakayama[1], Ai Kataoka[1], Yoko Murano[1], Teiki Okawa[1], Atsushi Araki[2]

Affiliations expand

- PMID: 37983916

- DOI: 10.1111/ggi.14727

Abstract

Aim: To determine whether multimorbidity, consisting of chronic diseases and geriatric syndromes, is associated with home discharge difficulties in older patients.

Methods: A total of 522 older adults (mean age: 85 ± 7 years) who were admitted to an acute care hospital were enrolled. Multimorbidity was assessed by calculating the number of 16 chronic conditions (CCs): 8 chronic diseases (cardiac diseases, diabetes mellitus, chronic kidney disease, respiratory diseases, gastrointestinal diseases, anemia, dementia,

and Parkinson disease) and 8 geriatric syndromes (depression, constipation, chronic pain, polypharmacy, dysphagia, underweight, hypoalbuminemia, and functional limitations). The patients were divided into four groups based on the number of CCs. The outcome was difficulty in discharging home (transfer to other facilities or in-hospital death). Multivariate logistic regression analysis was performed to assess independent associations between four CC groups and failure to discharge home after adjusting for age, sex, living alone, and Barthel index and odds ratio (OR) and 95% confidence interval (CI) were calculated.

Results: Of the 522 patients, 18.8% were transferred to other facilities or died. The proportion of poor outcome in those with 0-2, 3-4, 5-6, and ≥7 CCs was 4.4%, 14.8%, 25.5%, and 37.5%, respectively. Logistic regression analysis after adjusting for covariates revealed that multimorbidity increased the risk of difficulty in discharging home (OR, 2.9 [95% CI, 1.1-8.0] for 3-4 CCs; OR, 4.9 [95% CI, 1.8-13.5] for 5-6 CCs; OR, 8.7 [95% CI, 3.1-24.6] for ≥7 CCs).

Conclusion: Multimorbidity, consisting of chronic diseases and geriatric syndromes, predicted difficulty in discharge home in older patients. Geriatr Gerontol Int 2023; ••: ••-••.

Keywords: chronic conditions; discharge destination; geriatric syndromes; multimorbidity; older adults.

- 27 references

Association of multimorbidity with mortality after stroke stratified by age, severity, etiology, and prior disability

Matthew B Downer[1], Ramon Luengo-Fernandez[1], Lucy E Binney[1], Sergei Gutnikov[1], Louise E Silver[1], Aubretia McColl[1], Peter M Rothwell[1]

Affiliations expand

- PMID: 37850450

- DOI: 10.1177/17474930231210397

Abstract

Background: Multimorbidity is common in patients with stroke and is associated with increased medium- to long-term mortality, but its value for clinical decision-making and case-mix adjustment will depend on other factors, such as age, stroke severity, etiological subtype, prior disability, and vascular risk factors.

Aims: In the absence of previous studies, we related multimorbidity to long-term post-stroke mortality with stratification by these factors.

Methods: In patients ascertained in a population-based stroke incidence study (Oxford Vascular Study; 2002-2017), we related pre-stroke multimorbidity (weighted/unweighted Charlson comorbidity index (CCI)) to all-cause/vascular/non-vascular mortality (1/5/10 years) using regression models adjusted/stratified by age, sex, predicted early outcome (THRIVE score), stroke severity (NIH stroke scale (NIHSS)), etiology (Trial of Org 10172 in Acute Stroke Treatment (TOAST)), premorbid disability (modified Rankin Scale (mRS)), and non-CCI risk factors (hypertension, hyperlipidemia, atrial fibrillation, smoking, deprivation, anxiety/depression).

Results: Among 2454 stroke patients (M/SD age: 74.1/13.9 years; 48.9% male; M/SD NIHSS: 5.7/7.0), 1375/56.0% had $\geqslant$ 1 CCI comorbidity and 685/27.9% had $\geqslant$ 2. After age/sex adjustment, multimorbidity (unweighted CCI $\geqslant$ 2 vs 0) predicted (all ps < 0.001) mortality at 1 year (aHR = 1.57, 95% CI = 1.38-1.78), 5 years (aHR = 1.73, 95% CI = 1.53-1.96), and 10 years (aHR = 1.79, 95% CI = 1.58-2.03). Although multimorbidity was independently associated with premorbid disability (mRS > 2: aOR = 2.76, 2.13-3.60) and non-CCI risk factors (hypertension: 1.56, 1.25-1.95; hyperlipidemia: 2.58, 2.03-3.28; atrial fibrillation: 2.31; 1.78-2.98; smoking: 1.37, 1.01-1.86), it predicted death after adjustment for all measured confounders (10-year-aHR = 1.56, 1.37-1.78, p < 0.001), driven mainly by

non-vascular death (aHR = 1.89, 1.55-2.29). Predictive value for 10-year all-cause death was greatest in patients with lower expected early mortality: lower THRIVE score (p_{int} < 0.001), age < 75 years (aHR = 2.27, 1.71-3.00), NIHSS < 5 (1.84, 1.53-2.21), and lacunar stroke (3.56, 2.14-5.91). Results were similar using the weighted CCI.

Conclusion: Pre-stroke multimorbidity is highly prevalent and is an independent predictor of death after stroke, supporting its inclusion in case-mix adjustment models and in informing decision-making by patients, families, and carers. Prediction in younger patients and after minor stroke, particularly for non-vascular death, suggests potential clinical utility in targeting interventions that require survival for 5-10 years to achieve a favorable risk/benefit ratio.

Data access statement: Data requests will be considered by the Oxford Vascular Study (OXVASC) Study Director (P.M.R.-peter.rothwell@ndcn.ox.ac.uk).

Keywords: Chronic disease; epidemiology; long-term outcomes; multimorbidity; post-stroke mortality; prognosis.

Conflict of interest statement

Declaration of conflicting interestsThe author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.
DisclosuresP.M.R. has received honoraria for Data Monitoring Boards, Advisory Boards, and lectures from Bayer, Sanofi, Bristol Myers Squibb (BMS), and Abbott. All other authors have no disclosures.

9

Fam Pract

. 2023 Nov 23;40(4):523-530.

doi: 10.1093/fampra/cmad089.

The association between patients' frailty status, multimorbidity, and demographic characteristics and changes in primary care for chronic conditions during the COVID-19 pandemic: a pre-post study

Shireen Fikree[1,2], Shuaib Hafid[2], Jennifer Lawson[2], Gina Agarwal[2], Lauren E Griffith[3], Liisa Jaakkimainen[4,5], Dee Mangin[2,6], Michelle Howard[2]

Affiliations expand

- PMID: 37624946

- DOI: 10.1093/fampra/cmad089

Abstract

Background: The purpose of this study was to assess the impact of SARS-COV-2 (Severe acute respiratory syndrome coronavirus 2) pandemic on primary care management (frequency of monitoring activities, regular prescriptions, and test results) of older adults with common chronic conditions (diabetes, hypertension, and chronic kidney disease) and to examine whether any changes were associated with age, sex, neighbourhood income, multimorbidity, and frailty.

Methods: A research database from a sub-set of McMaster University Sentinel and Information Collaboration family practices was used to identify patients ≥65 years of age with a frailty assessment and 1 or more of the conditions. Patient demographics, chronic conditions, and chronic disease management information were retrieved. Changes from 14 months pre to 14 months since the pandemic were described and associations between patient characteristics and changes in monitoring, prescriptions, and test results were analysed using regression models.

Results: The mean age of the 658 patients was 75 years. While the frequency of monitoring activities and prescriptions related to chronic conditions decreased overall, there were no clear trends across sub-groups of age, sex, frailty level, neighbourhood income, or number of conditions. The mean values of disease monitoring parameters (e.g. blood pressure) did not considerably change. The only significant regression model

demonstrated that when controlling for all other variables, patients with 2 chronic conditions and those with 4 or more conditions were twice as likely to have reduced numbers of eGFR (Estimated glomerular filtration rate) measures compared to those with only 1 condition ((OR (odds ratio) = 2.40, 95% CI [1.19, 4.87]); (OR = 2.19, 95% CI [1.12, 4.25]), respectively).

Conclusion: In the first 14 months of the pandemic, the frequency of common elements of chronic condition care did not notably change overall or among higher-risk patients.

Keywords: COVID-19; diabetes; frailty; hypertension; kidney diseases; multimorbidity; primary care.

SUPPLEMENTARY INFO

Grants and fundingexpand

FULL TEXT LINKS

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

1
Review

Sensors (Basel)

. 2023 Nov 19;23(22):9271.

doi: 10.3390/s23229271.

The State of the Art on Graphene-Based Sensors for Human Health Monitoring through Breath Biomarkers

Pedro Catalão Moura [1], Paulo António Ribeiro [1], Maria Raposo [1], Valentina Vassilenko [1]

Affiliations expand

- PMID: 38005657

- DOI: 10.3390/s23229271

Abstract

The field of organic-borne biomarkers has been gaining relevance due to its suitability for diagnosing pathologies and health conditions in a rapid, accurate, non-invasive, painless and low-cost way. Due to the lack of analytical techniques with features capable of analysing such a complex matrix as the human breath, the academic community has focused on developing electronic noses based on arrays of gas sensors. These sensors are assembled considering the excitability, sensitivity and sensing capacities of a specific nanocomposite, graphene. In this way, graphene-based sensors can be employed for a vast range of applications that vary from environmental to medical applications. This review work aims to gather the most relevant published papers under the scope of "Graphene sensors" and "Biomarkers" in order to assess the state of the art in the field of graphene sensors for the purposes of biomarker identification. During the bibliographic search, a total of six pathologies were identified as the focus of the work. They were lung cancer, gastric cancer, chronic kidney diseases, respiratory diseases that involve inflammatory processes of the airways, like asthma and chronic obstructive pulmonary disease, sleep apnoea and diabetes. The achieved results, current development of the sensing sensors, and main limitations or challenges of the field of graphene sensors are discussed throughout the paper, as well as the features of the experiments addressed.

Keywords: asthma; biomarkers; chronic kidney diseases; chronic obstructive pulmonary disease; diabetes; exhaled air; gastric cancer; graphene; graphene-based sensors; lung cancer; sleep apnoea.

2

BMC Public Health

. 2023 Nov 24;23(1):2330.

doi: 10.1186/s12889-023-17274-3.

Exploring the use of masks for protection against the effects of wildfire smoke among people with preexisting respiratory conditions

Holly Seale[1], M Trent[2], G B Marks[3,4], S Shah[5,6], A A Chughtai[7], C R MacIntyre[2]

Affiliations expand

- PMID: 38001501

- DOI: 10.1186/s12889-023-17274-3

Abstract

Background: The impact of wildfire smoke is a growing public health issue, especially for those living with preexisting respiratory conditions. Understanding perceptions and behaviors relevant to the use of individual protective strategies, and how these affect the adoption of these strategies, is critical for the development of future communication and support interventions. This study focused on the use of masks by people living in the Australian community with asthma or chronic obstructive pulmonary disease (COPD).

Methods: Semi-structured phone interviews were undertaken with people living in the community aged 18 years and over. Participants lived in a bushfire-prone area and reported having been diagnosed with asthma or COPD.

Results: Twenty interviews were undertaken between July and September 2021. We found that, during wildfire episodes, there was an overwhelming reliance on closing windows and staying inside as a means of mitigating exposure to smoke. There was limited use of masks for this purpose. Even among those who had worn a mask, there was little consideration given to the type of mask or respirator used. Reliance on sensory experiences with smoke was a common prompt to adopting an avoidance behavior. Participants lacked confidence in the information available from air-quality apps and websites, however they were receptive to the idea of using masks in the future.

Conclusions: Whilst COVID-19 has changed the nature of community mask use over the last couple of years, there is no guarantee that this event will influence an individual's mask behavior during other events like bushfires. Instead, we must create social support processes for early and appropriate mask use, including the use of air quality monitoring.

Keywords: Air pollution; Communication; Masks; Public health; Respiratory health; Wildfire.

- 38 references

SUPPLEMENTARY INFO

Grants and fundingexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

3

Allergol Int

-
-
-

. 2023 Nov 23:S1323-8930(23)00114-4.

doi: 10.1016/j.alit.2023.11.002. Online ahead of print.

Increased blood eosinophils and airflow obstruction as new-onset asthma predictors in the elderly: The Nagahama study

Kenta Nishi[1], Tadao Nagasaki[2], Hisako Matsumoto[3], Tsuyoshi Oguma[1], Satoru Terada[1], Natsuko Nomura[1], Mariko Kogo[1], Noriyuki Tashima[4], Hironobu Sunadome[5], Kimihiko Murase[6], Takeshi Matsumoto[7], Takahisa Kawaguchi[8], Yasuharu Tabara[9], Fumihiko Matsuda[8], Susumu Sato[5], Kazuo Chin[10], Toyohiro Hirai[1]

Affiliations expand

- PMID: 38001017

- DOI: 10.1016/j.alit.2023.11.002

Abstract

Background: Asthma in the elderly needs more attention in an aging society. However, it is likely to remain underdiagnosed and undertreated. This study aimed to clarify clinical characteristics of new-onset asthma in the elderly, describing the prevalence, predictive factors, and comorbidities after asthma diagnosis of new-onset asthma in the elderly in the general population.

Methods: This community-based prospective cohort study enrolled 9804 generally healthy participants (30-74 years old) in Nagahama City, and conducted a follow-up assessment after 5 years. Elderly participants were those aged ≥65 years at baseline. Patients with new-onset asthma were defined as participants without asthma at baseline assessment and with asthma at the follow-up assessment.

Results: Among the 7948 participants analyzed in this study, 28 (1.4%) elderly and 130 (2.2%) non-elderly had new-onset asthma. Multiple logistic regression analysis revealed low forced expiratory volume in 1 s (FEV_1)/forced vital capacity (FVC) and high blood eosinophil counts at baseline as predicting factors for new-onset asthma in the elderly. Additionally, subsequent incidence of new-onset asthma was higher in elderly participants with both predictors (high blood eosinophil counts and low FEV_1/FVC at baseline) than those with none or one of the predictors before asthma diagnosis. Lastly, elderly patients with new-onset asthma had more frequent comorbidity of moderate to sleep disordered breathing than those non-elderly.

Conclusions: Eosinophilic inflammation and airflow obstruction may predict subsequent new-onset asthma after the age of 65 years. Revealing the characteristics of new-onset asthma in the elderly can aid in the prevention of underdiagnosed asthma.

Keywords: Airflow obstruction; Elderly; Eosinophil; New-onset asthma; Sleep-disordered breathing.

4

Review

J Asthma

. 2023 Nov 24:1-19.

doi: 10.1080/02770903.2023.2288317. Online ahead of print.

Risk Factors Associated with Uncontrolled Asthma in Children- A Systematic Review and Meta-Analysis

Muhammad Imran Arif[1], Liang Ru[1], Yanan Wang[1]

Affiliations expand

- PMID: 37999990

- DOI: 10.1080/02770903.2023.2288317

Abstract

Objective: We aim to assess the risk factors of uncontrolled asthma in children and adolescents. **Method:** A systemic search was conducted from electronic databases (PubMed/Medline, Cochrane Library, and Google Scholar) from inception to July 17, 2023. All statistical analyses were conducted in Review Manager 5.4.1. Studies meeting inclusion criteria were selected. A random-effect model was used when heterogeneity was seen to pool the studies, and the result was reported in the Odds Ratio (OR) and the corresponding 95% confidence interval (CI). We also used a narrative approach where it was not feasible to quantitatively assess the outcome. **Results:** Ten observational studies were used to conduct this systematic review and meta-analysis. A quantitative analysis of five factors was done. Pooled analysis showed a statistically significant risk of uncontrolled asthma in association with past hypersensitivity reactions (SMD = 1.51 (1.16, 1.98); p = 0.002; I2 = 84%) and incomplete controller adherence (SMD = 3.15 (1.83, 5.41); p < 0.0001; I2 = 94%). While non-significant relation was seen in parental asthma (SMD = 1.23 (0.98, 1.55); p = 0.07; I2 = 15%), oral corticosteroid use (SMD = 0.99 (0.72, 1.36); p = 0.96; I2 = 81%) and education of caregivers (SMD = 0.99 (0.72, 1.36); p = 0.96; I2 = 81%). Some other factors were also discussed qualitatively. **Conclusion:** Our study shows that some significant risk factors might cause uncontrolled asthma in children and adolescents like past hypersensitivity reactions and incomplete controller adherence.

Keywords: Adolescents; Children; Risk factors; Uncontrolled asthma.

Expert Rev Respir Med

. 2023 Nov 24:1-7.

doi: 10.1080/17476348.2023.2278606. Online ahead of print.

Gene signatures in U-BIOPRED severe asthma for molecular phenotyping and precision medicine: time for clinical use

Nazanin Kermani[1], Ali Versi[1], Aurore Gay[2], Jelmer Vlasma[2], Akshaya Keerthi Saikumar Jayalatha[2], Gerard H Koppelman[2,3], Martijn Nawijn[2], Alen Faiz[4], Maarten van den Berge[2,5], Ian M Adcock[1], Kian Fan Chung[1,6]

Affiliations expand

- PMID: 37997709

- DOI: 10.1080/17476348.2023.2278606

Abstract

Introduction: The use and generation of gene signatures have been established as a method to define molecular endotypes in complex diseases such as severe asthma. Bioinformatic approaches have now been applied to large omics datasets to define the various co-existing inflammatory and cellular functional pathways driving or characterizing a particular molecular endotype.

Areas covered: Molecular phenotypes and endotypes of Type 2 inflammatory pathways and also of non-Type 2 inflammatory pathways, such as IL-6 trans-signaling, IL-17 activation, and IL-22 activation, have been defined in the Unbiased Biomarkers for the Prediction of Respiratory Disease Outcomes dataset. There has also been the identification of the role of mast cell activation and of macrophage dysfunction in various phenotypes of severe asthma.

Expert opinion: Phenotyping on the basis of clinical treatable traits is not sufficient for understanding of mechanisms driving the disease in severe asthma. It is time to consider whether certain patients with severe asthma, such as those non-responsive to current therapies, including Type 2 biologics, would be better served using an approach of

molecular endotyping using gene signatures for management purposes rather than the current sole reliance on blood eosinophil counts or exhaled nitric oxide measurements.

Keywords: Severe asthma; differential gene expression; endotypes; gene set variation analysis; gene signatures; molecular phenotypes; topological data analysis.

6

BMJ Open

. 2023 Nov 23;13(11):e070155.

doi: 10.1136/bmjopen-2022-070155.

Nebulised furosemide for the treatment of patients with obstructive lung disease: a systematic review protocol

Richard Veldhoen[1], John Muscedere[2]

Affiliations expand

- PMID: 37996224

- PMCID: PMC10668269

- DOI: 10.1136/bmjopen-2022-070155

Free PMC article

Abstract

Introduction: Obstructive lung diseases (OLDs) such as asthma and chronic obstructive pulmonary disease are major global sources of morbidity and mortality. Current treatments broadly include bronchodilators such as beta agonists/antimuscarinics and anti-inflammatory agents such as steroids. Despite therapy patients still experience exacerbations of their diseases and overall decline over time. Nebulised furosemide may have a novel use in the treatment of OLD. Multiple small studies have shown improvement in pulmonary function as well as dyspnoea. This systematic review will aim to summarise and analyse the existing literature on nebulised furosemide use in OLD to guide treatment and future studies.

Methods and analysis: We will identify all experimental studies using nebulised/inhaled furosemide in patients with asthma or chronic obstructive pulmonary disease that report any outcome. Databases will include EMBASE, MEDLINE, Cochrane Database of Systematic Reviews, ACP Journal Club, Database of Abstracts of Reviews of Effects, Cochrane Clinical Answers, Cochrane Central Register of Controlled Trials, Cochrane Methodology Register, Health Technology Assessment and the NHS Economic Evaluation Database (1995-2015). We will also search ClinicalTrials.gov and the WHO-International Clinical Trials Registry Platform. Two reviewers will independently determine trial eligibility. For each included trial, we will perform duplicate independent data extraction, risk of bias assessment and evaluation of the quality of evidence using the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach.

Ethics and dissemination: Ethical approval will not be applicable to this systematic review. The results of the study will be communicated through publication in peer-reviewed journals.

Prospero registration number: CRD42021284680.

Keywords: asthma; chronic airways disease; emphysema.

Conflict of interest statement

Competing interests: None declared.

- 30 references

FULL TEXT LINKS

Proceed to details

Cite

Share

7

Respir Med

-
-
-

. 2023 Nov 22:220:107477.

doi: 10.1016/j.rmed.2023.107477. Online ahead of print.

Contrasting healthcare costs of COPD and asthma in elderly

Tiina Mattila[1], Tuula Vasankari[2], Fredrik Herse[3], Riikka-Leena Leskelä[3], Marina Erhola[4], Heidi Avellan-Hietanen[5], Sanna Toppila-Salmi[6], Tari Haahtela[7]

Affiliations expand

- PMID: 37995877

- DOI: 10.1016/j.rmed.2023.107477

Abstract

Background: Caring for ageing populations creates new challenges for society. Obstructive pulmonary diseases, asthma and especially COPD, are responsible for considerable morbidity, mortality, and financial costs in the elderly. We present the change in the burden of asthma and COPD in those aged ≥60 years in Finland from 1996 to 2018.

Methods: We collected national register data from 1996 to 2018 from Statistics Finland, Care Register for Health Care, and the Social Insurance Institution. We estimated the prevalence of asthma and severe COPD, use of healthcare, social services, reimbursed inhalation medications, and societal costs.

Results: In subjects aged ≥60 years, the prevalence was 8% for asthma with reimbursed medication and 0·7% for severe COPD in 2018. In 1996-2018, total costs increased from 33 M€ to 58 M€ (+57%) for asthma and decreased from 38 M€ to 30 M€ (-27%) for COPD. Costs per patient decreased for asthma from 720 € to 460 € (-57%) and remained stable for COPD (2700 € in 2018). Potential years of life lost (PYLL) increased in COPD from 5000 to 6400 (+28%) and the number of emergency department visits increased from 3700 to 6000 (+62%).

Conclusions: In a population aged ≥60 years, the total burden caused by asthma decreased but remained stable and high in COPD. PYLL and visits in emergency care increased in COPD.

Keywords: Asthma; COPD; Elderly; Epidemiology; Public health.

Conflict of interest statement

Declaration of competing interest There is no conflict of interest.

8

Review

Curr Rheumatol Rep

. 2023 Nov 23.

doi: 10.1007/s11926-023-01121-w. Online ahead of print.

Multimorbidity in Rheumatoid Arthritis: Literature Review and Future Directions

Jonathan Katz[1], Christie M Bartels[2]

Affiliations expand

- PMID: 37995046

- DOI: 10.1007/s11926-023-01121-w

Abstract

Purpose of review: To offer a narrative review of literature and an update on rheumatoid arthritis (RA) multimorbidity research over the past five years as well as future directions.

Recent findings: Patients with RA experience higher prevalence of multimorbidity (31-86% vs 18-71% in non-RA) and faster accumulation of comorbidities. Patients with multimorbidity have worse outcomes compared to non-RA multimorbid patients and RA without multimorbidity including mortality, cardiac events, and hospitalizations. Comorbid disease clusters often included: cardiopulmonary, cardiometabolic, and depression and pain-related conditions. High-frequency comorbidities included interstitial lung disease, asthma, chronic obstructive pulmonary disease, cardiovascular disease, fibromyalgia, osteoarthritis, and osteoporosis, thyroid disorders, hypertension, and cancer. Furthermore, patients with RA and multimorbidity are paradoxically at increased risk of high RA disease activity but experience a lower likelihood of biologic use and more biologic failures. RA patients experience higher prevalence of multimorbidity and worse outcomes versus non-RA and RA without multimorbidity. Findings call for further studies.

Keywords: COPD; Comorbidity; Depression; Multimorbidity; Pain; Rheumatoid Arthritis.

- 42 references

SUPPLEMENTARY INFO

Publication types, Grants and fundingexpand

9

Expert Rev Pharmacoecon Outcomes Res

. 2023 Nov 23.

doi: 10.1080/14737167.2023.2282668. Online ahead of print.

Cost-effectiveness analysis of dupilumab versus omalizumab, mepolizumab and benralizumab added to the standard of care in adults with severe asthma in Colombia

Abraham Ali[1], Elizabeth García[2], Carlos A Torres-Duque[3], Diana Rey[4], Laura Botero[5], Stid Saenz[5], Maria Paula Avila[5], Elizabeth Mazo[5], Sergio Londoño[5]

Affiliations expand

- PMID: 37994432

- DOI: 10.1080/14737167.2023.2282668

Abstract

Background: Cost-effectiveness studies evaluate health technologies and help choose treatments. The current study compared dupilumab to omalizumab, mepolizumab, and benralizumab in Colombian adults with severe uncontrolled type 2 asthma.

Methods: TheMarkov model, over a 5-year period, assessed biologic costs andmanagement of exacerbations, comparing various doses of dupilumab,omalizumab, mepolizumab, and benralizumab as add-on treatments. Itincluded a 5% annual discount rate per local HTA, and setwillingness-to-pay at three times GDP per capita per quality-adjustedlife year (QALY) in Colombia.

Results: Dupilumab 200 mg demonstrated higher QALYs and lower total costs thanmepolizumab 100 mg, benralizumab 30 mg and omalizumab 450 mg and 600 mg, with the incremental cost-effectiveness ratio (ICER) per QALYgained being -$5.429, -$6.269, -$196.567 and -$991.007, respectively.Dupilumab had greater QALYs and costs versus omalizumab 300 mg (ICERof $200.653 per QALY, above the willingness-to-pay threshold of 3×GDPper capita). Sensitivity analyses were consistent with base caseresults.

Conclusions: Dupilumab 200 mg was strongly dominant versus omalizumab 450 mg and600 mg, mepolizumab 100 mg and benralizumab 30 mg; however,cost-effectiveness was not demonstrated versus omalizumab 300 mg.These findings might aid in the selection of a biologic to treatsevere type 2 asthma.

Keywords: Cost- effectiveness; dupilumab; exacerbations; severe asthma; standard of care.

10

Meta-Analysis

BMC Pulm Med

. 2023 Nov 22;23(1):462.

doi: 10.1186/s12890-023-02761-5.

Asthma and COPD as co-morbidities in patients hospitalised with Covid-19 disease: a global systematic review and meta-analysis

James Patrick Finnerty[1,2], A B M Arad Hussain[3], Aravind Ponnuswamy[4,5], Hafiz Gulzeb Kamil[4], Ammar Abdelaziz[4]

Affiliations expand

- PMID: 37993829
- PMCID: PMC10664669
- DOI: 10.1186/s12890-023-02761-5

Abstract

Background: Factors predisposing to increased mortality with COVID-19 infection have been identified as male sex, hypertension, obesity, and increasing age. Early studies looking at airway diseases gave some contradictory results. The purpose of our study was to determine global variation in studies in patients hospitalized with COVID-19 in the prevalence of COPD and asthma; and to determine whether the presence of asthma or COPD affected mortality in the same hospital population.

Methods: A systematic review and meta-analysis of the published literature of COPD and asthma as co-morbidities in patients hospitalized with COVID-19 was performed, looking firstly at the prevalence of these diseases in patients hospitalized with COVID-19, and secondly at the relative risk of death from any cause for patients with asthma or COPD.

Results: Prevalence of both airway diseases varied markedly by region, making meaningful pooled global estimates of prevalence invalid and not of clinical utility. For individual studies, the interquartile range for asthma prevalence was 4.21 to 12.39%, and for COPD, 3.82 to 11.85%. The relative risk of death with COPD for patients hospitalized with COVID-19 was 1.863 (95% CI 1.640-2.115), while the risk with asthma was 0.918 (95% CI 0.767 to 1.098) with no evidence of increased mortality.

Conclusions: For asthma and COPD, prevalence in patients hospitalized with COVID-19 varies markedly by region. We found no evidence that asthma predisposed to increased

mortality in COVID-19 disease. For COPD, there was clear evidence of an association with increased mortality.

Trial registration: The trial was registered with PROSPERO: registration number CRD42021289886.

Keywords: Asthma; COPD; COVID-19; Chronic obstructive pulmonary disease; SARS-Cov-2.

Conflict of interest statement

The authors declare no competing interests.

- 78 references
- 5 figures

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

UNIMORE

Proceed to details

Cite

Share

11

BMJ Open Respir Res

-
-
-

. 2023 Nov 22;10(1):e001588.

doi: 10.1136/bmjresp-2022-001588.

Survey-identified experiences of prediagnosis and diagnosis process

among patients with COPD, asthma, interstitial lung disease and bronchiectasis

Xiubin Zhang [1], Andrew Ellis [2], Jennifer K Quint [3], Alex Bottle [1]

Affiliations expand

- PMID: 37993278
- PMCID: PMC10668245
- DOI: 10.1136/bmjresp-2022-001588

Free PMC article

Abstract

Introduction: Diagnosis of asthma, chronic obstructive pulmonary disease (COPD), bronchiectasis and interstitial lung disease (ILD) can be convoluted, and limited data exist on understanding the experience of diagnosis from a patient perspective.

Aim: To investigate a patient's 'route to diagnosis', particularly focusing on the time prior to seeking healthcare, and perceived experiences of the diagnostic pathway.

Methods: An online survey was distributed via the UK Taskforce for Lung Health and member mailing lists to patients as well as the website and social media accounts from 23 May 2022 to 5 July 2022. Analysis was descriptive; χ^2 tests were performed to make comparisons across diseases.

Results: There were 398 valid responses (COPD=156, asthma=119, ILD=67 and bronchiectasis=56). While only 9.2% of respondents who were eventually diagnosed with asthma had not heard of their disease, the corresponding percentages for COPD, ILD and bronchiectasis were 34.0%, 74.6% and 69.6%, respectively. 33.9% of people with bronchiectasis believed their delayed diagnosis was due to the health professionals' lack of expertise or knowledge-24.4% for asthma, 19.2% for COPD and 17.9% for ILD.People with COPD were more likely (37.2%) and patients with asthma less likely (10.9%) to report they did not know the signs of potential lung disease ($p<0.001$). People with COPD were more likely to report that they did not appreciate the severity or urgency of the situation (58.3%) than people with asthma (32.8%), ILD (43.3%) or bronchiectasis (28.6%, $p<0.001$). The

proportion of patients reporting that they were being initially treated for another lung condition was higher in people with bronchiectasis (44.6%) and lower in people with asthma (8.4%, p<0.001).

Conclusions: Perceived reasons for diagnostic delay can help health professionals promote early diagnosis and management. Patients' limited knowledge of respiratory diseases also played a factor, indicating the necessity to promote patients' knowledge to encourage earlier help seeking.

Keywords: COPD; asthma; bronchiectasis; diagnosis; interstitial lung disease; online survey.

Conflict of interest statement

Competing interests: None declared.

- 17 references

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

12

Int Arch Allergy Immunol

-
-
-

. 2023 Nov 22:1-9.

doi: 10.1159/000534907. Online ahead of print.

Comparison of the General Characteristics of Patients with Severe Asthma Who Switched from Omalizumab to Mepolizumab versus Patients Who Responded to Omalizumab Treatment: A Real-Life Study

Mehmet Erdem Cakmak[1], Nida Öztop[1], Osman Ozan Yeğit[1]

Affiliations expand

- PMID: 37992693

- DOI: 10.1159/000534907

Abstract

Introduction: Severe asthma is characterized by frequent recurrent airway symptoms and exacerbations, and these affect the quality of life. Biological agents can be used in the treatment of patients with severe asthma if the disease cannot be controlled with standard controller treatment. The aim of this study was to compare the clinical characteristics and laboratory data of patients with severe asthma who were switched from omalizumab to mepolizumab and patients with severe asthma who responded to omalizumab.

Methods: The clinical characteristics and laboratory data of patients with severe asthma who responded to omalizumab and switched from omalizumab to mepolizumab were compared retrospectively.

Results: Evaluation was made of a total of 79 patients, including 64 omalizumab responders and 15 who switched to mepolizumab from omalizumab. After omalizumab and mepolizumab treatment, the annual number of asthma attacks, the use of oral corticosteroid (OCS), the annual number of hospitalizations, and the eosinophil count significantly decreased (omalizumab: p < 0.001, p < 0.001, p < 0.001, p < 0.001, respectively; mepolizumab: p = 0.001, p = 0.001, p = 0.002, p = 0.001, respectively). After omalizumab treatment, the increase in forced expiratory volume in 1 s (FEV1) (%) and asthma control test (ACT) score were determined to be statistically significant (p < 0.001,

p < 0.001, respectively). After mepolizumab treatment, the increase in ACT score was significant (p = 0.003). Drug allergy, chronic sinusitis with nasal polyps (CRSwNP), regular use of OCS, and high baseline eosinophil count (cells/μL) were associated with poor response to omalizumab treatment (odds ratio [OR] = 7.86, p = 0.003; OR = 52.92, p < 0.001; OR = 10.16, p = 0.004; OR = 0.99, p = 0.004, respectively). House dust mite sensitivity and high baseline FEV1 (%) were associated with good response to omalizumab treatment (OR = 0.29, p = 0.041; OR = 1.06, p = 0.03, respectively). The blood eosinophil count had diagnostic value in predicting the nonresponsiveness to omalizumab treatment (area under the curve [AUC]: 0.967, p < 0.001, cut-off: 510).

Conclusion: A high pretreatment eosinophil count, concomitant CRSwNP, a history of drug allergy, and regular OCS use may be associated with poor response to omalizumab treatment in patients with severe asthma. Depending on the treatment response, treatment switching can be applied between biological agents. The results of the current study should be supported by multicenter studies.

Keywords: Anti-immunoglobulin E; Asthma; Biologics; Mepolizumab; Omalizumab.

13

PLoS One

. 2023 Nov 22;18(11):e0288903.

doi: 10.1371/journal.pone.0288903. eCollection 2023.

Use of feature importance statistics to accurately predict asthma attacks using

machine learning: A cross-sectional cohort study of the US population

Alexander A Huang[1], Samuel Y Huang[2]

Affiliations expand

- PMID: 37992024
- PMCID: PMC10664888
- DOI: 10.1371/journal.pone.0288903

Free PMC article

Abstract

Background: Asthma attacks are a major cause of morbidity and mortality in vulnerable populations, and identification of associations with asthma attacks is necessary to improve public awareness and the timely delivery of medical interventions.

Objective: The study aimed to identify feature importance of factors associated with asthma in a representative population of US adults.

Methods: A cross-sectional analysis was conducted using a modern, nationally representative cohort, the National Health and Nutrition Examination Surveys (NHANES 2017-2020). All adult patients greater than 18 years of age (total of 7,922 individuals) with information on asthma attacks were included in the study. Univariable regression was used to identify significant nutritional covariates to be included in a machine learning model and feature importance was reported. The acquisition and analysis of the data were authorized by the National Center for Health Statistics Ethics Review Board.

Results: 7,922 patients met the inclusion criteria in this study. The machine learning model had 55 out of a total of 680 features that were found to be significant on univariate analysis ($P<0.0001$ used). In the XGBoost model the model had an Area Under the Receiver Operator Characteristic Curve (AUROC) = 0.737, Sensitivity = 0.960, NPV = 0.967. The top five highest ranked features by gain, a measure of the percentage contribution of the covariate to the overall model prediction, were Octanoic Acid intake as a Saturated Fatty Acid (SFA) (gm) (Gain = 8.8%), Eosinophil percent (Gain = 7.9%), BMXHIP-Hip Circumference (cm) (Gain = 7.2%), BMXHT-standing height (cm) (Gain = 6.2%) and HS C-Reactive Protein (mg/L) (Gain 6.1%).

Conclusion: Machine Learning models can additionally offer feature importance and additional statistics to help identify associations with asthma attacks.

Conflict of interest statement

The authors have declared that no competing interests exist.

- 53 references
- 3 figures

SUPPLEMENTARY INFO

Grants and fundingexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

14

Pediatr Pulmonol

. 2023 Nov 22.

doi: 10.1002/ppul.26764. Online ahead of print.

Healthcare costs and resources utilization in children with difficult-to-control asthma treated with biologic

therapies: A population-based cohort study

Matteo Monzio Compagnoni[1,2], Claudia Conflitti[1,2], Veronica Capuano[3,4], Giulia Bonaiti[4], Matteo Franchi[1,2], Chiara Vimercati[5], Andrea Biondi[3,5], Fabrizio Luppi[3,4], Giovanni Corrao[1,2], Paola Faverio[3,4]

Affiliations expand

- PMID: 37991180

- DOI: 10.1002/ppul.26764

Abstract

Introduction: Asthma is one of the most common diseases in children, with a variable range of severity. In recent years, treatment for severe asthma has been largely improved by the availability of targeted biologic therapies. Nevertheless, studies reporting real-world data and cost-effectiveness analyses are lacking. The aim of this study was to evaluate, on a population-based cohort of children with asthma, the impact of the treatment with biologics on healthcare service utilization and associated costs.

Methods: Data were retrieved from Healthcare Utilization database of Lombardy region (Italy). A cohort of 46 asthmatic children aged 6-11 in treatment with dupilumab, mepolizumab or omalizumab was identified during 2017-2021. We compared healthcare resources use between the year before ("baseline period") and the year after the treatment initiation ("follow-up period"). Average 1-year healthcare costs were also calculated.

Results: Comparing the baseline with the follow-up period, the number of patients with at least one exacerbation-related hospitalization and ER access decreased by 75.0% and 85.7%, respectively. The use of biologic agents, namely omalizumab, mepolizumab and dupilumab, significantly reduced oral corticosteroids (OCS), short-acting β2-agonists and the association inhaled corticosteroids/long-acting β2-agonists use. ER admissions for non-respiratory causes were also significantly reduced, while discontinuation rate was low (6.5%). The overall costs increased, due to the costs of the biologic agents, but the hospital admission-related costs due to respiratory causes reduced significantly.

Conclusions: Our real-world investigation suggests that biologic agents reduced hospital admissions for respiratory causes and use of anti-asthmatic drugs, including OCS. However, long-term healthcare sustainability still needs more in-depth assessments.

Keywords: children; dupilumab; mepolizumab; omalizumab; severe asthma.

- 25 references

SUPPLEMENTARY INFO

Grants and fundingexpand

FULL TEXT LINKS

15

Am J Physiol Lung Cell Mol Physiol

-
-
-

. 2023 Nov 21.

doi: 10.1152/ajplung.00205.2023. Online ahead of print.

Bariatric Surgery Decreases the Capacity of Plasma from Obese Asthmatic Subjects to Augment Airway Epithelial Cell Pro-Inflammatory Cytokine Production

Paola E Peña-Garcia[1], V Amanda Fastiggi[1], Madeleine M Mank[1], Jennifer L Ather[1], Olivia J Garrow[2], Vikas Anathy[3], Anne E Dixon[4], Matthew E Poynter[1]

Affiliations expand

- PMID: 37988602

- DOI: 10.1152/ajplung.00205.2023

Abstract

Obesity is a risk factor asthma. People with asthma and obesity often have poor control and do not respond as well to therapies such as inhaled corticosteroids and long-acting bronchodilators. Weight loss improves asthma control, with a 5-10% loss in body mass necessary and sufficient to lead to clinically relevant improvements. Preclinical studies have demonstrated the pathogenic contribution of adipocytes from obese mice to the augmented production of pro-inflammatory cytokines from airway epithelial cells, and the salutary effects of diet-induced weight loss to decrease these consequences. However, the effects of adipocyte-derived products on airway epithelial function in human obesity remain incompletely understood. We utilized samples collected from a 12-month longitudinal study of subjects with obesity undergoing weight loss (bariatric) surgery including controls without asthma, and people with allergic and non-allergic asthma. Visceral adipose tissue (VAT) samples were collected during bariatric surgery and from recruited normal weight controls without asthma undergoing elective abdominal surgery. Human bronchial epithelial (HBEC3-KT) cells were exposed to plasma or conditioned media from cultured VAT adipocytes with or without agonists. Human bronchial smooth muscle (HBSM) cells were similarly exposed to adipocyte-conditioned media. Pro-inflammatory cytokines were augmented in supernatants from HBEC3-KT cells exposed to plasma as compared to subsequent visits. Whereas exposure to obese adipocyte-conditioned media induced pro-inflammatory responses, there were no differences between groups in both HBEC3-KT and HBSM cells. These data show that bariatric surgery and subsequent weight loss beneficially change the circulating factors that augment human airway epithelial and bronchial smooth muscle cell pro-inflammatory responses.

Keywords: airway epithelium; asthma; bariatric surgery; bronchial smooth muscle; obesity.

Pediatr Pulmonol

. 2023 Nov 21.

doi: 10.1002/ppul.26767. Online ahead of print.

Inhaled nitric oxide in acute bronchiolitis: A systematic review and meta-analysis

Ilari Kuitunen[1,2], Marjo Renko[1,2]

Affiliations expand

- PMID: 37988259

- DOI: 10.1002/ppul.26767

Abstract

Objective: Until date there is lack of effective therapies in acute bronchiolitis in infants. The aim was to analyze inhaled nitric oxide efficacy in acute bronchiolitis.

Design: Systematic review and meta-analysis of randomized controlled trials.

Setting: Pediatric specialized healthcare.

Patients: All infants (age less than 2 years) having acute bronchiolitis, which requires emergency room visit or hospitalization.

Intervention: Inhaled nitric oxide.

Main outcome measures: Need for intensive care unit admission. Secondary outcomes were length of hospital stay and adverse events. Risk ratios (RR) and mean differences with 95% confidence intervals (CI) calculated by random-effects DerSimonian and Laird inverse variance method. Peto Odds ratios were used for rare outcomes. Evidence certainty assessed according to GRADE.

Results: 186 studies were screened and three included for analysis. Two had low risk of bias and one had some concerns. Three studies (166 infants) analyzed length of hospital

stay and the duration was -11.3 h (CI: -26.8 to +4.2 h) shorter in the nitric oxide group. Evidence certainty was ranked as low. Overall adverse event rates were similar (3 studies, 166 infants, RR: 0.94, CI: 0.70-1.26), but treatment related harms were more common in nitric oxide group (2 studies, 98 infants, OR: 3.86, CI: 1.04-14.40). Evidence certainty in both was rated as low.

Conclusions: Low certainty evidence suggests that inhaled nitric oxide does not reduce length of hospital stay but may have higher rate of treatment associated harms. Future studies with larger sample sizes are needed to better estimate both the efficacy and adverse events.

Keywords: acute bronchiolitis; asthma and early wheeze; evidence-based medicine and outcomes.

- 21 references

SUPPLEMENTARY INFO

Grants and fundingexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

17

Occup Environ Med

-
-
-

. 2023 Nov 23;80(12):702-705.

doi: 10.1136/oemed-2022-108682.

Effect of cold winters on the risk of new asthma: a case-crossover study in Finland

Abate Bekele Belachew[1,2], Aino K Rantala[1], Maritta S Jaakkola[1], Timo T Hugg[1], Reija Ruuhela[3], Jaakko Kukkonen[3,4], Jouni J K Jaakkola[5,3]

Affiliations expand

- PMID: 37875370

- DOI: 10.1136/oemed-2022-108682

Free article

Abstract

Background: Cold weather increases respiratory symptoms and provokes exacerbations of asthma, but there are no previous studies on its role in the aetiology of asthma.

Objective: We tested the hypothesis that a cold winter increases the risk of developing asthma during the following 1 to 2 years.

Methods: We conducted a case-crossover study of 315 newly diagnosed cases of asthma from the population-based Espoo Cohort Study from birth to the age of 27 years. The hazard period constituted 3 winter months preceding the onset of asthma and bidirectional reference periods of 1 year before hazard period and 1 year after onset of asthma. Exposure constituted average ambient temperature during the winter months of December, January and February. The outcome of interest was new doctor-diagnosed asthma. The measure of effect was OR of asthma estimated by conditional logistic regression analysis.

Results: The average winter temperature for the study period from winter 1983 to 2010 was -4.4°C (range -10.7 to 0.4). A 1°C decrease in the average winter temperature predicted a 7% increase in the risk of new asthma (OR=1.07, 95% CI 1.02 to 1.13). A cold winter with an average temperature below the climate normal value (-4.5°C; period 1981-2010) increased the risk of new asthma by 41% during the following year (OR: 1.41; 95% CI 1.04 to 1.90).

Conclusions: This case-crossover study provides original evidence that a cold winter with below normal average temperatures increases the risk of developing new asthma during the following 1 to 2 years.

Keywords: Allergy and Immunology; Asthma; Climate; Epidemiology; Public health.

Conflict of interest statement

Competing interests: None declared.

Ann Allergy Asthma Immunol

. 2023 Nov 23:S1081-1206(23)01462-X.

doi: 10.1016/j.anai.2023.11.014. Online ahead of print.

Air pollutants contribute to epithelial barrier dysfunction and allergic diseases

Byung Eui Kim[1], Jessica W Hui-Beckman[1], Michael Zev Nevid[1], Elena Goleva[1], Donald Y M Leung[2]

Affiliations expand

- PMID: 38006973

- DOI: 10.1016/j.anai.2023.11.014

Abstract

Air pollution is a global problem associated with various health conditions, resulting in elevated rates of morbidity and mortality. Major sources of air pollutants include industrial emissions, traffic-related pollutants, and household biomass combustion, as well as indoor pollutants from chemicals and tobacco. Various types of air pollutants originate from both human activities and natural sources. This includes particulate matter (PM), pollen, greenhouse gases, and other harmful gases. Air pollution is linked to allergic diseases, including atopic dermatitis (AD), allergic rhinitis, allergic conjunctivitis, food allergy, and bronchial asthma. These pollutants lead to epithelial barrier dysfunction, dysbiosis, and immune dysregulation. Additionally, climate change and global warming may contribute to the exacerbation and the development of allergic diseases related to air pollutants. Epigenetic changes associated with air pollutants have also been connected to the onset of allergic diseases. Furthermore, these changes can be passed down through subsequent generations, resulting in a higher prevalence of allergic diseases in offspring. Modulation of the aryl hydrocarbon receptor (AHR) could be a valuable strategy for alleviating air pollutant-induced epidermal barrier dysfunction and AD. A more effective approach to preventing allergic diseases triggered by air pollutants is to reduce exposure to them. Implementing public policies aimed at safeguarding individuals from air pollutant exposure may prove to be the most efficient solution. A pressing need exists for global policy initiatives that prioritize efforts to reduce the production of air pollutants.

Keywords: Air pollutants; Allergic rhinitis; Allergy; Asthma; Atopic dermatitis; Climate change; Greenhouse gas; Particulate matter; Pollen; epithelial barrier.

Conflict of interest statement

Declaration of Competing Interest The authors declare no conflict of interest

2

J Pediatr Nurs

. 2023 Nov 22:S0882-5963(23)00315-9.

doi: 10.1016/j.pedn.2023.10.038. Online ahead of print.

The effect of home environment modification nursing intervention on symptom control, quality of life, and number of triggers in children with allergic rhinitis: A randomized controlled trial

Muradiye Aldem Budak[1], Emine Geckil[2]

Affiliations expand

- PMID: 37996355

- DOI: 10.1016/j.pedn.2023.10.038

Abstract

Purpose: The study was conducted to investigate the effects of a nursing intervention aimed at home environment modification on symptom control, quality of life, and the number of triggers in children with allergic rhinitis.

Design and methods: This one-to-one, parallel-arm, randomized controlled trial was conducted with a pre-test/post-test design. The study used stratified sampling method. A total of 52 participants were randomly assigned to the intervention group (n = 26) and the control group (n = 26). The intervention group received education on home environment

modification and the child was provided with anti-allergic bedding set. The control group continued with routine practices. Statistical significance was set at $p < 0.05$.

Results: After the nursing intervention for home environment modification, a significant difference was found between the groups in terms of the number of home environment triggers ($p < 0.05$). According to the mean scores of the Pediatric Rhinoconjunctivitis Quality of Life Questionnaire, no significant difference was found between the groups ($p > 0.05$). There was no significant difference between the groups in terms of the mean scores for nasal discharge, nasal congestion, sneezing, nasal itching, and eye itching ($p > 0.05$) after the nursing intervention for home environment modification.

Conclusion: The findings indicate that the nursing intervention for home environment modification is an effective method in reducing the number of triggers in the home environment. However, no significant impact was observed on symptom control and quality of life.

Practical implications: Awareness can be increased by educating children with allergic rhinitis and their families about triggers in the home environment.

Keywords: Allergic rhinitis; Child; Home environment modification; Nursing; Quality of life; Symptom control.

Conflict of interest statement

Declaration of Competing Interest The author(s) declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

. 2023 Nov 21:S2213-2198(23)01296-5.

doi: 10.1016/j.jaip.2023.11.027. Online ahead of print.

Mechanisms and predictive biomarkers of allergen immunotherapy in the clinic

Janice A Layhadi[1], Anastasia Lalioti[1], Elizabeth Palmer[1], Menno C van Zelm[2], Erik Wambre[3], Mohamed H Shamji[4]

Affiliations expand

- PMID: 37996041

- DOI: 10.1016/j.jaip.2023.11.027

Abstract

Allergen-specific immunotherapy (AIT) remains the only disease-modifying treatment for IgE-mediated allergic diseases such as allergic rhinitis (AR). It can provide long-term clinical benefits when given for three years or longer. Mechanisms of immune tolerance induction by AIT are underscored by the modulation of several compartments within the immune system. These include repair of disruption in epithelial barrier integrity, modulation of the innate immune compartment that includes regulatory dendritic cells (DCreg) and innate lymphoid cells (ILCreg), and adaptive immune compartments such as induction of regulatory T and B cells. Altogether, these are also associated with dampening allergen-specific Th2 (Th2A) and T follicular helper cell responses and subsequent generation of blocking antibodies. Whilst AIT is effective in modifying the immune response, there is a lack of validated and clinically relevant biomarkers that can be used to monitor desensitization, efficacy, and the likelihood of response, all of which can contribute to accelerating personalized medication and increasing patient care. Candidate biomarkers comprise humoral, cellular, metabolic and in vivo biomarkers; however, these are primarily studied in small trials and require further validation. In this review, we evaluate the current candidates of biomarkers of AIT and how we can implement changes in future studies to help us identify clinically relevant biomarkers of safety, compliance and efficacy.

Keywords: Allergen immunotherapy; allergic rhinitis; biomarkers; epithelial barrier; immune tolerance; innate lymphoid cells; personalized medicine; regulatory B cells; regulatory T cells.

Review

Laryngoscope

. 2023 Nov 22.

doi: 10.1002/lary.31163. Online ahead of print.

Effectiveness of the Posterior Nasal Nerve Cryoablation in Allergic and Non-Allergic Rhinitis

Do Hyun Kim[1], Yun Jin Kang[2], Soo Whan Kim[1], Sung Won Kim[1], Mohammed Abdullah Basurrah[3], Se Hwan Hwang[4]

Affiliations expand

- PMID: 37991147

- DOI: 10.1002/lary.31163

Abstract

Objectives: This study assessed the impact of cryoablation of the posterior nasal nerve on symptoms of rhinitis in individuals with allergic rhinitis (AR) and non-allergic rhinitis (NAR).

Data sources: PubMed, SCOPUS, Embase, Web of Science, and Cochrane databases for studies published up to June 2023.

Review methods: Studies that evaluated the quality of life and rhinitis-related symptom scores before and after cryotherapy treatment, as well as sham-controlled studies, were included.

Results: In total, 368 patients from seven studies were analyzed. Patients who underwent cryoablation showed a significant improvement in rhinitis-related symptoms in both NAR and AR. In particular, the most significant improvement was observed in symptoms of rhinorrhea and congestion. Furthermore, cryoablation improved the disease-specific quality of life evaluated using the Rhinoconjunctivitis Quality of Life Questionnaire. The rate of clinical improvement in the total nasal symptom score (total nasal symptom score [TNSS]; >30% reduction from baseline) after cryotherapy was 74%. The change in TNSS score significantly increased over time in NAR patients ($p = 0.0041$). Therefore, changes in the TNSS score after 12 months of cryotherapy treatment were greater in the NAR group than in the AR group ($p = 0.0020$), indicating that cryoablation is effective for both types of rhinitis and has better long-term efficacy in NAR than in AR.

Conclusions: Subjective symptom scores related to rhinitis, particularly for rhinorrhea and congestion, decrease after cryoablation of the posterior nasal nerve. Furthermore, the symptom improvement was greater in NAR than AR. Laryngoscope, 2023.

Keywords: cryotherapy; meta-analysis; nose; quality of life; rhinitis.

- 26 references

SUPPLEMENTARY INFO

Publication types, Grants and fundingexpand

FULL TEXT LINKS

WILEY Full Text Article UNIMORE

Proceed to details

Cite

Share

5

Allergy

-
-

. 2023 Nov 21.

doi: 10.1111/all.15952. Online ahead of print.

Efficacy and safety of abrocitinib in patients with moderate-to-severe atopic dermatitis and comorbid allergies

Peter Schmid-Grendelmeier[1], Melinda J Gooderham[2], Karin Hartmann[3,4], George N Konstantinou[5], Marc Fellmann[6], Christopher Koulias[7], Claire Clibborn[8], Pinaki Biswas[9], Patrick M Brunner[10]

Affiliations expand

- PMID: 37988255

- DOI: 10.1111/all.15952

Abstract

Background: Abrocitinib efficacy by comorbidity status in patients with moderate-to-severe atopic dermatitis (AD) has not been previously assessed. This post hoc analysis evaluated the efficacy and safety of abrocitinib in patients with AD and allergic comorbidities.

Methods: Data were pooled from patients who received abrocitinib 200 mg, 100 mg, or placebo in phase 2b (NCT02780167) and phase 3 (NCT03349060, NCT03575871) monotherapy trials. Patients with and without allergic comorbidities (allergic asthma, rhinitis, conjunctivitis, or food allergy) were evaluated for Investigator's Global Assessment (IGA) response (clear [0] or almost clear [1]), ≥75% improvement in the Eczema Area and Severity Index (EASI-75), ≥4-point improvement in Peak Pruritus Numerical Rating Scale (PP-NRS4), and Dermatology Life Quality Index (DLQI) response (<2 with baseline score ≥2). Other outcomes were Patient-Oriented Eczema Measure (POEM), SCORing Atopic Dermatitis (SCORAD), Pruritus and Symptoms Assessment for Atopic Dermatitis (PSAAD), and treatment-emergent adverse events (TEAEs).

Results: Of 942 patients, 498 (53%) reported at least one allergic comorbidity (asthma only, 33%; conjunctivitis only or rhinitis only or both, 17%; food allergies only, 15%; >1 allergic comorbidity, 34%). Regardless of comorbidity status, from Week 2 to Week 12,

higher percentages of patients treated with either abrocitinib dose achieved IGA 0/1, EASI-75, PP-NRS4, or DLQI 0/1 versus placebo-treated patients. Changes from baseline in POEM, SCORAD, and PSAAD were greater with abrocitinib than with placebo in patients with and without allergic comorbidities. Most TEAEs were mild or moderate.

Conclusions: Efficacy and safety data support abrocitinib use to manage AD in patients with or without allergic comorbidities.

Keywords: abrocitinib; asthma; atopic dermatitis; food allergy; rhinitis.

- 38 references

SUPPLEMENTARY INFO

Grants and fundingexpand

FULL TEXT LINKS

Chronic cough

1
Clin Exp Allergy

-
-
-

. 2023 Nov 23.

doi: 10.1111/cea.14416. Online ahead of print.

Phenotypes of cough in children: A latent class analysis

Maria Christina Mallet[1,2], Eva S L Pedersen[1], Ronny Makhoul[1,2], Sylvain Blanchon[3], Karin Hoyler[4], Anja Jochmann[5], Philipp Latzin[6], Alexander Moeller[7], Nicolas Regamey[8], Myrofora Goutaki[1,6], Ben D Spycher[1], Claudia E Kuehni[1,6]; SPAC Study Team

Affiliations expand

- PMID: 37997173

- DOI: 10.1111/cea.14416

Abstract

Introduction: Distinguishing phenotypes among children with cough helps understand underlying causes. Using a statistical data-driven approach, we aimed to identify and validate cough phenotypes based on measurable traits, physician diagnoses, and prognosis.

Methods: We used data from the Swiss Paediatric Airway Cohort and included 531 children aged 5-16 years seen in outpatient clinics since 2017. We included children with any parent-reported cough (i.e. cough without a cold, cough at night, cough more than other children, or cough longer than 4 weeks) without current wheeze. We applied latent class analysis to identify phenotypes using nine symptoms and characteristics and selected the best model using the Akaike information criterion. We assigned children to the most likely phenotype and compared the resulting groups for parental atopy history, comorbidities, spirometry, fractional exhaled nitric oxide (FeNO), skin prick tests and specific IgE, physician diagnoses, and 1-year prognosis.

Results: We identified four cough phenotypes: non-specific cough (26%); non-allergic infectious and night cough with snoring and otitis (4%); chronic allergic dry night cough with snoring (9%); and allergic non-infectious cough with rhino-conjunctivitis (61%). Children with the allergic phenotype often had family or personal history of atopy and asthma diagnosis. FeNO was highest for the allergic phenotype [median 17.9 parts per billion (ppb)] and lowest for the non-allergic infectious phenotype [median 7.0 parts per billion (ppb)]. Positive allergy test results differed across phenotypes ($p < .001$) and were most common among the allergic (70%) and least common among the non-specific cough (31%) phenotypes. Subsequent wheeze was more common among the allergic than the non-specific phenotype.

Conclusion: We identified four clinically relevant cough phenotypes with different prognoses. Although we excluded children with current wheeze, most children with cough belonged to allergy-related phenotypes.

Keywords: allergy; childhood; clinical phenotypes; cough; latent class analysis.

- 39 references

SUPPLEMENTARY INFO

Grants and fundingexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

2

Curr Med Res Opin

-
-
-

. 2023 Nov 23:1-18.

doi: 10.1080/03007995.2023.2284371. Online ahead of print.

A real world study of cough burden and quality of life of UK patients who have undergone evaluation for chronic cough

Lorcan P McGarvey[1], Gavin Harper[2], Mark Silvey[2], Haya Langerman[3]

Affiliations expand

- PMID: 37994434

- DOI: 10.1080/03007995.2023.2284371

Abstract

Objective: Treatment options for adults with chronic cough (CC) are limited. This study reports on the health status and experiences of patients with recent healthcare evaluation for CC.

Methods: This prospective, UK, cross-sectional study surveyed adults with a CC evaluation within the previous 12 months. All were never smokers (or ex-smokers for ≥12 months). Subjects completed five validated patient-reported outcome measures: cough visual analogue scale (VAS), EuroQoL 5 dimension, 5 level (EQ-5D-5L), EQ-5D VAS, Leicester Cough Questionnaire (LCQ), and Work Productivity and Activity Impairment (WPAI) questionnaire.

Results: A total of 101 participants were recruited: 71% were female, mean age was 54.9 ± 15.2 years. Median (IQR) CC duration was 36 (11, 120) months. Mean self-reported CC severity (Cough-VAS) was 51.3 ± 22.9 over previous 2 weeks, and 62.9 ± 23.7 on worst day of coughing. EQ-5D values were lower for CC patients than population norms. Subanalyses revealed that EQ-5D and LCQ scores were significantly impacted by CC duration and number of healthcare providers (HCPs) visited. WPAI analysis showed a 27.6% work time impairment because of participants' CC. The number of HCP attendances ranged from 1-10 (3.3 ± 2.8) before diagnosis was confirmed. Treatment was being prescribed to 87% of participants and comprised mainly steroids (nasal [19%] and inhaled [25%]), beta agonists (24%), and proton pump inhibitors (21%); 44% of patients were dissatisfied with treatment efficacy.

Conclusion: Real-world data from a nationally representative UK population show significant unmet needs associated with CC, including multiple healthcare visits and limited treatment effectiveness, resulting in inadequate cough control and impaired health status.

Keywords: Chronic cough; patient-reported outcomes; quality of life; real-world data.

. 2023 Dec;201(6):499-509.

doi: 10.1007/s00408-023-00659-x. Epub 2023 Nov 21.

Illuminating Airway Nerve Structure and Function in Chronic Cough

James Kornfield[#1], Ubaldo De La Torre[#1], Emily Mize[1], Matthew G Drake[2]

Affiliations expand

- PMID: 37985513

- PMCID: PMC10673771

- DOI: 10.1007/s00408-023-00659-x

Free PMC article

Abstract

Airway nerves regulate vital airway functions including bronchoconstriction, cough, and control of respiration. Dysregulation of airway nerves underlies the development and manifestations of airway diseases such as chronic cough, where sensitization of neural pathways leads to excessive cough triggering. Nerves are heterogeneous in both expression and function. Recent advances in confocal imaging and in targeted genetic manipulation of airway nerves have expanded our ability to visualize neural organization, study neuro-immune interactions, and selectively modulate nerve activation. As a result, we have an unprecedented ability to quantitatively assess neural remodeling and its role in the development of airway disease. This review highlights our existing understanding of neural heterogeneity and how advances in methodology have illuminated airway nerve morphology and function in health and disease.

Keywords: Asthma; Chronic cough; Confocal microscopy; Optogenetics; Parasympathetic nerve; Sensory nerve.

Conflict of interest statement

Dr. Drake has received honorarium from Merck, Bellus, Astra Zeneca, and Chiesi.

- 128 references
- 1 figure

SUPPLEMENTARY INFO

Publication types, Grants and fundingexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

4

Med J Aust

. 2023 Nov 19.

doi: 10.5694/mja2.52157. Online ahead of print.

Cough in Children and Adults: Diagnosis, Assessment and Management (CICADA). Summary of an updated position statement on chronic cough in Australia

Julie M Marchant[1,2], Anne B Chang[1,2,3], Emma Kennedy[4], David King[5], Jennifer L Perret[6], Andre Schultz[7,8], Maree R Toombs[9], Lesley Versteegh[3], Shyamali C Dharmage[6], Rebecca Dingle[10], Naomi Fitzerlakey[10], Johnson George[11], Anne Holland[12,13,14], Debbie Rigby[5,15], Jennifer Mann[14,16], Stuart

Mazzone[17], Mearon OBrien[10], Kerry-Ann O'Grady[1], Helen L Petsky[18], Jonathan Pham[12], Sheree Ms Smith[19], Danielle F Wurze[20], Anne E Vertigan[21,22], Peter Wark[21,22]

Affiliations expand

- PMID: 37982357

- DOI: 10.5694/mja2.52157

Abstract

Introduction: Cough is the most common symptom leading to medical consultation. Chronic cough results in significant health care costs, impairs quality of life, and may indicate the presence of a serious underlying condition. Here, we present a summary of an updated position statement on cough management in the clinical consultation.

Main recommendations: Assessment of children and adults requires a focused history of chronic cough to identify any red flag cough pointers that may indicate an underlying disease. Further assessment with examination should include a chest x-ray and spirometry (when age > 6 years). Separate paediatric and adult diagnostic management algorithms should be followed. Management of the underlying condition(s) should follow specific disease guidelines, as well as address adverse environmental exposures and patient/carer concerns. First Nations adults and children should be considered a high risk group. The full statement from the Thoracic Society of Australia and New Zealand and Lung Foundation Australia for managing chronic cough is available at https://lungfoundation.com.au/resources/cicada-full-position-statement.

Changes in management as a result of this statement: Algorithms for assessment and diagnosis of adult and paediatric chronic cough are recommended. High quality evidence supports the use of child-specific chronic cough management algorithms to improve clinical outcomes, but none exist in adults. Red flags that indicate serious underlying conditions requiring investigation or referral should be identified. Early and effective treatment of chronic wet/productive cough in children is critical. Culturally specific strategies for facilitating the management of chronic cough in First Nations populations should be adopted. If the chronic cough does not resolve or is unexplained, the patient should be referred to a respiratory specialist or cough clinic.

Keywords: Evidence-based medicine; General practice; Guidelines as topic; Pediatrics.

- 76 references

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

1
Review

Crit Rev Microbiol

. 2023 Nov 24:1-16.

doi: 10.1080/1040841X.2023.2285995. Online ahead of print.

Emerging strategies to target virulence in *Pseudomonas aeruginosa* respiratory infections

Tegan M Hibbert[1], Marvin Whiteley[2], Stephen A Renshaw[3], Daniel R Neill[4], Joanne L Fothergill[1]

Affiliations expand

- PMID: 37999716

- DOI: 10.1080/1040841X.2023.2285995

Abstract

Pseudomonas aeruginosa is an opportunistic pathogen that is responsible for infections in people living with chronic respiratory conditions, such as cystic fibrosis (CF) and non-CF bronchiectasis (NCFB). Traditionally, in people with chronic respiratory disorders, *P. aeruginosa* infection has been managed with a combination of inhaled and intravenous antibiotic therapies. However, due in part to the prolonged use of antibiotics in these people, the emergence of multi-drug resistant *P. aeruginosa* strains is a growing concern.

The development of anti-virulence therapeutics may provide a new means of treating *P. aeruginosa* lung infections whilst also combatting the AMR crisis, as these agents are presumed to exert reduced pressure for the emergence of drug resistance as compared to antibiotics. However, the pipeline for developing anti-virulence therapeutics is poorly defined, and it is currently unclear as to whether *in vivo* and *in vitro* models effectively replicate the complex pulmonary environment sufficiently to enable development and testing of such therapies for future clinical use. Here, we discuss potential targets for *P. aeruginosa* anti-virulence therapeutics and the effectiveness of the current models used to study them. Focus is given to the difficulty of replicating the virulence gene expression patterns of *P. aeruginosa* in the CF and NCFB lung under laboratory conditions and to the challenges this poses for anti-virulence therapeutic development.

Keywords: Anti-virulence therapeutics; Pseudomonas aeruginosa; cystic fibrosis; non-cystic fibrosis bronchiectasis.

2

BMJ Open Respir Res

. 2023 Nov 22;10(1):e001588.

doi: 10.1136/bmjresp-2022-001588.

Survey-identified experiences of prediagnosis and diagnosis process among patients with COPD, asthma,

interstitial lung disease and bronchiectasis

Xiubin Zhang[1], Andrew Ellis[2], Jennifer K Quint[3], Alex Bottle[1]

Affiliations expand

- PMID: 37993278
- PMCID: PMC10668245
- DOI: 10.1136/bmjresp-2022-001588

Free PMC article

Abstract

Introduction: Diagnosis of asthma, chronic obstructive pulmonary disease (COPD), bronchiectasis and interstitial lung disease (ILD) can be convoluted, and limited data exist on understanding the experience of diagnosis from a patient perspective.

Aim: To investigate a patient's 'route to diagnosis', particularly focusing on the time prior to seeking healthcare, and perceived experiences of the diagnostic pathway.

Methods: An online survey was distributed via the UK Taskforce for Lung Health and member mailing lists to patients as well as the website and social media accounts from 23 May 2022 to 5 July 2022. Analysis was descriptive; χ^2 tests were performed to make comparisons across diseases.

Results: There were 398 valid responses (COPD=156, asthma=119, ILD=67 and bronchiectasis=56). While only 9.2% of respondents who were eventually diagnosed with asthma had not heard of their disease, the corresponding percentages for COPD, ILD and bronchiectasis were 34.0%, 74.6% and 69.6%, respectively. 33.9% of people with bronchiectasis believed their delayed diagnosis was due to the health professionals' lack of expertise or knowledge-24.4% for asthma, 19.2% for COPD and 17.9% for ILD.People with COPD were more likely (37.2%) and patients with asthma less likely (10.9%) to report they did not know the signs of potential lung disease ($p<0.001$). People with COPD were more likely to report that they did not appreciate the severity or urgency of the situation (58.3%) than people with asthma (32.8%), ILD (43.3%) or bronchiectasis (28.6%, $p<0.001$). The proportion of patients reporting that they were being initially treated for another lung

condition was higher in people with bronchiectasis (44.6%) and lower in people with asthma (8.4%, p<0.001).

Conclusions: Perceived reasons for diagnostic delay can help health professionals promote early diagnosis and management. Patients' limited knowledge of respiratory diseases also played a factor, indicating the necessity to promote patients' knowledge to encourage earlier help seeking.

Keywords: COPD; asthma; bronchiectasis; diagnosis; interstitial lung disease; online survey.

Conflict of interest statement

Competing interests: None declared.

- 17 references

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

3

BMC Pulm Med

-
-
-

. 2023 Nov 20;23(1):451.

doi: 10.1186/s12890-023-02768-y.

A case-control study on the risk factors associated with the occurrence of non-

tuberculous mycobacteria pulmonary disease in bronchiectasis patients

Yinping Feng[1], Jing Guo[1], Shuirong Luo[1], Zunjing Zhang[#2]

Affiliations expand

- PMID: 37986162
- PMCID: PMC10662920
- DOI: 10.1186/s12890-023-02768-y

Free PMC article

Abstract

Objective: The objective of this study is to analyze the risk factors associated with bronchiectasis combined with non-tuberculous mycobacteria pulmonary disease(NTM-PD) and provide a basis for more effective prevention and treatment strategies.

Methods: The study subjects for this manuscript were patients with bronchiectasis who were admitted to the infection department between January 2021 and June 2023.There were 34 patients with NTM-PD in the observation group, and 52 patients with simple bronchiectasis in the control group. Basic information, imaging features, serum albumin levels, and infection indicators were collected from both groups of patients.Univariate and multivariate logistic regression analysis were performed to analyze the risk factors for NTM-PD in patients with bronchiectasis.

Results: Multivariate logistic regression analysis revealed that bronchiectasis exacerbation occurring at least twice a year(OR = 3.884, 95% CI: 1.200-12.568), involvement of three or more lung lobes with bronchiectasis (OR = 3.932, 95% CI: 1.208-12.800), hypoalbuminemia (OR = 3.221, 95% CI: 1.015-10.219), and the NLR index (OR = 1.595, 95% CI: 1.200-2.119) were significant risk factors for non-tuberculous mycobacteria pulmonary disease in individuals with bronchiectasis ($P < 0.05$).

Conclusion: Patients with bronchiectasis accompanied by NTM-PD present specific risk factors that should be promptly addressed through prevention and treatment.

Keywords: Bronchiectasis; Non-tuberculous mycobacteria; Risk factors.

Conflict of interest statement

The authors declare no competing interests.

- 24 references
- 1 figure

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS