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

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Thorax

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. 2023 Jun 2;thoraxjnl-2022-219158.

doi: 10.1136/thorax-2022-219158. Online ahead of print.

Pulmonary emphysema subtypes defined by unsupervised machine learning on CT scans

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Affiliations expand

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Abstract

Background: Treatment and preventative advances for chronic obstructive pulmonary disease (COPD) have been slow due, in part, to limited subphenotypes. We tested if unsupervised machine learning on CT images would discover CT emphysema subtypes with distinct characteristics, prognoses and genetic associations.

Methods: New CT emphysema subtypes were identified by unsupervised machine learning on only the texture and location of emphysematous regions on CT scans from 2853 participants in the Subpopulations and Intermediate Outcome Measures in COPD Study (SPIROMICS), a COPD case-control study, followed by data reduction. Subtypes were compared with symptoms and physiology among 2949 participants in the population-based Multi-Ethnic Study of Atherosclerosis (MESA) Lung Study and with prognosis among 6658 MESA participants. Associations with genome-wide single-nucleotide-polymorphisms were examined.

Results: The algorithm discovered six reproducible (interlearner intraclass correlation coefficient, 0.91–1.00) CT emphysema subtypes. The most common subtype in SPIROMICS, the combined bronchitis-apical subtype, was associated with chronic bronchitis, accelerated lung function decline, hospitalisations, deaths, incident airflow limitation and a gene variant near *DRD1*, which is implicated in mucin hypersecretion ($p=1.1 \times 10^{-8}$). The second, the diffuse subtype was associated with lower weight, respiratory hospitalisations and deaths, and incident airflow limitation. The third was associated with age only. The fourth and fifth visually resembled combined pulmonary fibrosis emphysema and had distinct symptoms, physiology, prognosis and genetic associations. The sixth visually resembled vanishing lung syndrome.

Conclusion: Large-scale unsupervised machine learning on CT scans defined six reproducible, familiar CT emphysema subtypes that suggest paths to specific diagnosis and personalised therapies in COPD and pre-COPD.

Keywords: COPD epidemiology; Emphysema; Imaging/CT MRI etc.

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Conflict of interest statement

Competing interests: EDA, PPB, AM, YS, WS, JHMA, MHC, DC, EH, DRJ, SK, JDK, TL, JL, ECO, WP, MRP, SSR, EKS, KEW and AFL reports receiving grants from the National Institutes of Health (NIH). JY performed the work at Columbia University but is now an employee of

Google. EAH reports receiving grants from the NIH; being a founder and shareholder of VIDA Diagnostics; and holding patents for an apparatus for analysing CT images to determine the presence of pulmonary tissue pathology, an apparatus for image display and analysis, and a method for multiscale meshing of branching biological structures. EBA reports receiving grants from the American Heart Association and the NIH. CBC reports receiving personal fees from GlaxoSmithKline. MTD reports receiving a grant from the NHLBI and personal fees from AstraZeneca, GlaxoSmithKline, Pulmonx, PneumRx/BTG and Quark. MKH reports consulting for GlaxoSmithKline, AstraZeneca and Boehringer Ingelheim receiving research support from Novartis and Sunovion. NNH reports receiving grants from the NIH, Boehringer Ingelheim, and the COPD Foundation. JDK reports receiving grants from US Environmental Protection Agency and the NIH. FJM reports serving on COPD advisory boards for AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Sunovion and Teva; serving as a consultant for ProterixBio and Verona; serving on the steering committees of studies sponsored by the NHLBI, AstraZeneca, and GlaxoSmithKline; having served on data safety and monitoring boards of COPD studies supported by Genentech and GlaxoSmithKline. BMS reports receiving grants from the NIH, Canadian Institutes of Health Research (CIHR), Fonds de la recherche en santé du Québec (FRQS), the Research Institute of the McGill University Health Centre, the Quebec Lung Association and AstraZeneca. PGW reports receiving personal fees for consultancy from Theravance, AstraZeneca, Regeneron, Sanofi, Genentech, Roche and Janssen. RGB reports receiving grants from the COPD Foundation, the US Environmental Protection Agency (EPA), the American Lung Association and the NIH.

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Chronic Obstr Pulm Dis

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. 2023 Jun 2.

doi: 10.15326/jcopdf.2023.0410. Online ahead of print.

Decreased Cardiac Autonomic Function is Associated with Higher Exacerbation

Risk and Symptom Burden in Chronic Obstructive Pulmonary Disease

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Free article

Abstract

Current measures of COPD severity, including lung function, do not fully explain symptom burden, and there is a need to identify predictors of exacerbation risk and morbidity. Autonomic dysfunction may be implicated in both cardiovascular and respiratory morbidity in COPD and convey risk for exacerbations. Heart Rate Variability(HRV) is a marker of cardiac autonomic function that is predictive of cardiovascular health and has promise as a non-invasive COPD biomarker. The CLEAN AIR Heart study provided opportunity to investigate the association between HRV and COPD morbidity among former smokers with moderate-severe COPD. Eighty-five participants, contributing 305 HRV measurements, underwent repeated clinical assessments over 4 study periods that included 24-Holter monitoring assessment of HRV. HRV measures of interests were SDNN(overall HRV) and RMSSD(parasympathetic function). Exacerbation risk was assessed using negative binomial models, and mixed effects models analyzed associations between HRV and symptoms. Decreases in SDNN(incidence rate ratio[IRR] 1.40; 95%CI 1.13-1.74) and RMSSD(IRR 1.60; 95%CI 1.07-2.37) were associated with severe exacerbation risk. Decreases in SDNN were associated with higher SGRQ, CAT scores and chronic bronchitis symptoms. Findings demonstrate that HRV is associated with COPD symptom burden and exacerbation risk. HRV may represent an important biomarker with the potential to identify high-risk COPD populations.

Keywords: COPD morbidity; comorbidity; exacerbations.

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BMC Pulm Med

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. 2023 Jun 2;23(1):191.

doi: 10.1186/s12890-022-02255-w.

[Deep learning diagnostic and severity-stratification for interstitial lung diseases and chronic obstructive pulmonary disease in digital lung auscultations and ultrasonography: clinical protocol for an observational case-control study](#)

[Johan N Siebert](#)^{#1,2}, [Mary-Anne Hartley](#)^{#3}, [Delphine S Courvoisier](#)^{4,5}, [Marlène Salamin](#)⁶, [Laura Robotham](#)⁶, [Jonathan Doenz](#)³, [Constance Barazzone-Argiroffo](#)^{7,5}, [Alain Gervais](#)^{8,5}, [Pierre-Olivier Bridevaux](#)⁶

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- PMID: 37264374
- PMCID: [PMC10234685](#)

- DOI: [10.1186/s12890-022-02255-w](https://doi.org/10.1186/s12890-022-02255-w)

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Abstract

Background: Interstitial lung diseases (ILD), such as idiopathic pulmonary fibrosis (IPF) and non-specific interstitial pneumonia (NSIP), and chronic obstructive pulmonary disease (COPD) are severe, progressive pulmonary disorders with a poor prognosis. Prompt and accurate diagnosis is important to enable patients to receive appropriate care at the earliest possible stage to delay disease progression and prolong survival. Artificial intelligence-assisted lung auscultation and ultrasound (LUS) could constitute an alternative to conventional, subjective, operator-related methods for the accurate and earlier diagnosis of these diseases. This protocol describes the standardised collection of digitally-acquired lung sounds and LUS images of adult outpatients with IPF, NSIP or COPD and a deep learning diagnostic and severity-stratification approach.

Methods: A total of 120 consecutive patients (≥ 18 years) meeting international criteria for IPF, NSIP or COPD and 40 age-matched controls will be recruited in a Swiss pulmonology outpatient clinic, starting from August 2022. At inclusion, demographic and clinical data will be collected. Lung auscultation will be recorded with a digital stethoscope at 10 thoracic sites in each patient and LUS images using a standard point-of-care device will be acquired at the same sites. A deep learning algorithm (DeepBreath) using convolutional neural networks, long short-term memory models, and transformer architectures will be trained on these audio recordings and LUS images to derive an automated diagnostic tool. The primary outcome is the diagnosis of ILD versus control subjects or COPD. Secondary outcomes are the clinical, functional and radiological characteristics of IPF, NSIP and COPD diagnosis. Quality of life will be measured with dedicated questionnaires. Based on previous work to distinguish normal and pathological lung sounds, we estimate to achieve convergence with an area under the receiver operating characteristic curve of $> 80\%$ using 40 patients in each category, yielding a sample size calculation of 80 ILD (40 IPF, 40 NSIP), 40 COPD, and 40 controls.

Discussion: This approach has a broad potential to better guide care management by exploring the synergistic value of several point-of-care-tests for the automated detection and differential diagnosis of ILD and COPD and to estimate severity. Trial registration Registration: August 8, 2022.

Clinicaltrials: gov Identifier: [NCT05318599](https://clinicaltrials.gov/ct2/show/study/NCT05318599).

Keywords: Artificial intelligence; Auscultation; Deep learning; Idiopathic interstitial pneumonias; Idiopathic pulmonary fibrosis; Lung diseases, Interstitial; Pulmonary disease, Chronic obstructive; Respiratory sounds; Ultrasonography.

Conflict of interest statement

AG intend to develop a smart stethoscope 'Onescope', which may be commercialised. All other authors declare that they have no competing interests.

- [85 references](#)
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BMJ Open Respir Res

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. 2023 Jun;10(1):e001585.

doi: 10.1136/bmjresp-2022-001585.

[Use and persistence of single and multiple inhaler triple therapy prescribed for patients with COPD in France: a retrospective study on THIN database \(OPTI study\)](#)

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- PMID: 37263738

- DOI: [10.1136/bmjresp-2022-001585](https://doi.org/10.1136/bmjresp-2022-001585)

Free article

Abstract

Introduction: From 2018 single inhaler triple therapy (SITT) became available in France to treat moderate-to-severe chronic obstructive pulmonary disease (COPD). Given its simplified inhaler use compared with multiple inhaler triple therapy (MITT), this therapeutic option has the potential to offer benefit in terms of improved persistence and adherence. Given the lack of real-world evidence of the effectiveness of triple therapy, this study was designed to evaluate the use of MITT and SITT in France and compare persistence.

Methods: A retrospective cohort study was performed. Patients with COPD who initiated triple therapy between 1 July 2017 and 31 December 2019 were included from The Health Improvement Network, a large electronic medical database in France, which includes pharmacy data. A 60-day treatment gap defined discontinuation and thereby persistence.

Results: A total of 3134 patients initiated triple therapy for COPD in the study period, among them 485 with SITT. In 2019, the rate of use of SITT was 28.2%. The mean age (67.3 years) and sex (44.2% female) of patients initiating triple therapy was similar between MITT and SITT, and most patients had escalated from dual therapy (84.1%). However, SITT was more frequently initiated by a pulmonologist (59.8%) and a higher prevalence of comorbid asthma was observed for SITT (47.0% vs 37.9%). Persistence was assessed among patients who did not discontinue after a single dispensation of triple therapy (n=1674). Median persistence was 181 days for SITT and 135 days for MITT, and the covariate-adjusted HR for persistence was 1.47 (p<0.001) and the estimated persistence at 1 year was 33% for SITT compared with 18% for MITT.

Discussion: This study suggests that persistence was higher for the patients treated with SITT compared with MITT in France. Moreover, most patients initiated with triple therapy were previously treated with dual therapy and had exacerbations in the previous year.

Keywords: COPD Exacerbations; COPD Pathology; COPD Pharmacology; COPD epidemiology.

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Conflict of interest statement

Competing interests: AstraZeneca is a funder and an affiliation for some of the authors. GD reports personal fees from Nuaira, BTG/PneumRx, Chiesi, Boehringer Ingelheim and AstraZeneca. CVF, NP and GT are employees of AstraZeneca. AC, CEP and CR are employees of Cegedim. AM is an independent consultant for Cegedim.

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5

[BMJ Open](#)



. 2023 Jun 1;13(6):e072685.

doi: 10.1136/bmjopen-2023-072685.

[Study protocol: pneumonia and inhaled corticosteroid treatment patterns in chronic obstructive pulmonary disease – a cohort study using sequence analysis \(PICCS\)](#)

[Allan Klitgaard](#)^{1,2}, [Rikke Ibsen](#)³, [Ole Hilberg](#)^{4,2}, [Anders Løkke](#)^{4,2}

[Affiliations expand](#)

- PMID: 37263696
- DOI: [10.1136/bmjopen-2023-072685](https://doi.org/10.1136/bmjopen-2023-072685)

Free article

Abstract

Introduction: Treatment with inhaled corticosteroids (ICS) is a widely used treatment in chronic obstructive pulmonary disease. The main effects include a reduction in the number of exacerbations and, for some patients, an increase in expected mortality. Unfortunately, the treatment is also linked to an increased risk of pneumonia, and very little is known about which patients experience this increased risk. There is a need for identification of patient characteristics associated with increased risk of pneumonia and treatment with ICS.

Methods and analysis: This is a register-based cohort study that uses the nationwide Danish registers. Data from several registers in the years 2008–2018 will be merged on an individual level using the personal identification numbers that are unique to every citizen in Denmark. Clusters based on pneumonia incidence and ICS treatment patterns will be explored with a sequence analysis in a 3-year follow-up period.

Ethics and dissemination: This is a register-based study and research ethics approval is not required according to Danish Law and National Ethics Committee Guidelines. The results will be submitted to peer-reviewed journals and reported at appropriate national and international meetings.

Keywords: Adult thoracic medicine; Chronic airways disease; Emphysema; Epidemiology; Respiratory infections.

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Conflict of interest statement

Competing interests: None declared.

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[PLOS One](#)

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. 2023 Jun 1;18(6):e0286302.

doi: 10.1371/journal.pone.0286302. eCollection 2023.

[Impact of bisoprolol and amlodipine on cardiopulmonary responses and symptoms during exercise in patients](#)

with chronic obstructive pulmonary disease

[Chou-Chin Lan](#)^{1,2}, [Po-Chun Hsieh](#)³, [I-Shiang Tzeng](#)⁴, [Mei-Chen Yang](#)^{1,2}, [Chih-Wei Wu](#)^{1,2}, [Wen-Lin Su](#)^{1,2}, [Yao-Kuang Wu](#)^{1,2}

Affiliations expand

- PMID: 37262049
- PMCID: [PMC10234532](#)
- DOI: [10.1371/journal.pone.0286302](#)

Free PMC article

Abstract

Background: Patients with chronic obstructive pulmonary disease (COPD) often have exercise intolerance. The prevalence of hypertension in COPD patients ranges from 39-51%, and β -blockers and amlodipine are commonly used drugs for these patients.

Objectives: We aimed to study the impact of β -blockers and amlodipine on cardiopulmonary responses during exercise.

Methods: A total 81 patients with COPD were included and the patients underwent spirometry, cardiopulmonary exercise tests, and symptoms questionnaires.

Results: There were 14 patients who took bisoprolol and 67 patients who did not. Patients with COPD taking β -blockers had lower blood oxygen concentration (SpO₂) and more leg fatigue at peak exercise but similar exercise capacity as compared with patients not taking bisoprolol. There were 18 patients treated with amlodipine and 63 patients without amlodipine. Patients taking amlodipine had higher body weight, lower blood pressure at rest, and lower respiratory rates during peak exercise than those not taking amlodipine. Other cardiopulmonary parameters, such as workload, oxygen consumption at peak exercise, tidal volume at rest or exercise, cardiac index at rest or exercise were not significantly different between patients with or without bisoprolol or amlodipine. Smoking status did not differ between patients with or without bisoprolol or amlodipine.

Conclusions: COPD is often accompanied by hypertension, and β -blockers and amlodipine are commonly used antihypertensive drugs for these patients. Patients with COPD taking

bisoprolol had lower SpO2 and more leg fatigue during peak exercise. Patients taking amlodipine had lower respiratory rates during exercise than those not taking amlodipine. Exercise capacity, tidal volume, and cardiac index during exercise were similar between patients with and without bisoprolol or amlodipine.

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Conflict of interest statement

The authors have declared that no competing interests exist.

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Ann Behav Med

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. 2023 Jun 1;kaad026.

doi: 10.1093/abm/kaad026. Online ahead of print.

[Depression Symptoms and Physical Activity in Veterans With COPD: Insights From a Web-Based, Pedometer-Mediated Physical Activity Intervention](#)

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Affiliations expand

- PMID: 37260290
- DOI: [10.1093/abm/kaad026](https://doi.org/10.1093/abm/kaad026)

Abstract

Background: Depression is known to limit physical activity (PA) among individuals with chronic obstructive pulmonary disease (COPD). However, whether and how depression influences the effectiveness of PA interventions is unknown.

Purpose: The study examined the association between baseline depression symptoms and change in daily step count and whether group assignment to a web-based, pedometer-mediated PA intervention moderated the association between baseline depression symptoms and change in daily step count.

Methods: Secondary analysis included two cohorts of U.S. Veterans with COPD (n = 212; 97% male; mean age 69 ± 8 years) assessed at baseline and 3 months. Cohorts 1 and 2 were randomly assigned to the same PA intervention (n = 111) or a control group (n = 101). Multivariate regressions tested the main effects of baseline depression symptoms (BDI-II total and cognitive-affective and somatic subscales) on change in daily steps, as well as the interaction between baseline BDI-II and subscales and group assignment on change in daily steps.

Results: Greater BDI-II total score (B = -31.8, SE = 14.48, p = .030) and somatic subscale scores (B = -99.82, SE = 35.76, p = .006) were associated with less improvement in daily step count. There was a significant interaction between baseline cognitive-affective subscale and the intervention predicting change in daily step count (B = -88.56, SE = 42.31, p = .038). When cognitive-affective subscale scores were ≥ 1 SD above the mean, the intervention was no longer associated with an increase in daily step count (p = .585).

Conclusions: Depression should be routinely assessed and targeted as part of PA promotion efforts.

Keywords: Chronic obstructive pulmonary disease (COPD); Depression; Physical activity; Physical activity promotion.

Plain language summary

United States (U.S.) Veterans have high rates of chronic obstructive pulmonary disease (COPD), a progressive lung disease that causes shortness of breath. Promoting physical activity (PA) is an important component to the management of COPD resulting in improved outcomes. Technology-based interventions (i.e., pedometers, websites) are effective at increasing PA in persons with COPD. However, depression symptoms, such as low mood and motivation, may influence their effectiveness. This secondary data analysis examined whether depression symptoms were related to improvement in daily step count. Two cohorts of U.S. Veterans were randomized to either a web-based, pedometer-mediated PA intervention (i.e., pedometer, goal setting and feedback, education and online community) or a control group (i.e., pedometer only or usual care). Daily step count was assessed at baseline and at 3 months. Across both groups, greater overall depression symptoms and greater bodily symptoms of depression (i.e., fatigue) were associated with less improvement in daily step count. Veterans with greater cognitive-affective symptoms of depression (i.e., low mood, loss of interest, or pleasure) who were assigned to the intervention group showed no improvement in daily step count compared with controls. Results highlight the importance of detecting and treating depression as part of PA interventions.

Published by Oxford University Press on behalf of the Society of Behavioral Medicine 2023.

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. 2023 Jun 1.

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Effects of climate change on patients with respiratory and cardiovascular conditions

[Eleanor Squires](#)¹

Affiliations expand

- PMID: 37259785
- DOI: [10.7748/ns.2023.e12087](https://doi.org/10.7748/ns.2023.e12087)

Abstract

Climate change is one of the most significant global challenges and is already having detrimental effects on people's health. Pollution levels and ambient temperatures continue to increase, resulting in higher levels of humidity and pollen production. These environmental threats can affect many vulnerable patients, particularly those with respiratory and cardiovascular conditions, and nurses have a crucial role in raising awareness of the health implications of climate change. This article explores the pathophysiological effects of climate change on patients with asthma, chronic obstructive pulmonary disease and cardiovascular disease, and aims to enhance nurses' understanding of the health challenges of climate change.

Keywords: asthma; cardiorespiratory; chronic obstructive pulmonary disease; climate change and sustainability in healthcare; clinical; health promotion; lung diseases; public health; respiratory.

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Conflict of interest statement

None declared

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Observational Study

PLoS One

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. 2023 May 31;18(5):e0285830.

doi: 10.1371/journal.pone.0285830. eCollection 2023.

Pulmonary function following hyperbaric oxygen therapy: A longitudinal observational study

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Affiliations expand

- PMID: 37256885
- PMCID: [PMC10231819](#)
- DOI: [10.1371/journal.pone.0285830](#)

Free PMC article

Abstract

Hyperbaric oxygen therapy (HBOT) is known to be associated with pulmonary oxygen toxicity. However, the effect of modern HBOT protocols on pulmonary function is not completely understood. The present study evaluates pulmonary function test changes in patients undergoing serial HBOT. We prospectively collected data on patients undergoing HBOT from 2016-2021 at a tertiary referral center (protocol registration [NCT05088772](#)). Patients underwent pulmonary function testing with a bedside spirometer/pneumotachometer prior to HBOT and after every 20 treatments. HBOT was performed using 100% oxygen at a pressure of 2.0-2.4 atmospheres absolute (203-243 kPa) for 90 minutes, five times per week. Patients' charts were retrospectively reviewed for

demographics, comorbidities, medications, HBOT specifications, treatment complications, and spirometry performance. Primary outcomes were defined as change in percent predicted forced expiratory volume in one second (FEV1), forced vital capacity (FVC), and forced mid-expiratory flow (FEF25-75), after 20, 40, and 60 HBOT sessions. Data was analyzed with descriptive statistics and mixed-model linear regression. A total of 86 patients were enrolled with baseline testing, and the analysis included data for 81 patients after 20 treatments, 52 after 40 treatments, and 12 after 60 treatments. There were no significant differences in pulmonary function tests after 20, 40, or 60 HBOT sessions. Similarly, a subgroup analysis stratifying the cohort based on pre-existing respiratory disease, smoking history, and the applied treatment pressure did not identify any significant changes in pulmonary function tests during HBOT. There were no significant longitudinal changes in FEV1, FVC, or FEF25-75 after serial HBOT sessions in patients regardless of pre-existing respiratory disease. Our results suggest that the theoretical risk of pulmonary oxygen toxicity following HBOT is unsubstantiated with modern treatment protocols, and that pulmonary function is preserved even in patients with pre-existing asthma, chronic obstructive lung disease, and interstitial lung disease.

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Conflict of interest statement

I have read the journal's policy and the authors of this manuscript have the following competing interests: RK is a shareholder in the Rouge Valley Hyperbaric Medical Center, Toronto, ON. This does not alter our adherence to PLOS ONE policies on sharing data and materials.

- [37 references](#)
- [5 figures](#)

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Adv Ther

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. 2023 May 31;1-16.

doi: 10.1007/s12325-023-02524-y. Online ahead of print.

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

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

Affiliations expand

- PMID: 37256536
- PMCID: [PMC10230142](#)
- DOI: [10.1007/s12325-023-02524-y](#)

Free PMC article

Abstract

Introduction: The Global Initiative for Chronic Obstructive Lung Disease (GOLD 2023) no longer recommends a long-acting β_2 -agonist (LABA) plus inhaled corticosteroid (ICS) combination for the treatment of chronic obstructive pulmonary disease (COPD). In patients treated with LABA/ICS, who continue to experience symptoms without frequent or severe exacerbations, GOLD now recommends switching to long-acting muscarinic antagonist (LAMA)/LABA instead of escalating to triple therapy (TT; LAMA/LABA/ICS), which previously was also a recommended option. EVELUT®, a real-life, observational study, compared these two treatment strategies in terms of symptom relief and health status improvement.

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

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

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

Clinical trial registration: ClinicalTrials.gov: [NCT03954132](https://clinicaltrials.gov/ct2/show/study/NCT03954132).

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

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Conflict of interest statement

Roland Buhl reports grants and personal fees from Boehringer Ingelheim, GlaxoSmithKline, Novartis and Roche, and personal fees from AstraZeneca, Berlin-Chemie, Chiesi, Cipla, Sanofi and Teva, outside the submitted work. Michael Dreher has received speaking fees from Actelion, AstraZeneca, Bayer, Berlin Chemie, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Hamilton, Heinen und Löwenstein, InterMune, Linde, Novartis, Pfizer, Philips Respironics, ResMed, Roche and Weinmann; honoraria for advising from Almirall, Boehringer Ingelheim, Hamilton, Linde, Novartis, Pfizer, Philips Respironics, ResMed and Roche; and grants from Linde, Philips Respironics, ResMed, Land NRW and the German Federal Ministry of Education and Research (BMBF). Muriel Mattiucci-Guehlke and Rachel Emerson-Stadler are full-time employees of Boehringer Ingelheim. Sebastian Eckhardt works for Alcedis GmbH and was contracted by Boehringer Ingelheim for this work. Christian Taube reports no conflict of interest. Claus F Vogelmeier has given presentations at symposia and/or served on scientific advisory boards sponsored by Aerogen, AstraZeneca, Boehringer Ingelheim, CSL Behring, Chiesi, GlaxoSmithKline, Grifols, Insmmed, Menarini, Novartis, Nuvaiva, Roche, Sanofi and MedUpdate.

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Diabetes Obes Metab

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. 2023 May 29.

doi: 10.1111/dom.15142. Online ahead of print.

[Associations of diabetes, prediabetes and diabetes duration with the risk of chronic obstructive pulmonary disease: A prospective UK Biobank study](#)

[Jian Su](#)^{1,2}, [Mengyao Li](#)¹, [Xinglin Wan](#)¹, [Hao Yu](#)², [Yanan Wan](#)², [Dong Hang](#)¹, [Yan Lu](#)³, [Ran Tao](#)^{1,2}, [Ming Wu](#)^{1,2}, [Jinyi Zhou](#)^{1,2}, [Xikang Fan](#)²

Affiliations expand

- PMID: 37248816

- DOI: [10.1111/dom.15142](https://doi.org/10.1111/dom.15142)

Abstract

Aim: To investigate the associations of diabetes, prediabetes and diabetes duration with chronic obstructive pulmonary disease (COPD) risk and survival in the UK Biobank.

Materials and methods: We conducted a prospective analysis among 452 680 participants without COPD at baseline using UK Biobank data. Multivariable-adjusted hazard ratios (HRs) and 95% confidence intervals (CIs) were estimated from Cox regression models. The dose-response relationship was explored using restricted cubic splines. A separate survival analysis was conducted for 12 595 patients with incident COPD.

Results: Over a median follow-up of 12.3 years, 12 595 cases of COPD were documented. Compared with the reference group, those with prediabetes and diabetes were associated with an 18% (HR 1.18 [95% CI: 1.13-1.24]) and 35% (HR 1.35 [95% CI: 1.24-1.47]) higher risk of COPD, respectively. Diabetes duration was associated with COPD risk, with multivariable HRs (95% CIs) of 1.23 (1.05-1.44), 1.20 (1.04-1.39) and 1.18 (1.01-1.37) for diabetes duration of 7 years or longer, 3 to less than 7 years, and 1 to less than 3 years versus less than 1 year, respectively. Dose-response analysis revealed a non-linear relationship between diabetes duration and COPD risk. Regarding COPD survival, COPD patients with prediabetes and diabetes had a 9% (HR 1.09 [95% CI: 1.00-1.19]) and 21% (HR 1.21 [95% CI: 1.05-1.41]) higher risk of overall death, respectively. Compared with the cases with a diabetes duration of less than 1 year, those with a diabetes duration of 7 years or longer were associated with a 46% higher risk of overall death (HR 1.46 [95% CI: 1.11-1.92]).

Conclusions: Our findings indicate that diabetes, prediabetes and a longer diabetes duration are associated with a higher risk of and worse survival for COPD. Future studies are warranted to determine the optimal way of diabetes control that might reduce COPD risk.

Keywords: chronic obstructive pulmonary disease; diabetes; diabetes duration; prediabetes; prospective cohort study.

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- [68 references](#)

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Multicentre double-blind randomised controlled trial of systematic corticosteroid therapy in patients with acute exacerbations of chronic obstructive pulmonary disease admitted to hospital with higher eosinophil levels: the ECHO protocol

[Lirong Liang](#)¹, [Yingxiang Lin](#)², [Lin Feng](#)¹, [Shuai Shao](#)², [Siyu Cao](#)², [Hengmo Rong](#)², [Shuilian Chu](#)¹, [Wuxiang Xie](#)³, [Samuel Cai](#)⁴, [Jiawen Wang](#)⁵, [Zhaohui Tong](#)⁶

Affiliations expand

- PMID: 37247957
- PMCID: [PMC10230870](#)
- DOI: [10.1136/bmjopen-2022-066354](#)

Free PMC article

Abstract

Introduction: Corticosteroid is one of the most commonly used medications in patients with acute exacerbations of chronic obstructive pulmonary disease (AECOPD). The increasing understanding of these side-effects of systematic corticosteroids and their better response to treatment among patients with COPD with higher blood eosinophil counts has led to an interest in a more targeted approach to systematic corticosteroid treatment. However, there is a lack of evidence from high-quality randomised controlled

trial (RCT) studies about whether initial systematic corticosteroids should be given to patients with AECOPD with elevated eosinophilia. The aim of the present research was to test this hypothesis.

Methods and analysis: This is a multicentre, double-blind, superiority RCT in the respiratory departments of 12 general hospitals in China. It is anticipated that 456 patients with AECOPD with a blood eosinophil count >2% or >300 cells/ μ L at admission will be recruited. Eligible patients will be randomised (1:1) to the intervention group receiving 40 mg oral prednisone daily or identical-appearing placebo (control group) for five consecutive days. Follow-up visits are performed during hospitalisation, followed by clinic interviews on days 30, 60 and 90 after discharge. The primary outcome is treatment failure rates comprising requiring or receiving invasive or non-invasive mechanical ventilation, requiring or transferring to intensive care unit during the index hospitalisation, length of index hospitalisation longer than 14 days, death during the index hospitalisation or within 30 days after discharge and readmission with acute exacerbations of COPD within 30 days after discharge. The results of this trial will provide insight into the value of using blood eosinophil counts as a biomarker of eosinophilic exacerbation and initiating systematic corticosteroid treatment for patients with AECOPD with higher eosinophil levels.

Ethics and dissemination: This study was approved by Beijing Chaoyang Hospital Institutional Review Board (approval number: 2020-KE-544) and the main results and secondary results will be published in peer-reviewed journals.

Trial registration number: [NCT05059873](https://www.clinicaltrials.gov/ct2/show/study?term=NCT05059873).

Keywords: Infectious diseases & infestations; Respiratory infections; respiratory medicine (see Thoracic Medicine).

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Conflict of interest statement

Competing interests: None declared.

- [38 references](#)
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Publication types, MeSH terms, Substances, Supplementary concepts, Associated dataexpand

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13

Observational Study

Eur Radiol Exp

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. 2023 May 29;7(1):26.

doi: 10.1186/s41747-023-00340-1.

Association between thoracic and third lumbar CT-derived muscle mass and density in Caucasian patients without chronic disease: a proof-of-concept study

[Mia Solholt Godthaab Brath](#)^{1 2 3}, [Marina Sahakyan](#)⁴, [Esben Bolvig Mark](#)⁵, [Jens Brøndum Frøkjær](#)^{6 4}, [Henrik Højgaard Rasmussen](#)^{6 7 8}, [Lasse Riis Østergaard](#)^{6 9}, [Ulla Møller Weinreich](#)^{10 6 11}

Affiliations expand

- PMID: 37246199
- PMCID: [PMC10225410](#)
- DOI: [10.1186/s41747-023-00340-1](#)

Free PMC article

Abstract

Background: Computed tomography (CT) is increasingly used in the clinical workup, and existing scan contains unused body composition data, potentially useful in a clinical setting. However, there is no healthy reference for contrast-enhanced thoracic CT-derived muscle measures. Therefore, we aimed at investigating whether there is a correlation between each of the thoracic and third lumbar vertebra level (L3) skeletal muscle area (SMA), skeletal muscle index (SMI), and skeletal muscle density (SMD) at contrast-enhanced CT in patients without chronic disease.

Methods: A proof-of-concept retrospective observational study was based on Caucasian patients without chronic disease, who received CT for trauma between 2012 and 2014. Muscle measures were assessed using a semiautomated threshold-based software by two raters independently. Pearson's correlation between each thoracic level and third lumbar and intraclass correlation between two raters and test-retest with SMA as proxy parameters were used.

Results: Twenty-one patients (11 males, 10 females; median age 29 years) were included. The second thoracic vertebra (T2) had the highest median of cumulated SMA (males 314.7 cm², females 118.5 cm²) and SMI (97.8 cm²/m² and 70.4 cm²/m², respectively). The strongest SMA correlation was observed between T5 and L3 ($r = 0.970$), the SMI between T11 and L3 ($r = 0.938$), and the SMD between the T10 and L3 ($r = 0.890$).

Conclusions: This study suggests that any of the thoracic levels can be valid to assess skeletal muscle mass. However, the T5 may be most favourable for measuring SMA, the T11 for SMI, and T10 for SMD when using contrast-enhanced thoracic CT.

Relevance statement: In COPD patients, a CT-derived thoracic muscle mass assessment may help identify who would benefit from focused pulmonary rehabilitation: thoracic contrast-enhanced CT conducted as part of the standard clinical workup can be used for this evaluation.

Key points: • Any thoracic level can be used to assess thoracic muscle mass. • Thoracic level 5 is strongly associated with the 3rd lumbar muscle area. • A strong correlation between the thoracic level 11 and the 3rd lumbar muscle index. • Thoracic level 10 is strongly associated with the 3rd lumbar muscle density.

Keywords: Body composition; Contrast media; Muscle (skeletal); Tomography (x-ray computed).

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Conflict of interest statement

The authors declare that they have no competing interests.

- [32 references](#)

- [5 figures](#)

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Publication types, MeSH terms [expand](#)

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Sr Care Pharm

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. 2023 Jun 1;38(6):214-222.

doi: 10.4140/TCP.n.2023.214.

Chronic Obstructive Pulmonary Disease, Part 1: Disease State Review

[Jessica R Merlo](#)¹, [Danielle Backus](#)¹

Affiliations [expand](#)

- PMID: 37231577
- DOI: [10.4140/TCP.n.2023.214](https://doi.org/10.4140/TCP.n.2023.214)

Abstract

In 2018, chronic obstructive pulmonary disease (COPD) was estimated to affect 16.4 million people, or 6.6% of adults in the United States alone. In older people, the estimated prevalence is even higher with reported rates as high as 14.2% in adults older than 65 years of age. COPD is a preventable disease caused by repetitive exposure to noxious particles, especially inhaled toxins from cigarette smoke. It is associated with decreased quality of life, increased hospitalization, increased mortality, and significant financial burden to patients and health care systems. Senior care pharmacists are well-suited to

provide assessment, treatment, and patient education related to COPD and smoking cessation. Early and frequent interventions can decrease symptom burden, reduce costs, and improve the lives of those with COPD.

SUPPLEMENTARY INFO

MeSH termsexpand

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Sr Care Pharm

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. 2023 Jun 1;38(6):212-213.

doi: 10.4140/TCP.n.2023.212.

[Going for GOLD: Chronic Obstructive Pulmonary Disease Management in Older Adults](#)

[Nicole K Early](#)¹

Affiliations expand

- PMID: 37231575
- DOI: [10.4140/TCP.n.2023.212](https://doi.org/10.4140/TCP.n.2023.212)

No abstract available

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MeSH termsexpand

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Respir Care

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. 2023 Jun;68(6):821-837.

doi: 10.4187/respcare.11069.

Respiratory Care Management of COPD Exacerbations

[Dean R Hess](#)¹

Affiliations expand

- PMID: 37225653
- PMCID: PMC10208989 (available on 2024-06-01)
- DOI: [10.4187/respcare.11069](https://doi.org/10.4187/respcare.11069)

Abstract

A COPD exacerbation is characterized by an increase in symptoms such as dyspnea, cough, and sputum production that worsens over a period of 2 weeks. Exacerbations are common. Respiratory therapists and physicians in an acute care setting often treat these patients. Targeted O₂ therapy improves outcomes and should be titrated to an S_{pO₂} of 88-92%. Arterial blood gases remain the standard approach to assessing gas exchange in patients with COPD exacerbation. The limitations of arterial blood gas surrogates (pulse oximetry, capnography, transcutaneous monitoring, peripheral venous blood gases) should be appreciated so that they can be used wisely. Inhaled short-acting bronchodilators can be provided by nebulizer (jet or mesh), pressurized metered-dose inhaler (pMDI), pMDI with spacer or valved holding chamber, soft mist inhaler, or dry powder inhaler. The available

evidence for the use of heliox for COPD exacerbation is weak. Noninvasive ventilation (NIV) is standard therapy for patients who present with COPD exacerbation and is supported by clinical practice guidelines. Robust high-level evidence with patient important outcomes is lacking for the use of high-flow nasal cannula in patients with COPD exacerbation. Management of auto-PEEP is the priority in mechanically ventilated patients with COPD. This is achieved by reducing airway resistance and decreasing minute ventilation. Trigger asynchrony and cycle asynchrony are addressed to improve patient-ventilator interaction. Patients with COPD should be extubated to NIV. Additional high-level evidence is needed before widespread use of extracorporeal CO₂ removal. Care coordination can improve the effectiveness of care for patients with COPD exacerbation. Evidence-based practices improve outcomes in patients with COPD exacerbation.

Keywords: COPD; aerosol therapy; auto-PEEP; care coordination; exacerbation; extracorporeal CO₂ removal; high-flow nasal cannula; noninvasive ventilation; oxygen therapy.

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Conflict of interest statement

Dr Hess discloses relationships with Daedalus Enterprises, American Association for Respiratory Care, American Respiratory Care Foundation, Lungpacer, University of Pittsburgh, Jones and Bartlett, McGraw Hill, and UpToDate. Dr Hess is managing editor of Respiratory Care.

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Randomized Controlled Trial

Drugs Aging

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. 2023 Jun;40(6):551-561.

Benzodiazepine Receptor Agonists Use and Cessation Among Multimorbid Older Adults with Polypharmacy: Secondary Analysis from the OPERAM Trial

François-Xavier Sibille^{1 2 3}, Marie de Saint-Hubert^{4 5}, Séverine Henrard^{5 6}, Carole Elodie Aubert^{7 8}, Namiko Anna Goto⁹, Emma Jennings¹⁰, Olivia Dalleur^{6 11}, Nicolas Rodondi^{7 8}, Wilma Knol⁹, Denis O'Mahony¹⁰, Matthias Schwenkglenks¹², Anne Spinewine^{6 13}

Affiliations expand

- PMID: 37221407
- PMCID: [PMC10232614](#)
- DOI: [10.1007/s40266-023-01029-1](#)

Free PMC article

Abstract

Background: Benzodiazepine receptor agonists (BZRAs) are commonly prescribed in older adults despite an unfavorable risk-benefit ratio. Hospitalizations may provide a unique opportunity to initiate BZRA cessation, yet little is known about cessation during and after hospitalization. We aimed to measure the prevalence of BZRA use before hospitalization and the rate of cessation 6 months later, and to identify factors associated with these outcomes.

Methods: We conducted a secondary analysis of a cluster randomized controlled trial (Optimising thERapy to prevent Avoidable hospital admissions in the Multimorbid elderly [OPERAM]), comparing usual care and in-hospital pharmacotherapy optimization in adults aged 70 years or over with multimorbidity and polypharmacy in four European countries. BZRA cessation was defined as taking one or more BZRA before hospitalization and not taking any BZRA at the 6-month follow-up. Multivariable logistic regression was performed

to identify factors associated with BZRA use before hospitalization and with cessation at 6 months.

Results: Among 1601 participants with complete 6-month follow-up data, 378 (23.6%) were BZRA users before hospitalization. Female sex (odds ratio [OR] 1.52 [95% confidence interval 1.18-1.96]), a higher reported level of depression/anxiety (OR up to 2.45 [1.54-3.89]), a higher number of daily drugs (OR 1.08 [1.05-1.12]), use of an antidepressant (OR 1.74 [1.31-2.31]) or an antiepileptic (OR 1.46 [1.02-2.07]), and trial site were associated with BZRA use. Diabetes mellitus (OR 0.60 [0.44-0.80]) was associated with a lower probability of BZRA use. BZRA cessation occurred in 86 BZRA users (22.8%). Antidepressant use (OR 1.74 [1.06-2.86]) and a history of falling in the previous 12 months (OR 1.75 [1.10-2.78]) were associated with higher BZRA cessation, and chronic obstructive pulmonary disease (COPD) (OR 0.45 [0.20-0.91]) with lower BZRA cessation.

Conclusion: BZRA prevalence was high among included multimorbid older adults, and BZRA cessation occurred in almost a quarter of them within 6 months after hospitalization. Targeted BZRA deprescribing programs could further enhance cessation. Specific attention is needed for females, central nervous system-acting co-medication, and COPD co-morbidity.

Registration: ClinicalTrials.gov identifier: [NCT02986425](https://clinicaltrials.gov/ct2/show/study/NCT02986425). December 8, 2016.

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Conflict of interest statement

François-Xavier Sibille is a Clinical Master Specialist Applicant for a Ph.D. of the Fonds de la Recherche Scientifique—FNRS. The funder had no role in study design, data collection, data analysis, data interpretation, or writing of the report. All other authors declare that they have no conflict of interest.

- [50 references](#)
- [2 figures](#)

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances, Associated data, Grant supportexpand

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Environ Sci Pollut Res Int

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. 2023 Jun;30(26):68836-68847.

doi: 10.1007/s11356-023-27325-2. Epub 2023 May 2.

Burden of chronic obstructive pulmonary disease attributable to non-optimal temperature from 1990 to 2019: a systematic analysis from the Global Burden of Disease Study 2019

[Jianjun Bai](#) ^{#1}, [Jiaxin Cui](#) ^{#2}, [Chuanhua Yu](#) ³

Affiliations expand

- PMID: 37129808
- DOI: [10.1007/s11356-023-27325-2](https://doi.org/10.1007/s11356-023-27325-2)

Abstract

Chronic obstructive pulmonary disease (COPD) has been the third leading cause of death worldwide. As the traditional risk factors (like smoking and ambient air pollution) on the burden of COPD being well characterized, the burden of COPD due to non-optimal temperature has been widely concerned. In this study, we extracted the relevant burden data of COPD attributable to non-optimal temperature from GBD 2019 and adopted estimated annual percent changes, Gaussian process regression (GPR), and age-period-cohort model to evaluate the spatiotemporal patterns, relationships with socio-demographic level, and the independent effects of age, period and cohort from 1990 to 2019. In brief, the global COPD burden attributable to non-optimal temperatures showed declining trends but was still more severe in the elderly, males, Asia, and regions with low socio-demographic index (SDI). And cold had a greater burden than heat. The inverted U-shape is expected for the relationship between SDI and the burden of COPD caused by non-optimal temperatures according to the GPR model, with the inflection point around SDI 0.45. Besides, the improvements were observed in period and cohort effects but were

relatively limited in low and low-middle SDI regions. Public health managers should execute more targeted programs to lessen this burden predominantly among lower SDI countries.

Keywords: Age-period-cohort model; Chronic obstructive pulmonary disease; Global burden; Non-optimal temperature; Socio-demographic index.

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Pulm Ther

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. 2023 Jun;9(2):255-270.

doi: 10.1007/s41030-023-00221-3. Epub 2023 Apr 24.

[Effect of Long-Term Oxygen Therapy on Reducing Rehospitalization of Patients with Chronic Obstructive Pulmonary Disease: A Systematic Review and Meta-Analysis](#)

[Ramin Sami](#)¹, [Mahsa Akafzadeh Savari](#)², [Marjan Mansourian](#)³, [Roghayeh Ghazavi](#)⁴, [Rokhsareh Meamar](#)⁵

Affiliations [expand](#)

- PMID: 37093408
- PMCID: [PMC10203089](#)
- DOI: [10.1007/s41030-023-00221-3](#)

Free PMC article

Abstract

Introduction: The aim of this work is to evaluate whether the addition of home oxygen therapy (HOT) would reduce readmission in chronic obstructive pulmonary disease (COPD) patients.

Methods: PubMed, ScopeMed, Cochrane, Scopus, and Google Scholar databases were searched. The search strategy used the following keywords "chronic obstructive pulmonary disease", the intervention "long-term oxygen therapy", and the outcome "readmission" combined with the AND operator. The Newcastle-Ottawa Scale and Jadad Scale were used for assessing the quality of cohort studies and clinical trials, respectively. A random-effects model was employed in this study after calculating the standard errors by 95% confidence intervals. The I² statistic and Cochran's Q-test were used to measure heterogeneity. To address heterogeneity, subgroup analyses were carried out according to the length of LTOT, which was classified as "over 8 months" and "under 8 months".

Results: Seven studies were included in the analysis. In the pooled analysis, the RR [CI95%, p value], heterogeneity criteria for readmission reduced by 1.542 [1.284-1.851, < 0.001], I² = 60%, and 1.693 [1.645-1.744, < 0.001], I² = 60% for patients with a length of LTOT treatment under and above 8 months, respectively. A sensitivity analysis was conducted by systematically omitting each study, and it showed no influential studies. Egger's test indicated no publication bias (p = 0.64).

Conclusions: Based on our results in this systematic review, long-term oxygen therapy (LTOT) at home was associated with a significantly lower risk ratio of hospital readmission. However, the sample sizes in the studies necessitate larger RCTs to evaluate the effect of LTOT on readmission in COPD patients.

Keywords: COPD; Hospitalization; LTOT; Readmission.

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Conflict of interest statement

The authors take complete accountability for the content of this paper. Affiliations for the authors have been inserted in the title page. All authors have contributed to the preparation of this article. Ramin Sami, Mahsa Akafzadeh Savari, Marjan Mansourian, Roghayeh Ghazavi, and Rokhsareh Meamar declare that they have no competing interests.

- [35 references](#)
- [2 figures](#)

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Cytokine

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. 2023 Jun;166:156207.

doi: 10.1016/j.cyto.2023.156207. Epub 2023 Apr 21.

[Effect of nitric oxide synthase gene polymorphism on inflammatory response in patients with chronic obstructive pulmonary disease](#)

[Chunyan Liao](#)¹, [Zheng Li](#)¹, [Fengsen Li](#)², [Dan Xu](#)¹, [Jing Jing](#)¹

Affiliations [expand](#)

- PMID: 37088001
- DOI: [10.1016/j.cyto.2023.156207](https://doi.org/10.1016/j.cyto.2023.156207)

Free article

Abstract

This study aimed to investigate the association between nitric oxide synthase gene polymorphisms and the inflammatory responses in patients with 'fast-' and 'slow-' developing chronic obstructive pulmonary disease (COPD). In the main process, 190 patients with slow-developing COPD, 94 patients with fast-developing COPD and 105 healthy volunteers were selected for inclusion. Endothelial nitric oxide synthase (eNOS) was detected using western-blot eNOS sites, and inducible nitric oxide synthase (iNOS) was detected through SNPshot. T helper 17 cells (Th17) and regulator T (Treg) cells were detected via flow cytometry, and interferon-gamma, tumour necrosis factor-alpha, interleukin (IL)-17, IL-10, IL-6, IL-4 and IL-2 were detected using a cytometric bead array. The final results and conclusions drawn from the tests suggest that Th17/Treg-mediated immune inflammation plays an important role in the pathogenesis of COPD, but whether it affects the development of COPD needs further investigation. Overall, COPD patients with a young age of onset, young age of smoking initiation and small body mass index, as well as COPD patients with CC at rs3729508 in the iNOS gene and non-GG at rs7830 in the eNOS gene, may be more likely to contract fast-developing COPD.

Keywords: Chronic obstructive pulmonary disease; Clinical phenotype; T lymphocytes; iNOS gene single nucleotide polymorphism.

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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.

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MeSH terms, Substancesexpand

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Contemp Clin Trials

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. 2023 Jun;129:107203.

Chronic Obstructive Pulmonary Disease Access and Adherence to Pulmonary Rehabilitation Intervention (CAPRI): Protocol for a randomized controlled trial and adaptations during the COVID-19 pandemic

[Patricia M Bamonti](#)¹, [Stephanie A Robinson](#)², [Elizabeth Finer](#)³, [Reema Kadri](#)⁴, [David Gagnon](#)⁵, [Caroline R Richardson](#)⁴, [Marilyn L Moy](#)⁶

Affiliations expand

- PMID: 37084881
- PMCID: [PMC10113592](#)
- DOI: [10.1016/j.cct.2023.107203](#)

Free PMC article

Abstract

Background: Pulmonary rehabilitation (PR) is the standard of care for chronic obstructive pulmonary disease (COPD) management. However, significant barriers limit access and adherence to PR and alternatives are needed. The purpose of this randomized controlled trial is to test the efficacy of a web-based, pedometer-mediated intervention to increase physical activity (PA) for persons with COPD who decline PR or meet U.S. guidelines for referral to PR but have not participated (CAPRI-1). In addition, we will test whether the intervention maintains PA following PR in an exploratory aim (CAPRI-2).

Methods: Participants with COPD (N = 120) will be recruited and randomized 1:1 to a 12-week web-based, pedometer-mediated intervention or usual care (UC) (CAPRI-1). The intervention provides: 1) objective monitoring of walking and iterative feedback, 2) individualized step-count goals, 3) motivational messages and educational content, and 4) an online community. The primary outcome is change in daily step count from baseline to

12 weeks. Secondary outcomes include: (a) exercise capacity; (b) self-reported PA; (c) PA intensity; (d) exercise self-regulatory efficacy, (e) health-related quality of life, (f) dyspnea, (g) depression symptoms, and (h) healthcare utilization. CAPRI-2 will test whether participants (N = 96) assigned to the intervention following PR completion show greater maintenance of daily step count compared to UC at 3, 6, 9, and 12 months.

Discussion: If the intervention is efficacious, it may be an alternative for those who cannot attend PR or a maintenance program following completion of conventional PR. We also present adaptations made to the protocol in response to the COVID-19 pandemic.

Keywords: Chronic obstructive pulmonary disease; Daily step count; Pedometer; Physical activity; Protocol; Pulmonary rehabilitation; Web-based.

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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.

- [48 references](#)
- [1 figure](#)

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grant support[expand](#)

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Semin Respir Crit Care Med

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. 2023 Jun;44(3):317-326.

doi: 10.1055/s-0043-1766117. Epub 2023 Apr 18.

Global Trends in Occupational Lung Disease

[Robert A Cohen](#)¹, [Leonard H T Go](#)¹, [Cecile S Rose](#)^{2,3}

Affiliations expand

- PMID: 37072021
- DOI: [10.1055/s-0043-1766117](https://doi.org/10.1055/s-0043-1766117)

Abstract

Lung diseases caused by workplace exposure are too often mis- or underdiagnosed due in part to nonexistent or inadequate health surveillance programs for workers. Many of these diseases are indistinguishable from those that occur in the general population and are not recognized as being caused at least in part by occupational exposures. More than 10% of all lung diseases are estimated to result from workplace exposures. This study reviews recent estimates of the burden of the most important occupational lung diseases using data published by United Nations specialized agencies as well as the Global Burden of Disease studies. We focus on occupational chronic respiratory disease of which chronic obstructive lung disease and asthma are the most significant. Among occupational cancers, lung cancer is the most common, and is associated with more than 10 important workplace carcinogens. Classic occupational interstitial lung diseases such as asbestosis, silicosis, and coal workers' pneumoconiosis still comprise a substantial burden of disease in modern industrial societies, while other occupational causes of pulmonary fibrosis and granulomatous inflammation are frequently misclassified as idiopathic. Occupational respiratory infections gained prominence during the severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) pandemic, eclipsing influenza and tuberculosis and other less common workplace infectious agents. The most significant risks are workplace exposures to particulate matter, gases, and fumes as well as occupational carcinogens and asthmagens. We present data on the burden of disease measured by deaths attributable to occupational respiratory disease as well as disability-adjusted years of life lost. Where available, prevalence and incidence data are also presented. These diseases are unique in that they are theoretically 100% preventable if appropriate exposure controls and workplace medical surveillance are implemented. This remains a continuing challenge globally and requires steadfast commitment on the part of government, industry, organized labor, and the medical profession.

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Conflict of interest statement

None declared.

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

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☐ 23

Semin Respir Crit Care Med

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. 2023 Jun;44(3):378-384.

doi: 10.1055/s-0043-1764408. Epub 2023 Apr 17.

Chronic Obstructive Pulmonary Disease and Work: The Continuing Narrative

[David Fishwick](#)^{1,2}, [Chris Barber](#)³, [Ruth Wiggans](#)⁴

Affiliations expand

- PMID: 37068517
- DOI: [10.1055/s-0043-1764408](https://doi.org/10.1055/s-0043-1764408)

Abstract

It has long been recognized that harmful inhaled workplace exposures can contribute to the development of chronic obstructive pulmonary disease (COPD). This article, intended for the clinician, summarizes some of this evidence and some areas of controversy. Current estimates based on pooled epidemiological analyses of population-based studies identify that approximately 14% of the burden of COPD (and 13% of the burden of chronic bronchitis) is attributable to such exposures. In addition to these approaches, various studies implicate specific exposures as contributing. Certain of these relating to cadmium, coal, and respirable crystalline silica are discussed in more detail. Despite this amassed

evidence to date supporting associations between COPD and workplace exposures, there have been surprisingly few studies that have attempted to assess the attribution by experts of an occupational cause in cases of COPD. One study, using hypothetical cases of COPD, noted that while expert physicians were willing to make such an occupational link, this was only likely in cases with light smoking histories and a priori defined heavy occupational exposures. Relatively recent data relating to computed tomography (CT) scan appearances may give the clinician a further guide. Several studies from populations have now linked potentially harmful occupational exposures specifically with the presence of emphysema on CT scanning. It will be of interest to see if this finding, along with other clinical attributes of cases such as smoking and family histories, exclusion of asthma, genetic data, and the nature of workplace exposures, will increase the future diagnosis by clinicians of occupational COPD. In the interim, while better diagnostic approaches are developed, we suggest that consideration of an occupational cause is an important part of the clinical investigation of cases of COPD. Finally, we suggest that evidence-based workplace preventive strategies for occupational COPD should be informed by knowledge of which exposures are most important to reduce, and whether and when intervention to reduce exposure at an individual worker level is warranted.

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Conflict of interest statement

None declared.

SUPPLEMENTARY INFO

MeSH termsexpand

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☐ 24

Respir Care

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. 2023 Jun;68(6):721-726.

doi: 10.4187/respcare.10614. Epub 2023 Apr 11.

Delivery of Aerosolized Bronchodilators by High-Flow Nasal Cannula During COPD Exacerbation

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Affiliations expand

- PMID: 37041023
- PMCID: PMC10209003 (available on 2024-06-01)
- DOI: [10.4187/respcare.10614](https://doi.org/10.4187/respcare.10614)

Abstract

Background: Bronchodilator delivery via a high-flow nasal cannula (HFNC) has generated interest in recent years. The efficacy of in-line vibrating mesh nebulizers with an HFNC during COPD exacerbation is limited. The aim of this study was to evaluate the clinical response of subjects with COPD exacerbation who require bronchodilator therapy (anticholinergic and β -agonist) by using a vibrating mesh nebulizer in line with an HFNC.

Methods: This was a prospective single-center study performed in a respiratory intermediate care unit that enrolled patients with a diagnosis of COPD exacerbation who required noninvasive ventilation on admission. All the subjects underwent noninvasive ventilation breaks with an HFNC. After clinical stability, pulmonary function tests were performed to assess changes in FEV₁ and clinical parameters before and after bronchodilation by using a vibrating mesh nebulizer in line with an HFNC.

Results: Forty-six patients with COPD exacerbation were admitted. Five patients who did not use noninvasive ventilation and 10 patients who did not receive bronchodilator treatment with a vibrating mesh nebulizer were excluded. Thirty-one were selected, but 1 subject was secondarily excluded due to loss of data. Finally, 30 subjects were included. The primary outcome was spirometric changes in FEV₁. The mean \pm SD FEV₁ before receiving bronchodilator treatment by using a vibrating mesh nebulizer in line with an HFNC was 0.74 ± 0.10 L, and, after receiving treatment, the mean \pm SD FEV₁ changed to 0.88 ± 0.12 L ($P < .001$). Similarly, the mean \pm SD FVC increased from 1.75 ± 0.54 L to 2.13 ± 0.63 L ($P < .001$). Considerable differences were observed in breathing frequency and

heart rate after receiving bronchodilator treatment. No relevant changes were observed in the Borg scale or $S_{p_{O_2}}$ after treatment. The mean clinical stability recorded was 4 d.

Conclusions: In subjects with COPD exacerbation, bronchodilator treatment by using a vibrating mesh nebulizer in line with an HFNC showed a mild but significant improvement in FEV_1 and FVC. In addition, a decrease in breathing frequency was observed, suggesting a reduction in dynamic hyperinflation.

Keywords: COPD; aerosol; high-flow nasal cannula oxygen; nebulization; respiratory function tests.

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Conflict of interest statement

Dr MacLoughlin is an employee of Aerogen Limited. The other authors have disclosed no conflicts of interest.

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MeSH terms, Substancesexpand

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[Editorial](#)

Respirology

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. 2023 Jun;28(6):507-508.

doi: 10.1111/resp.14507. Epub 2023 Apr 11.

Dynamics of hyperinflation

[Jorrit B A Welling](#)^{1,2}, [Dirk-Jan Slebos](#)^{1,2}

Affiliations expand

- PMID: 37039738

- DOI: [10.1111/resp.14507](https://doi.org/10.1111/resp.14507)

Free article

No abstract available

Keywords: COPD; bronchoscopic lung volume reduction; dynamic hyperinflation; emphysema; endobronchial valve treatment.

- [14 references](#)

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Publication types, MeSH terms [expand](#)

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Observational Study

Respir Med

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. 2023 Jun;212:107236.

doi: 10.1016/j.rmed.2023.107236. Epub 2023 Apr 5.

[Change in physical activity related to admission for exacerbation in COPD patients](#)

[Cristóbal Esteban](#)¹, [Ane Antón-Ladislao](#)², [Amaia Aramburu](#)³, [Leyre Chasco](#)³, [Miren Orive](#)⁴, [Eva Tabernero](#)⁵, [Monica Rayón](#)⁶, [José Joaquín Cebrián](#)⁷, [José Terán](#)⁸, [Ignacio García-Talavera](#)⁹, [José M Quintana](#)¹⁰; [ReEPOC-REDISSEC group](#)

Collaborators, Affiliations expand

- PMID: 37023870
- DOI: [10.1016/j.rmed.2023.107236](https://doi.org/10.1016/j.rmed.2023.107236)

Abstract

Introduction: The aim of this study was to determine the impact of hospitalizations on levels of physical activity (PA) and whether other factors were associated with subsequent changes in PA.

Methods: Prospective observational cohort study with a nested case-control study, with follow-up 60 days from the index hospital admission. Nine hospitals participated in the study. Patients were recruited consecutively. Several variables and questionnaires of the clinical baseline status of the patients were recorded including: the COPD Assessment Test (CAT), the Hospital Anxiety-Depression scale (HADS), comorbidities and the Yale Physical Activity Survey. Patients' data related to admission and up to two months after discharge were also recorded.

Results: 883 patients were studied: 79.7% male; FEV1 48%; Charlson index 2; 28.7% active smokers. The baseline PA level for the total sample was 23 points. A statistically significant difference in PA was found between patients readmitted up to 2 months after the index admission and those not readmitted (17vs. 27, $p < 0.0001$). Multivariable linear regression analysis identified the following as predictors of the decrease of PA from baseline (index admission) up to 2 months follow-up: admission for COPD exacerbation in the two months prior to the index admission; readmission up to 2 months after the index admission; baseline HAD depressive symptoms, worse CAT score, and patient-reported "need for help".

Conclusions: In a cohort of admitted COPD patients, we identified a strong relationship between hospitalization for exacerbation and PA. In addition, some other potentially modifiable factors were found associated with the change in PA level after an admission.

Keywords: COPD; Exacerbation; Physical activity.

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Conflict of interest statement

Declaration of competing interest The study protocol was approved by the Basque Ethics Committee (reference PI2015124). Ninguno de los autores de este original presenta conflicto de interés alguno (directo o indirecto) en relación al mismo.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Supplementary conceptsexpand

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Respir Med

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. 2023 Jun;212:107221.

doi: 10.1016/j.rmed.2023.107221. Epub 2023 Apr 5.

COPD and 20-year hearing decline: The HUNT cohort study

[Lisa Aarhus](#)¹, [Morten Sand](#)², [Bo Engdahl](#)³

Affiliations expand

- PMID: 37023869
- DOI: [10.1016/j.rmed.2023.107221](https://doi.org/10.1016/j.rmed.2023.107221)

Free article

Abstract

Background: We aimed to assess the association between chronic obstructive pulmonary disease (COPD) and long-term hearing decline. A further aim was to study sex differences.

Methods: Population-based cohort study in Norway (the HUNT study) with baseline measurements in 1996-1998 and follow-up in 2017-2019. The sample included 12,082 participants (43% men, mean age at follow-up 64 years). We used multiple linear regression to assess the association between COPD (minimum one registered ICD-10 code with emphysema or other COPDs during follow-up) and 20-year hearing decline in the

low/mid/high frequency area (0.25-0.5/1-2/3-8 kHz). We adjusted for age, sex, education, smoking, noise exposure, ear infections, hypertension and diabetes.

Results: Persons registered with COPD (N = 403) had larger 20-year hearing decline at low frequencies (1.5 dB, 95% confidence interval (CI) 0.6-2.3) and mid frequencies (1.2 dB, 95% CI 0.4-2.1), but not at high frequencies. At high frequencies, the association was stronger and statistically significant only among women (1.9 dB, 95% CI 0.6-3.2). Persons registered with both COPD and respiratory failure (N = 19) had larger 20-year hearing decline at low and mid frequencies: 7.4 dB (95% CI 3.6-11.2) and 4.5 dB (95% CI 0.7-8.4), respectively.

Conclusion: Our large cohort study shows an association between COPD and increased long-term hearing decline. Women seem to be more susceptible to COPD-related hearing loss at high frequencies. The findings support that COPD can affect the cochlear function.

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Conflict of interest statement

Declaration of competing interest None.

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MeSH termsexpand

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☐ 28

[Randomized Controlled Trial](#)

Palliat Med

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. 2023 Jun;37(6):844-855.

doi: 10.1177/02692163231165106. Epub 2023 Mar 31.

The effect of an integrated palliative care intervention on quality of life and acute healthcare use in patients with COPD: Results of the COMPASSION cluster randomized controlled trial

[Johanna Broese](#)^{1,2}, [Rianne Mij van der Kleij](#)¹, [Els Ml Verschuur](#)², [Huib Am Kerstjens](#)³, [Ewald M Bronkhorst](#)⁴, [Yvonne Engels](#)⁵, [Niels H Chavannes](#)¹

Affiliations expand

- PMID: 37002561
- PMCID: [PMC10227092](#)
- DOI: [10.1177/02692163231165106](#)

Free PMC article

Abstract

Background: COPD causes high morbidity and mortality, emphasizing the need for palliative care.

Aim: To assess the effectiveness of palliative care in patients with COPD.

Design: Cluster randomized controlled trial (COMPASSION study; Netherlands Trial Register (NTR): NL7644, 07-04-2019). Healthcare providers within the intervention group were trained to implement palliative care components into routine COPD care. Patients completed questionnaires at baseline, after 3 and 6 months; medical records were assessed after 12 months. The primary outcome was quality of life (FACIT-Pal). Secondary outcomes were anxiety, depression, spiritual well-being, satisfaction with care, acute healthcare use, documentation of life-sustaining treatment preferences and place of death. Generalized linear mixed modelling was used for analyses.

Setting: Eight hospital regions in the Netherlands.

Participants: Patients hospitalized for an acute exacerbation of COPD and positive ProPal-COPD score.

Results: Of 222 patients included, 106 responded to the questionnaire at 6 months. Thirty-six of 98 intervention patients (36.7%) received the intervention. Intention-to-treat-analysis showed no effect on the primary outcome (adjusted difference: 1.09; 95% confidence interval: -5.44 to 7.60). In the intervention group, fewer intensive care admissions for COPD took place (adjusted odds ratio: 0.21; 95% confidence interval: 0.03-0.81) and strong indications were found for fewer hospitalizations (adjusted incidence rate ratio: 0.69; 95% confidence interval: 0.46-1.03).

Conclusions: We found no evidence that palliative care improves quality of life in patients with COPD. However, it can potentially reduce acute healthcare use. The consequences of the COVID-19 pandemic led to suboptimal implementation and insufficient power, and may have affected some of our findings.

Keywords: COPD; clinical effectiveness; cluster randomized controlled trial; palliative care; quality of life.

Conflict of interest statement

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

- [30 references](#)
- [2 figures](#)

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Am J Respir Crit Care Med

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. 2023 Jun 1;207(11):1536-1539.

doi: 10.1164/rccm.202210-1852LE.

Residual Volume versus FRC Computed Tomography Assessment of Functional Small Airway Disease in Smokers with and without Chronic Obstructive Pulmonary Disease

[Alejandro P Comellas](#)¹, [John D Newell Jr](#)^{2,3}, [Miranda Kirby](#)⁴, [Jered P Sieren](#)², [Sam Peterson](#)⁵, [Charles Hatt](#)^{6,7}, [Craig J Galban](#)⁷, [Ella A Kazerooni](#)^{7,8}, [David A Lynch](#)⁹, [MeiLan K Han](#)⁸, [Eric A Hoffman](#)^{1,2,3}

Affiliations expand

- PMID: 36977314
- DOI: [10.1164/rccm.202210-1852LE](https://doi.org/10.1164/rccm.202210-1852LE)

No abstract available

SUPPLEMENTARY INFO

Publication types, Grant supportexpand

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Editorial

Thorax

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. 2023 Jun;78(6):531-532.

doi: 10.1136/thorax-2023-220113. Epub 2023 Mar 27.

Do the 'missing millions' of COPD patients want to be found?

[David Mg Halpin](#)^{1,2}

Affiliations expand

- PMID: 36972980
- DOI: [10.1136/thorax-2023-220113](https://doi.org/10.1136/thorax-2023-220113)

No abstract available

Keywords: COPD epidemiology.

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

Publication types, MeSH terms expand

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Thorax

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. 2023 Jun;78(6):543-550.

doi: 10.1136/thorax-2022-219683. Epub 2023 Mar 27.

Diagnosis and treatment outcomes from prebronchodilator spirometry performed alongside lung cancer screening in a Lung Health Check programme

[Claire Bradley](#)¹, [Alison Boland](#)², [Louisa Clarke](#)³, [Naomi Dallinson](#)³, [Claire Eckert](#)⁴, [Deborah Ellames](#)², [Jonathan Finn](#)², [Rhian Gabe](#)⁵, [Neil Hancock](#)⁴, [Martyn Pt Kennedy](#)², [Jason Lindop](#)⁶, [Ayad Mohamed](#)⁷, [Gabriel Mullen](#)², [Rachael L Murray](#)⁸, [Suzanne Rogerson](#)⁶, [Bethany Shinkins](#)⁴, [Irene Simmonds](#)⁴, [Sara Upperton](#)², [Anne Wilkinson](#)³, [Philip A Crosbie](#)⁹, [Matthew Ej Callister](#)¹⁰

Affiliations expand

- PMID: 36972979
- DOI: [10.1136/thorax-2022-219683](https://doi.org/10.1136/thorax-2022-219683)

Free article

Abstract

Introduction: Incorporating spirometry into low-dose CT (LDCT) screening for lung cancer may help identify people with undiagnosed chronic obstructive pulmonary disease (COPD), although the downstream impacts are not well described.

Methods: Participants attending a Lung Health Check (LHC) as part of the Yorkshire Lung Screening Trial were offered spirometry alongside LDCT screening. Results were communicated to the general practitioner (GP), and those with unexplained symptomatic airflow obstruction (AO) fulfilling agreed criteria were referred to the Leeds Community Respiratory Team (CRT) for assessment and treatment. Primary care records were reviewed to determine changes to diagnostic coding and pharmacotherapy.

Results: Of 2391 LHC participants undergoing prebronchodilator spirometry, 201 (8.4%) fulfilled the CRT referral criteria of which 151 were invited for further assessment. Ninety seven participants were subsequently reviewed by the CRT, 46 declined assessment and 8 had already been seen by their GP at the time of CRT contact. Overall 70 participants had postbronchodilator spirometry checked, of whom 20 (29%) did not have AO. Considering the whole cohort referred to the CRT (but excluding those without AO

postbronchodilation), 59 had a new GP COPD code, 56 commenced new pharmacotherapy and 5 were underwent pulmonary rehabilitation (comprising 2.5%, 2.3% and 0.2% of the 2391 participants undergoing LHC spirometry).

Conclusions: Delivering spirometry alongside lung cancer screening may facilitate earlier diagnosis of COPD. However, this study highlights the importance of confirming AO by postbronchodilator spirometry prior to diagnosing and treating patients with COPD and illustrates some downstream challenges in acting on spirometry collected during an LHC.

Keywords: COPD epidemiology.

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Conflict of interest statement

Competing interests: Philip Crosbie received consulting fees from and has stock options in Everest Detection; received payment or honoraria from Astra Zeneca, Novartis, and North West eHealth.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS



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Observational Study

Respir Med

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. 2023 Jun;212:107219.

doi: 10.1016/j.rmed.2023.107219. Epub 2023 Mar 23.

"Extrafine single inhaler triple therapy effect on health status, lung function

and adherence in COPD patients: A Panhellenic prospective non-interventional study – The TRIBUNE study"

[Konstantinos Porpodis¹](#), [Konstantinos Bartziokas²](#), [Panagiotis Chatziapostolou³](#), [Aliko Korkontzelou⁴](#), [Panos Katerelos⁵](#), [Petros Efstathopoulos⁶](#), [Petros Bakakos⁷](#)

Affiliations expand

- PMID: 36965590
- DOI: [10.1016/j.rmed.2023.107219](https://doi.org/10.1016/j.rmed.2023.107219)

Free article

Abstract

The extrafine single inhaler triple therapy (efSITT) containing beclometasone dipropionate/formoterol fumarate/glycopyrronium 87/5/9 µg has proved to be efficacious in patients with Chronic Obstructive Pulmonary Disease (COPD) in randomized control trials. TRIBUNE study aimed to assess the efSITT effectiveness on health status, lung function, adherence and rescue medication use in COPD patients in Greece in a real-world setting. This was a 24-week prospective, multicenter, observational study in 1,195 patients with moderate/severe COPD and history of at least one exacerbation during the previous year despite dual therapy. Health status (COPD Assessment Test/CAT), lung function parameters and rescue medication use were recorded at baseline, 3 (Visit 2/V2) and 6 months (Visit 3/V3) after treatment. Adherence (Test of Adherence to Inhalers/TAI) and self-reported overall impression of health condition change (Visual Analogue Scale/VAS) were recorded at V2 and V3. Mean CAT score decreased from 20.9 points at V1, to 15.1 at V2 and 13 at V3 ($p < 0.001$, all pair comparisons). 85.9% of patients achieved a CAT decrease of minimal clinically important difference (MCID) or more (≥ 2) at V3, compared to V1. Mean FEV1 increased from 1.4 ± 0.5 L on V1, to 1.6 ± 0.5 L on V3 ($p < 0.001$, $N = 275$). The percentage of patients with "good adherence" increased from 58.4% (V2) to 64.0% (V3). Rescue medication use and VAS also significantly improved. The efSITT achieves improved outcomes on health status, lung function and rescue medication use as well as satisfactory adherence and patient-reported improvement of health condition, in moderate/severe COPD patients previously treated with a dual combination in a Greek real-world setting.

Keywords: Adherence; COPD; Extrafine; Health status; Real-world; Single inhaler triple therapy.

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Conflict of interest statement

Declaration of competing interest The authors have the following to declare: Konstantinos Porpodis reports no conflict of interest. Konstantinos Bartziokas reports no conflict of interest. Panagiotis Chatziapostolou reports financial support as principal investigator of this study by Chiesi Hellas S.A. Petros Efstathopoulos and Aliko Korkontzelou are employed by Chiesi Hellas S.A. Panos Katerelos reports financial support as statistical analyst of the present study. Petros Bakakos has nothing to declare in terms of the present study.

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Publication types, MeSH terms, Substancesexpand

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Respir Med

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. 2023 Jun;212:107223.

doi: 10.1016/j.rmed.2023.107223. Epub 2023 Mar 24.

[Trends in prevalence and the effects on hospital outcomes of dementia in patients hospitalized with acute COPD exacerbation](#)

[Javier de Miguel-Diez](#)¹, [Ana Lopez-de-Andres](#)², [Rodrigo Jimenez-Garcia](#)³, [Valentin Hernández-Barrera](#)⁴, [David Carabantes-Alarcon](#)³, [Jose J Zamorano-Leon](#)³, [Ricardo Omaña-Palanco](#)³, [Francisco Javier González-Barcala](#)⁵, [Natividad Cuadrado-Corrales](#)³

Affiliations expand

- PMID: 36965589
- DOI: [10.1016/j.rmed.2023.107223](https://doi.org/10.1016/j.rmed.2023.107223)

Free article

Abstract

Aims: To assess changes in prevalence and the effects on hospital outcomes of dementia among patients hospitalized with an acute exacerbation of chronic obstructive pulmonary disease (AE-COPD); and to evaluate sex-differences, as well as the impact of COVID-19 pandemic in this relationship.

Methods: We used a nationwide discharge database to select patients admitted with AE-COPD in Spain from 2011 to 2020. We identified those with any type of dementia, vascular dementia (VaD) or Alzheimer's disease (AD).

Results: We identified 658,429 hospitalizations with AE-COPD (4.45% had any type of dementia, 0.79% VaD and 1.57% AD). The presence of any type of dementia remained stable from 2011 to 2015, and increased significantly between 2016 and 2020. For VaD, the time trend showed no change until 2020, when a significant increment was found. The probability of AD decreased significantly overtime. The in-hospital mortality (IHM) among patients with any type of dementia remained stable overtime until 2020, when it increased significantly. Older age, higher comorbidity, COVID-19, and use of mechanical ventilation were variables associated to IHM. Women had lower risk of dying in the hospital than men in all subgroups.

Conclusions: After a previous period of stability, the prevalence of any type of dementia increased over the last 5 years of the study, although we identified different trends depending on the specific cause of dementia. The IHM remained stable overtime until 2020, when it increased, probably related to the COVID-19 pandemic. It is remarkable the protective effect of female sex for IHM.

Keywords: COPD; COVID-19; Dementia; In-hospital mortality; Prevalence; Sex-differences.

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Conflict of interest statement

Declaration of competing interest All authors declare that they have none Conflict of Interest.

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Publication types, MeSH termsexpand

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Respirology

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. 2023 Jun;28(6):525-532.

doi: 10.1111/resp.14488. Epub 2023 Mar 8.

[Impact of bronchoscopic lung volume reduction with endobronchial valves on dynamic hyperinflation: Results from the PIERCE study](#)

[Romane Fumat](#)¹, [Marion Dupuis](#)¹, [Siham Mallah](#)¹, [Valentin Heluain](#)¹, [Florent Favard](#)², [Yannick Simonneau](#)², [Matthieu Dusselier](#)², [Romain Barthes](#)¹, [Sandrine Pontier](#)¹, [Samia Collot](#)³, [Gavin Plat](#)¹, [Thomas Egenod](#)², [Nicolas Guibert](#)^{1,4}

Affiliations expand

- PMID: 36889358
- DOI: [10.1111/resp.14488](https://doi.org/10.1111/resp.14488)

Abstract

Background and objective: Dynamic hyperinflation (DH) is a major marker of exertional dyspnoea in severe emphysema. We hypothesized that bronchoscopic lung volume reduction (BLVR) using endobronchial valves (EBVs) decreases DH.

Methods: In this prospective bi-centre study from both Toulouse and Limoges Hospitals, we assessed DH during an incremental cycle ergometry before and 3 months after EBVs treatment. The primary objective was to observe the change in inspiratory capacity (IC) at isotime. Target lobe volume reduction (TLVR) and changes in residual volume (RV), forced expiratory volume in one-second (FEV₁), mMRC, 6 minutes walking distance (6MWD), BODE and other dynamic measures like tele-expiratory volume (EELV) were also analysed.

Results: Thirty-nine patients were included, of whom thirty-eight presented DH. IC and EELV at isotime significantly improved (+214 mL, $p = 0.004$; -713 mL, $p < 0.001$, respectively). Mean changes were +177 mL for FEV₁ (+19%, $p < 0.001$), -600 mL for RV ($p < 0.0001$), +33 m for 6MWD ($p < 0.0001$), respectively. Patients who responded on RV (>430 mL decrease) and FEV₁ (>12% gain) had better improvements compared to non-responders (+368 mL vs. +2 mL; +398 mL vs. -40 mL IC isotime, respectively). On the opposite, in patients who responded on DH (>200 mL IC isotime increase), changes in TLV (-1216 mL vs. -576 mL), FEV₁ (+261 mL vs. +101 mL), FVC (+496 mL vs. +128 mL) and RV (-805 mL vs. -418 mL) were greater compared to non-responders.

Conclusions: DH decreases after EBVs treatment, and this improvement is correlated with static changes.

Keywords: bronchoscopic lung volume reduction; dynamic hyperinflation; emphysema; endobronchial valves.

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- [23 references](#)

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MeSH termsexpand

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Am J Epidemiol

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. 2023 Jun 2;192(6):908-915.
doi: 10.1093/aje/kwad042.

Burden of Chronic Obstructive Pulmonary Disease Attributable to Tuberculosis: A Microsimulation Study

[Karla Therese L Sy](#), [Erzsébet Horváth-Puhó](#), [Henrik Toft Sørensen](#), [Szimonetta Komjáthiné Szépligeti](#), [Timothy C Heeren](#), [Reimar W Thomsen](#), [Matthew P Fox](#), [C Robert Horsburgh Jr](#)

- PMID: 36813297

- DOI: [10.1093/aje/kwad042](https://doi.org/10.1093/aje/kwad042)

Abstract

Tuberculosis (TB) is a risk factor for chronic obstructive pulmonary disease (COPD), but COPD is also a predictor of TB. The excess life-years lost to COPD caused by TB can potentially be saved by screening for and treating TB infection. We examined the number of life-years that could be saved by preventing TB and TB-attributable COPD. We compared the observed (no intervention) and counterfactual microsimulation models constructed from observed rates in the Danish National Patient Registry (covering all Danish hospitals between 1995 and 2014). In the Danish population of TB and COPD-naïve individuals ($n = 5,206,922$), 27,783 persons (0.5%) developed TB. Among those who developed TB, 14,438 (52.0%) developed TB with COPD. Preventing TB saved 186,469 life-years overall. The excess number of life-years lost to TB alone was 7.07 years per person, and the additional number of life-years lost among persons who developed COPD after TB was 4.86 years per person. The life-years lost to TB-associated COPD are substantial, even in regions where TB can be expected to be identified and treated promptly. Prevention of TB could prevent a substantial amount of COPD-related morbidity; the benefit of screening and treatment for TB infection is underestimated by considering morbidity from TB alone.

Keywords: Danish National Patient Registry; chronic obstructive pulmonary disease; microsimulation; tuberculosis; tuberculosis prevention.

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Observational Study

Crit Care Med

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. 2023 Jun 1;51(6):753-764.

doi: 10.1097/CCM.0000000000005807. Epub 2023 Feb 15.

Management of Acute Exacerbations of Chronic Obstructive Pulmonary Disease in the ICU: An Observational Study From the OUTCOMEREA Database, 1997–2018

[Louis-Marie Galerneau](#)^{1,2}, [Sébastien Bailly](#)², [Nicolas Terzi](#)^{1,2}, [Stéphane Ruckly](#)³, [Maité Garrouste-Orgeas](#)⁴, [Yves Cohen](#)⁵, [Vivien Hong Tuan Ha](#)⁶, [Marc Gainnier](#)⁷, [Shidasp Siami](#)⁸, [Claire Dupuis](#)⁹, [Michael Darmon](#)¹⁰, [Jean-Marie Forel](#)¹¹, [Guillaume Rigault](#)¹, [Christophe Adrie](#)¹², [Dany Goldgran-Toledano](#)¹³, [Virginie Laurent](#)¹⁴, [Etienne de Montmollin](#)^{15,16}, [Laurent Argaud](#)¹⁷, [Jean Reignier](#)¹⁸, [Jean-Louis Pepin](#)², [Jean-François Timsit](#)^{15,16}, [OUTCOMEREA Network](#)

Affiliations expand

- PMID: 36790209
- DOI: [10.1097/CCM.0000000000005807](https://doi.org/10.1097/CCM.0000000000005807)

Abstract

Objectives: Our aim was to describe changes in the management of acute exacerbations of chronic obstructive pulmonary disease (AECOPD) by ICUs and patient outcomes.

Design: We extracted data from the OutcomeRea database concerning patients admitted for AECOPD between 1997 and 2018. We analyzed trends in the use of ventilatory support, corticosteroid therapy, antibiotic therapy, and patient survival.

Setting: ICUs at 32 French sites.

Patients: One thousand eight hundred sixteen patients in the database had a diagnosis of AECOPD.

Interventions: None.

Measurements and main results: Over time, there was a reduction in the prescription of corticosteroids and antibiotics. In a time-series analysis, these changes in practice were not linked with ICU mortality. The proportion of patients treated with invasive mechanical ventilation (IMV) also gradually declined (from 51% between 1997 and 2002 to 35% between 2013 and 2018) with an association between decrease in IMV use and reduction in ICU mortality in a time series analysis. Rates of noninvasive ventilation (NIV) failure decreased with an increase in NIV use to support weaning from IMV. There was a reduction in the median ICU length of stay (from 8 d in 1997-2002 to 4 d in 2013-2018) and in the median total duration of hospitalization (from 23 d in 1997-2002 to 14 d in 2013-2018). We observed an improvement in prognosis, with decreases in overall hospital mortality (from 24% between 1997 and 2002 to 15% between 2013 and 2018), ICU mortality (from 14% between 1997 and 2002 to 10% between 2013 and 2018), and 90-day mortality (from 41% between 1997 and 2002 to 22% between 2013 and 2018).

Conclusions: The length of stay and mortality of patients with AECOPD admitted to ICUs has decreased over the last 20 years, with a wider use of NIV and a reduction in antibiotic and corticosteroid prescriptions.

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Conflict of interest statement

Dr. Terzi received funding from Pfizer for attending meetings and/or travel. Dr. Hong Tuan Ha disclosed work for hire. The remaining authors have disclosed that they do not have any potential conflicts of interest.

- [42 references](#)

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[Review](#)

Br J Radiol

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. 2023 Jun 1;96(1146):20220630.

doi: 10.1259/bjr.20220630. Epub 2023 Mar 3.

MR imaging of the airways

[Juergen Biederer](#) ^{1 2 3 4}

Affiliations expand

- PMID: 36752590
- PMCID: [PMC10230378](#)
- DOI: [10.1259/bjr.20220630](#)

Free PMC article

Abstract

The need for airway imaging is defined by the limited sensitivity of common clinical tests like spirometry, lung diffusion (DLCO) and blood gas analysis to early changes of peripheral airways and to inhomogeneous regional distribution of lung function deficits. Therefore, X-ray and computed tomography (CT) are frequently used to complement the standard tests. As an alternative, magnetic resonance imaging (MRI) offers radiation-free lung imaging, but at lower spatial resolution. Non-contrast enhanced MRI shows healthy

airways down to the first subsegmental level/4th order (CT: eighth). Bronchiectasis can be identified by wall thickening and fluid accumulation. Smaller airways become visible, when altered by peribronchiolar inflammation or mucus retention (tree-in-bud sign). The strength of MRI is functional imaging. Dynamic, time-resolved MRI directly visualizes expiratory airway collapse down to the lobar level (CT: segmental level). Obstruction of even smaller airways becomes visible as air trapping on the expiratory scans. MRI with hyperpolarized noble gases (³He, ¹²⁹Xe) directly shows the large airways and peripheral lung ventilation. Dynamic contrast-enhanced MRI (DCE MRI) indirectly shows airway dysfunction as perfusion deficits resulting from hypoxic vasoconstriction of the dependent lung volumes. Further promising scientific approaches such as non-contrast enhanced, ventilation-/perfusion-weighted MRI from periodic signal changes of respiration and blood flow are in development. In summary, MRI of the lungs and airways excels with its unique combination of morphologic and functional imaging capacities for research (*e.g.*, in chronic obstructive lung disease or asthma) as well as for clinical imaging (*e.g.*, in cystic fibrosis).

Conflict of interest statement

Funding Open Access funding enabled and organized by Projekt DEAL.

- [64 references](#)
- [6 figures](#)

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[Case Reports](#)

Arch Bronconeumol

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. 2023 Jun;59(6):403-405.

doi: 10.1016/j.arbres.2023.01.005. Epub 2023 Jan 19.

Relationship Between the Summation of GesEPOC High-Risk Factors and the Presence of Cardiovascular Disease

[Article in English, Spanish]

[Juan Marco Figueira-Gonçalves¹](#), [José María Hernández-Pérez²](#), [Carlos Cabrera-Lopez³](#), [Aurelio Luis Wangüemert-Pérez⁴](#), [Ignacio García-Talavera²](#), [Yolanda Ramallo-Fariña⁵](#), [Rafael Golpe⁶](#), [Luis Manuel González-García⁷](#)

Affiliations expand


- PMID: 36707328
- DOI: [10.1016/j.arbres.2023.01.005](https://doi.org/10.1016/j.arbres.2023.01.005)

No abstract available

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Randomized Controlled Trial

J Crit Care

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. 2023 Jun;75:154250.

doi: 10.1016/j.jcrc.2022.154250. Epub 2023 Jan 19.

A randomized controlled trial comparing non-invasive ventilation delivered using neurally adjusted ventilator assist (NAVA) or adaptive support ventilation (ASV) in patients with acute exacerbation of chronic obstructive pulmonary disease

[Bharath A Chhabria](#)¹, [Kuruswamy Thurai Prasad](#)¹, [Sahajal Dhooria](#)¹, [Valliappan Muthu](#)¹, [Ashutosh Nath Aggarwal](#)¹, [Ritesh Agarwal](#)¹, [Raghava Rao Gandra](#)¹, [Inderpaul Singh Sehgal](#)²

Affiliations expand

- PMID: 36680884
- DOI: [10.1016/j.jcrc.2022.154250](https://doi.org/10.1016/j.jcrc.2022.154250)

Abstract

Purpose: No study has compared neurally adjusted ventilator assist (NAVA) with adaptive support ventilation (ASV) during non-invasive ventilation (NIV) in subjects with acute exacerbation of chronic obstructive pulmonary disease (AECOPD).

Materials and methods: In this randomized controlled trial, we compared NAVA-NIV with ASV-NIV for delivering NIV in consecutive subjects with AECOPD. The primary outcome was NIV failure rate (invasive mechanical ventilation). The key secondary outcomes were number of NIV manipulations, asynchrony index, and 90-day mortality.

Results: We enrolled 76 subjects (NAVA-NIV, n = 36, ASV-NIV, n = 40; 74% males) with a mean \pm SD age of 61.4 ± 8.2 years. We found no difference in NIV failure rates between the two arms (NAVA-NIV vs. ASV-NIV; 8/36 [22.2%] vs. 8/40 [20%]; p = 0.83). The median physician manipulations for NIV were significantly less in the ASV-NIV arm than in the NAVA-NIV arm (2 [0.8-4] vs. 3 [2-5]; p = 0.014) during the initial 24-h. We found no difference in median asynchrony index (NAVA-NIV vs. ASV-NIV, 16.6% vs. 16.4%, p = 0.5) and 90-day mortality (22.2% vs. 17.5%, p = 0.67).

Conclusion: The use of NAVA-NIV was not superior to ASV-NIV in reducing NIV failure rates in AECOPD. Both NAVA-NIV and ASV-NIV had similar asynchrony index and 90-day mortality.

Trial registry: [www.](#)

Clinicaltrials: [gov \(NCT04414891\)](#).

Keywords: BIPAP; Mechanical ventilation; NAVA; NIV; PSV; Respiratory failure.

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SUPPLEMENTARY INFO

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Ann Emerg Med

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. 2023 Jun;81(6):679-690.

doi: 10.1016/j.annemergmed.2022.10.013. Epub 2023 Jan 18.

[Out-of-Hospital Presentation and Management of Asthma and Chronic Obstructive Pulmonary Disease Exacerbations in the United States: A Nationwide Retrospective Cohort Study](#)

[Gregory A Peters](#)¹, [Rebecca E Cash](#)², [Scott A Goldberg](#)³, [Alexander J Ordoobadi](#)⁴, [Carlos A Camargo Jr](#)⁵

[Affiliations expand](#)

- PMID: 36669918
- DOI: [10.1016/j.annemergmed.2022.10.013](https://doi.org/10.1016/j.annemergmed.2022.10.013)

Abstract

Study objective: To describe the demographic, clinical, and emergency medical service (EMS) response characteristics associated with EMS activations for asthma and chronic obstructive pulmonary disease (COPD) exacerbations in the US.

Methods: Using a nationwide set of out-of-hospital patient care report data from 2018 to 2019, we analyzed 9-1-1 EMS activations where asthma/COPD exacerbation was indicated by symptom, impression, or treatment provided. We excluded patients with ages less than 2 years or unknown, nonemergency transports, and encounters with any indication of anaphylaxis. Demographic, clinical, and EMS response characteristics were described for pediatric and adult patients with asthma/COPD exacerbations.

Results: A total of 1,336,988 asthma/COPD exacerbations were included, comprising 5% of qualifying 9-1-1 scene activations from 2018 to 2019. Most patients were adults (96%). Most adult patients were female (55%), whereas most pediatric patients were male (58%). Most activations occurred in urban settings (82%), particularly in pediatric patients (90%). Most asthma/COPD exacerbations were managed by advanced life support units (94%). Inhaled bronchodilators and systemic corticosteroid therapy were administered to 75% and 14% of all patients, respectively. Adults more often had oxygen saturation <92% (43% vs 20% of pediatric patients) and were more often treated with assisted ventilation (9% vs 1%).

Conclusion: In this large nationwide sample of 9-1-1 activations treated and transported by EMS, 5% were for asthma/COPD exacerbation. Future work should focus on evidence-based standardization of EMS protocols and practice for asthma/COPD exacerbations to improve the quality of EMS care.

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41

Review

J Clin Periodontol

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. 2023 Jun;50(6):842-887.

doi: 10.1111/jcpe.13767. Epub 2023 Feb 5.

The association between respiratory diseases and periodontitis: A systematic review and meta-analysis

[Ana Molina](#)¹, [Olivier Huck](#)^{2,3}, [David Herrera](#)¹, [Eduardo Montero](#)¹

Affiliations expand

- PMID: 36606394
- DOI: [10.1111/jcpe.13767](https://doi.org/10.1111/jcpe.13767)

Abstract

Aim: To evaluate (1) whether periodontitis has an influence on the prevalence/incidence of respiratory diseases (chronic obstructive pulmonary disease [COPD], asthma, community-acquired pneumonia [CAP], obstructive sleep apnoea [OSA] and COVID-19), and (2) what is the impact of periodontal therapy on the onset or progression of respiratory diseases.

Materials and methods: An electronic search was performed on Pubmed, Cochrane Library and Scopus databases up to October 2021, to identify studies answering the PECOS and PICOS questions.

Results: Seventy-five articles were selected. Meta-analyses identified statistically significant associations of periodontitis with COPD ($n_{\text{studies}} = 12$, odds ratio [OR] = 1.28, 95% confidence interval [CI] [1.16; 1.42], $p < .001$), and OSA ($n_s = 6$, OR = 1.65, 95% CI [1.21; 2.25], $p = .001$), but not for asthma ($n_s = 9$, OR = 1.53, 95% CI [0.82; 2.86], $p = .181$). For acute conditions, two studies were found for CAP, while for COVID-19, significant

associations were found for the need of assisted ventilation ($n_s = 2$, OR = 6.24, 95% CI [2.78; 13.99], $p < .001$) and COVID-related mortality ($n_s = 3$, OR = 2.26, 95% CI [1.36, 3.77], $p = .002$). Only four intervention studies were found, showing positive effects of periodontal treatment on COPD, asthma and CAP.

Conclusions: A positive association between periodontitis and COPD, OSA and COVID-19 complications has been found, while there is a lack of intervention studies.

Keywords: COVID-19; chronic obstructive pulmonary disease; community-acquired pneumonia; obstructive sleep apnoea; periodontitis.

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- [108 references](#)

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[Review](#)

Clin Nurs Res

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. 2023 Jun;32(5):914-928.

doi: 10.1177/10547738221141224. Epub 2022 Dec 20.

[COPD-Related Fatigue: A Scoping Review](#)

[Lindsey A Clark](#)¹, [Robert Reed](#)², [Kirsten N Corazzini](#)¹, [Shijun Zhu](#)¹, [Cynthia Renn](#)¹, [N Jennifer Klinedinst](#)¹

Affiliations [expand](#)

- PMID: 36540028
- DOI: [10.1177/10547738221141224](https://doi.org/10.1177/10547738221141224)

Abstract

Millions of people worldwide have chronic obstructive pulmonary disease (COPD), and one of the most common and troublesome symptoms that must be managed is fatigue. While there are existing interventions to address COPD-related fatigue, not all patients experience benefit. A better understanding of the factors associated with COPD-fatigue could elucidate new approaches to address COPD-related fatigue, thereby offering relief to a greater number of patients. The purpose of this review was to identify the physiologic, psychologic, and situational factors associated with COPD-related fatigue. A total of four databases, PubMed, CINAHL, Scopus, and Google Scholar, were searched. Those that were peer reviewed, in English, and published between 2000 and 2021, were included in the review. A total of 25 articles were included in this scoping review. The following factors were related to fatigue in COPD: dyspnea, pain, anxiety, depression, and sleep. Fatigue is a debilitating symptom with factors influential to the symptom and outcomes. Research is indicated to explore targeted and personalized interventions addressing the factors related to fatigue to mitigate this widespread symptom.

Keywords: chronic obstructive pulmonary disease; correlate; fatigue; review.

SUPPLEMENTARY INFO

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[Editorial](#)

Arch Bronconeumol

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. 2023 Jun;59(6):350-351.

doi: 10.1016/j.arbres.2022.09.014. Epub 2022 Sep 28.

When and When Not to Prescribe Home Oxygen in COPD

[Article in English, Spanish]

[Yves Lacasse](#)¹, [François Maltais](#)²

Affiliations [expand](#)

- PMID: 36280434
- DOI: [10.1016/j.arbres.2022.09.014](https://doi.org/10.1016/j.arbres.2022.09.014)

No abstract available

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Sleep Breath

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. 2023 Jun;27(3):1117-1118.

doi: 10.1007/s11325-022-02712-0. Epub 2022 Sep 26.

Efficacy and adherence to chronic non-invasive ventilation in an outpatient setting

[Ana Luísa Ramos](#)¹, [Tiago Pinto](#)², [Miguel Gonçalves](#)^{2 3 4 5}, [Filipa Carriço](#)², [Daniela Rodrigues](#)², [Mafalda Van Zeller](#)^{2 3 4}, [Marta Drummond](#)^{2 3 4}

Affiliations expand

- PMID: 36161383
- DOI: [10.1007/s11325-022-02712-0](https://doi.org/10.1007/s11325-022-02712-0)

No abstract available

- [3 references](#)

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Sleep Breath

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. 2023 Jun;27(3):1049-1055.

doi: 10.1007/s11325-022-02702-2. Epub 2022 Sep 3.

Nocturnal nasal high-flow oxygen therapy in elderly patients with concomitant chronic obstructive pulmonary disease and obstructive sleep apnea

[Lucia Spicuzza](#)^{1,2}, [Gianluca Sambataro](#)³, [Matteo Schisano](#)³, [Giuseppe Ielo](#)³, [Salvatore Mancuso](#)³, [Carlo Vancheri](#)³

Affiliations expand

- PMID: 36057738
- PMCID: [PMC10227143](#)
- DOI: [10.1007/s11325-022-02702-2](#)

Free PMC article

Abstract

Purpose: The coexistence of obstructive sleep apnea (OSA) and chronic obstructive pulmonary disease (COPD) is known as "overlap syndrome" (OS). Patients with OS are usually older than patients with OSA alone, suffer from more profound oxygen desaturation during the obstructive events often accompanied by sustained nocturnal hypoventilation. Although oxygen-enriched positive airway pressure (PAP) is the treatment of choice in these patients, this therapy is often poorly tolerated particularly by the elderly. The aim of this study was to assess the usefulness of nocturnal oxygen therapy via nasal high flow (NHF-OT) as a possible alternative to PAP in patients with OS.

Methods: Patients > 65 years old with OS and nocturnal respiratory failure (time spent below SaO₂ 90% (T90) > 30%) had cardio-respiratory monitoring performed at baseline, during NHF-OT, or during conventional oxygen therapy (COT).

Results: A total of 40 patients were enrolled in the study. NHF-OT significantly reduced the apnea-hypopnea index (AHI) in all patients compared to baseline and COT. The mean basal AHI was 25.4 ± 8.6. During COT and NHF-OT, the AHI was 19.4 ± 7 and 5.4 ± 4.6, respectively (P < 0.001) and 19 patients reached an AHI < 5 during NHF-OT. The mean nocturnal SaO₂% was 86.2 ± 2.6 at baseline and at equivalent FiO₂ it significantly increased to 91.8 ± 2.4 during COT and to 93.9 ± 2.5 during NHF-OT (P < 0.001). The T90% was 48.7 ± 20.1 at baseline, 16.8 ± 11.7 during COT, and 8.8 ± 8.0 during NHF-OT (P < 0.001).

Conclusions: In elderly patients with OS, nocturnal treatment with NHF-OT significantly reduces obstructive episodes and improves oxygenation. As the treatment is generally well tolerated compared to PAP, NHF-OT may be a possible alternative therapy in this subgroup of patients.

Keywords: COPD; High-flow nasal cannula; Nocturnal hypoxemia; Obstructive sleep apnea; Overlap syndrome.

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Conflict of interest statement

The authors declare no competing interests.

- [36 references](#)
- [1 figure](#)

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

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Thorax

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. 2023 Jun;78(6):559-565.

doi: 10.1136/thoraxjnl-2021-218315. Epub 2022 Jul 1.

[The relationship between interstitial lung abnormalities, mortality, and multimorbidity: a cohort study](#)

[Jason Leigh Sanders](#)^{#1}, [Gisli Axelsson](#)^{#2,3}, [Rachel Putman](#)⁴, [Aravind Menon](#)⁴, [Josée Dupuis](#)⁵, [Hanfei Xu](#)⁵, [Shuai Wang](#)⁶, [Joanne Murabito](#)^{7,8}, [Ramachandran Vasan](#)^{7,8}, [Tetsuro Araki](#)⁹, [Mizuki Nishino](#)¹⁰, [George R Washko](#)⁴, [Hiroto Hatabu](#)^{10,11}, [George O'Connor](#)^{8,12}, [Gunnar Gudmundsson](#)^{2,13}, [Vilmundur Gudnason](#)^{2,3}, [Gary M Hunninghake](#)¹⁴

Affiliations expand

- PMID: 35777957
- DOI: [10.1136/thoraxjnl-2021-218315](https://doi.org/10.1136/thoraxjnl-2021-218315)

Abstract

Background: Interstitial lung abnormalities (ILAs) are associated with increased mortality. It is unclear whether multimorbidity accounts for the mortality association or how strongly ILA is associated with mortality relative to other common age-associated diseases. We determined the association of ILA with all-cause mortality adjusted for multimorbidity, compared mortality associated with ILA and prevalent cardiovascular disease (CVD), diabetes mellitus, chronic kidney disease, chronic obstructive pulmonary disease and cancer and also determined the association between ILA and these diseases.

Methods: We measured ILA (none, indeterminant, definite) using blinded reads of CT images, prevalent chronic diseases and potential confounders in two observational cohorts, the Framingham Heart Study (FHS) (n=2449) and Age, Gene/Environment Susceptibility - Reykjavik Study (AGES-Reykjavik) (n=5180). We determined associations with mortality using Cox proportional hazards models and between ILA and diseases with multinomial logistic regression.

Results: Over a median (IQR) follow-up of 8.8 (1.4) years in FHS and 12.0 (7.7) years in AGES-Reykjavik, in adjusted models, ILAs were significantly associated with increased mortality (HR, 95% CI 1.95, 1.23 to 3.08, p=0.0042, in FHS; HR 1.60, 1.41 to 1.82, p<0.0001, in AGES-Reykjavik) adjusted for multimorbidity. In both cohorts, the association of ILA with mortality was of similar magnitude to the association of most other diseases. In adjusted models, ILAs were associated only with prevalent kidney disease (OR, 95% CI 1.90, 1.01 to 3.57, p=0.0452) in FHS and with prevalent CVD (OR 1.42, 1.12 to 1.81, p=0.0040) in AGES-Reykjavik.

Conclusions: ILAs were associated with mortality adjusted for multimorbidity and were similarly associated with increased mortality compared with several common chronic diseases. ILAs were not consistently associated with the prevalence of these diseases themselves.

Keywords: clinical epidemiology; idiopathic pulmonary fibrosis; imaging/CT MRI etc.

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Conflict of interest statement

Competing interests: JLS reports personal fees for consultancy from Apneo Therapeutics and Decimal.health, outside the submitted work. At the time of publication, JLS was employed by Vertex Pharmaceuticals. MN reports personal fees for consultancy from Daiichi Sankyo and AstraZeneca; honoraria from Roche; and grants from Merck, AstraZeneca, Canon Medical Systems and NIH (R01CA203636, U01CA209414, R01HL111024), outside the submitted work. HH reports grants from Canon Medical System Inc. and Konica-Minolta Inc., personal fees for consultancy from Mitsubishi Chemical Inc. and personal fees for advisory board work from Canon Medical System Inc., outside the submitted work. JM reports fees to her institution on her behalf for guest lecture/consultant outside the submitted work from Merck. GMH reports personal fees from Genentech, Boehringer Ingelheim, The Gerson Lehrman Group and Mitsubishi Chemical, outside the submitted work.

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[Review](#)

Int J Nurs Pract

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. 2023 Jun;29(3):e13062.

doi: 10.1111/ijn.13062. Epub 2022 May 11.

[Effects of home-based telehealth on the physical condition and psychological status of patients with chronic obstructive pulmonary disease: A systematic review and meta-analysis](#)

[Chun-Yu Song](#)¹, [Xin Liu](#)¹, [Ya-Qing Wang](#)¹, [Hui-Ping Cao](#)², [Zhuo Yang](#)³, [Rui-Chen Ma](#)¹, [Ying-Ying Yin](#)¹, [Jiao Xie](#)¹

Affiliations expand

- PMID: 35545098

- DOI: [10.1111/ijn.13062](https://doi.org/10.1111/ijn.13062)

Abstract

Aims: This systematic review and meta-analysis aimed to evaluate the effects of home-based telehealth compared with usual care on six-minute walking distance (6MWD), health-related quality of life, anxiety and depression in patients with chronic obstructive pulmonary disease.

Methods: We identified randomized controlled trials through a systematic multidatabase search. Titles and abstracts were assessed for relevance. Two authors independently extracted data and assessed the risk of bias and quality of evidence. Meta-analyses were conducted using Review Manager and Stata.

Results: We included 32 randomized controlled trials (n = 5232). Devices used for home-based telehealth interventions included telephones, videos, and combined devices. The quality of the evidence was downgraded due to high risk of bias, imprecision, and inconsistency. Home-based telehealth significantly increased 6MWD by 35 m (SD = 30.42) and reduced symptom burden by 3 points (SD = -2.30) on the COPD assessment test compared with usual care. However, no significant differences in anxiety and depression were noted between the home-based telehealth group and the standard care group. In subgroup analysis, home-based telehealth significantly improved 6MWD and health status after 6-12 months and >12 months.

Conclusion: Low quality evidence showed that home-based telehealth interventions reduce symptom burden and increase walking distance to a clinically meaningful extent in patients with COPD. However, no effects on depression and anxiety were observed.

Keywords: chronic obstructive; meta-analysis; pulmonary disease; systematic review; telehealth.

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Chronic Illn

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. 2023 Jun;19(2):339-353.

doi: 10.1177/17423953211073580. Epub 2022 Feb 4.

[The experience of hospitalization in people with advanced chronic obstructive pulmonary disease: A qualitative, phenomenological study](#)

[Barathi Bakthavatsalu](#)¹, [Catherine Walshe](#)², [Jane Simpson](#)¹

Affiliations expand

- PMID: 35118898
- PMCID: [PMC9999271](#)
- DOI: [10.1177/17423953211073580](#)

Free PMC article

Abstract

Objectives: People with advanced chronic obstructive pulmonary disease (COPD) are frequently hospitalized, reporting high physical, psychological and spiritual suffering.

Existing research focused on discrete aspects of hospitalization, such as care or treatment, yet lacks a complete picture of the phenomenon. The aim of this study is to understand the lived experience of hospitalization in people with advanced COPD.

Methods: A qualitative, descriptive phenomenological approach was employed to study the phenomenon of hospitalization for people with advanced COPD. Unstructured interviews were conducted during hospitalization at a tertiary care hospital in India, in 2017, audio-recorded, and then transcribed. Giorgi's descriptive phenomenological analysis method guided the analysis.

Results: Fifteen people with advanced COPD participated. Emergency admissions were common because of acute breathlessness, leading to repeated hospitalizations. Hospitalization gave a sense of safety but, despite this, people preferred to avoid hospitalization. Care influenced trust in hospitalization and both shaped the experience of hospitalization. Multi-dimensional suffering was central to the experience and was described across physical, psychological and spiritual domains.

Discussion: Hospitalization was identified largely as a negative experience due to the perception of continued suffering. Integrating palliative care into the routine care of people with advanced COPD may enable improvements in care.

Keywords: acute breathlessness; advanced COPD; phenomenology; qualitative study; repeated hospitalization.

Conflict of interest statement

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

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- [1 figure](#)

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J Pharm Pract

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. 2023 Jun;36(3):628-639.

doi: 10.1177/08971900211053771. Epub 2021 Oct 26.

Narrative Literature Review Guided Approach of Inhaled Corticosteroid de-escalation in Chronic Obstructive Pulmonary Disease

[Anamarie Tomaich](#)^{1,2}, [Shawnee Klatt](#)^{1,3}, [Michael W Nagy](#)^{1,2}

Affiliations expand

- PMID: 34697964
- DOI: [10.1177/08971900211053771](https://doi.org/10.1177/08971900211053771)

Abstract

Objective: To review the 2020 Global Initiative for Chronic Obstructive Lung Disease (GOLD) report recommendations and create an algorithm to assist clinicians in determining which chronic obstructive pulmonary disease (COPD) patients qualify for inhaled corticosteroid (ICS) de-escalation. **Data Sources:** A literature search of MEDLINE/PubMed from 2002 to August 2021 was conducted using the search terms inhaled corticosteroids, chronic obstructive pulmonary disease, and de-escalation and review of the reference lists of identified articles for pertinent citations. **Study Selection and Data Extraction:** Relevant studies and articles were included if they focused on the utilization of ICS in COPD. **Data Synthesis:** The 2020 GOLD report only recommends triple therapy with ICS, long acting beta agonists, and long acting muscarinic antagonists for patients with frequent exacerbations, frequent hospitalizations, or elevated blood eosinophil counts. Despite this clear framework, patients are prescribed ICS without these characteristics. Available evidence suggests that these patients can be de-escalated from ICS therapy without concern for worsening lung function or exacerbations. **Relevance to Patient Care and Clinical Practice:** Patients with COPD may be experiencing more risk than benefit on ICS therapy. Clinicians should be knowledgeable on how to evaluate patient therapy for

appropriateness and know how to safely deprescribe ICS given their limited efficacy in many COPD patients. **Conclusion:** There remains no specific guidance on how to de-escalate patients off an ICS when the therapy is not indicated. Use of clinical evidence with stepwise algorithms can be models to approach de-escalation of ICS in patients with COPD.

Keywords: chronic obstructive pulmonary disease; de-escalation; deprescribing; inhaled corticosteroids; medication optimization.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

Sage Journals UNIMORE

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

PLoS One

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. 2023 Jun 2;18(6):e0285923.

doi: 10.1371/journal.pone.0285923. eCollection 2023.

Medium and long-term prognosis in hospitalised older adults with multimorbidity. A prospective cohort study

[Siena Molina](#)¹, [Ana Martinez-Urrea](#)¹, [Komal Malik](#)¹, [Ginebra Libori](#)¹, [Helena Monzon](#)¹, [Pablo Martínez-Cambor](#)^{2,3}, [Pere Almagro](#)¹

Affiliations expand

- PMID: 37267235

- PMCID: [PMC10237495](#)
- DOI: [10.1371/journal.pone.0285923](#)

Abstract

Background: Data about long-term prognosis after hospitalisation of elderly multimorbid patients remains scarce.

Objectives: Evaluate medium and long-term prognosis in hospitalised patients older than 75 years of age with multimorbidity. Explore the impact of gender, age, frailty, physical dependence, and chronic diseases on mortality over a seven-year period.

Methods: We included prospectively all patients hospitalised for medical reasons over 75 years of age with two or more chronic illnesses in a specialised ward. Data on chronic diseases were collected using the Charlson comorbidity index and a questionnaire for disorders not included in this index. Demographic characteristics, Clinical Frailty Scale, Barthel index, and complications during hospitalisation were collected.

Results: 514 patients (46% males) with a mean age of 85 (\pm 5) years were included. The median follow-up was 755 days (interquartile range 25-75%: 76-1,342). Mortality ranged from 44% to 68%, 82% and 91% at one, three, five, and seven years. At inclusion, men were slightly younger and with lower levels of physical impairment. Nevertheless, in the multivariate analysis, men had higher mortality ($p < 0.001$; H.R.:1.43; 95% C.I.95%:1.16-1.75). Age, Clinical Frailty Scale, Barthel, and Charlson indexes were significant predictors in the univariate and multivariate analysis (all $p < 0.001$). Dementia and neoplastic diseases were statistically significant in the unadjusted but not the adjusted model. In a cluster analysis, three patterns of patients were identified, with increasing significant mortality differences between them ($p < 0.001$; H.R.:1.67; 95% CI: 1.49-1.88).

Conclusions: In our cohort, individual diseases had a limited predictive prognostic capacity, while the combination of chronic illness, frailty, and physical dependence were independent predictors of survival.

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Conflict of interest statement

The authors have declared that no competing interests exist.

- [54 references](#)

- [4 figures](#)

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BMC Endocr Disord

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. 2023 Jun 2;23(1):127.

doi: 10.1186/s12902-023-01362-x.

Multimorbidity at time of death among persons with type 2 diabetes: a population-based study in Ontario, Canada

[Laura C Rosella](#)^{1,2,3,4}, [Ednah Negatu](#)⁵, [Kathy Kornas](#)⁵, [Casey Chu](#)⁶, [Limei Zhou](#)⁷, [Emmalin Buajitti](#)^{5,7}

Affiliations expand

- PMID: 37264336
- PMID: [PMC10236755](#)
- DOI: [10.1186/s12902-023-01362-x](#)

Free PMC article

Abstract

Objective: Individuals with Type 2 Diabetes are likely to experience multimorbidity and accumulate multiple chronic conditions over their life. We aimed to identify causes of death and chronic conditions at the time of death in a population-based cohort, and to analyze variations in the presence of diabetes at the time of death overall and across income and immigrant status.

Research design and methods: We conducted a retrospective cohort study of 2,199,801 adult deaths from 1992 to 2017 in Ontario, Canada. We calculated the proportion of decedents with chronic conditions at time of death and causes of death. The risk of diabetes at the time of death was modeled across sociodemographic variables with a log binomial regression adjusting for sex, age, immigrant status, area-level income, comorbidities and time.

Results: The leading causes of death in the cohort were cardiovascular and cancer. Decedents with diabetes had a higher prevalence of most chronic conditions than decedents without diabetes, including hypertension, osteo and other arthritis, chronic coronary syndrome, mood disorder, and congestive heart failure. The risk of diabetes at the time of death was 19% higher in immigrants (95%CI 1.18-1.20) and 15% higher in refugees (95%CI 1.12-1.18) compared to long-term residents, and 19% higher in the lowest income quintile (95%CI 1.18-1.20) relative to the highest income quintile, after adjusting for other covariates.

Conclusions: Individuals with diabetes have a greater multimorbidity burden at the time of death, underscoring the importance of multiple chronic disease management among those living with diabetes and further considerations of the social determinants of health.

Keywords: Chronic conditions; Immigrants; Mortality; Multimorbidity; Socioeconomic status.

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Conflict of interest statement

None of the authors have any competing interests to declare.

- [44 references](#)
- [2 figures](#)

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Crit Care Med

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. 2023 May 29.

doi: 10.1097/CCM.0000000000005936. Online ahead of print.

[Responsiveness of Critically Ill Adults With Multimorbidity to Rehabilitation Interventions: A Patient-Level Meta-Analysis Using Individual Pooled Data From Four Randomized Trials](#)

[Jennifer R A Jones](#)^{1 2 3}, [Amalia Karahalios](#)⁴, [Zudin A Puthuchear](#)^{5 6}, [Michael J Berry](#)⁷, [D Clark Files](#)^{8 9}, [David M Griffith](#)^{10 11}, [Luke A McDonald](#)², [Peter E Morris](#)¹², [Marc Moss](#)¹³, [Amy Nordon-Craft](#)¹⁴, [Timothy Walsh](#)^{10 15 16}, [Sue Berney](#)^{1 2}, [Linda Denehy](#)^{1 17 18}

Affiliations expand

- PMID: 37246922
- DOI: [10.1097/CCM.0000000000005936](https://doi.org/10.1097/CCM.0000000000005936)

Abstract

Objective: To explore if patient characteristics (pre-existing comorbidity, age, sex, and illness severity) modify the effect of physical rehabilitation (intervention vs control) for the coprimary outcomes health-related quality of life (HRQoL) and objective physical performance using pooled individual patient data from randomized controlled trials (RCTs).

Data sources: Data of individual patients from four critical care physical rehabilitation RCTs.

Study selection: Eligible trials were identified from a published systematic review.

Data extraction: Data sharing agreements were executed permitting transfer of anonymized data of individual patients from four trials to form one large, combined dataset. The pooled trial data were analyzed with linear mixed models fitted with fixed effects for treatment group, time, and trial.

Data synthesis: Four trials contributed data resulting in a combined total of 810 patients (intervention n = 403, control n = 407). After receiving trial rehabilitation interventions, patients with two or more comorbidities had HRQoL scores that were significantly higher and exceeded the minimal important difference at 3 and 6 months compared with the similarly comorbid control group (based on the Physical Component Summary score (Wald test $p = 0.041$). Patients with one or no comorbidities who received intervention had no HRQoL outcome differences at 3 and 6 months when compared with similarly comorbid control patients. No patient characteristic modified the physical performance outcome in patients who received physical rehabilitation.

Conclusions: The identification of a target group with two or more comorbidities who derived benefits from the trial interventions is an important finding and provides direction for future investigations into the effect of rehabilitation. The multimorbid post-ICU population may be a select population for future prospective investigations into the effect of physical rehabilitation.

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Conflict of interest statement

Dr. Puthuchery reports honorarium and speaker fees from Baxter, Faraday Pharmaceuticals, Lyric Pharmaceuticals, Fresenius-Kabi, Nestle, Orion, GlaxoSmithKline, and Nutritica. Dr. Files reports consulting fees from Cytovale. The remaining authors have disclosed that they do not have any potential conflicts of interest.

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Lancet Healthy Longev

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. 2023 Jun;4(6):e247-e256.

doi: 10.1016/S2666-7568(23)00057-0. Epub 2023 May 11.

Effects of physical exercise on physical function in older adults in residential care: a systematic review and network meta-analysis of randomised controlled trials

[Pedro L Valenzuela](#)¹, [Gonzalo Saco-Ledo](#)², [Javier S Morales](#)³, [Daniel Gallardo-Gómez](#)⁴, [Félix Morales-Palomo](#)⁵, [Susana López-Ortiz](#)⁶, [Beatriz Rivas-Baeza](#)⁷, [Adrián Castillo-García](#)⁸, [David Jiménez-Pavón](#)⁹, [Alejandro Santos-Lozano](#)¹⁰, [Borja Del Pozo Cruz](#)¹¹, [Alejandro Lucia](#)¹²

Affiliations expand

- PMID: 37182530
- DOI: [10.1016/S2666-7568\(23\)00057-0](https://doi.org/10.1016/S2666-7568(23)00057-0)

Free article

Abstract

Background: Physical exercise is effective at attenuating ageing-related physical decline in general, but evidence of its benefits for older adults in residential care, who often have functional dependency, multimorbidity, and polypharmacy, is inconclusive. We aimed to establish the effects of exercise interventions on the physical function of this population.

Methods: For this systematic review and network meta-analysis, we searched PubMed, Web of Science, Cochrane Library, Rehabilitation & Sports Medicine Source, and SPORTDiscus to identify randomised controlled trials assessing the effects of exercise interventions (vs usual care) on physical function (ie, functional independence, physical performance, and other related measures, such as muscle strength, balance, or flexibility) in

adults aged 60 years or older living in residential care. Relevant studies published in English or Spanish up to Jan 12, 2023, were included in the systematic review. The quality of studies was assessed using the Tool for the Assessment of Study Quality and Reporting in Exercise (TESTEX) score. A network meta-analysis was performed for physical function-related outcomes reported in at least ten studies, with subanalyses for specific intervention (ie, exercise type, training volume, and study duration) and participant (eg, having cognitive impairment or dementia, pre-frail or frail status, and being functionally dependent) characteristics. The study protocol was registered on PROSPERO (CRD42021247809).

Findings: 147 studies (11 609 participants, with mean ages ranging from 67 years [SD 9] to 92 years [2]) were included in the systematic review, and were rated as having overall good quality (median TESTEX score 9 [range 3-14]). In the meta-analysis (including 105 studies, n=7759 participants), exercise interventions were associated with significantly improved overall physical function, with a standardised mean difference [SMD] of 0.13 (95% credible interval [CrI] 0.04-0.21), which was confirmed in all analysed subpopulations. The strongest association was observed with 110-225 min per week of exercise, and the greatest improvements were observed with 170 min per week (SMD 0.36 [95% CrI 0.20-0.52]). No significant differences were found between exercise types. Subanalyses showed significant improvements for almost all analysed physical function-related outcomes (Barthel index, five-times sit-to-stand test, 30-s sit-to-stand test, knee extension, hand grip strength, bicep curl strength, Short Physical Performance Battery, 6-min walking test, walking speed, Berg balance scale, and sit-and-reach test). Large heterogeneity was found between and within studies in terms of population and intervention characteristics.

Interpretation: Exercise interventions are associated with improved physical function in older adults in residential care, and should, therefore, be routinely promoted in long-term care facilities.

Funding: None.

Translation: For the Spanish translation of the abstract see Supplementary Materials section.

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Conflict of interest statement

Declaration of interests We declare no competing interests.

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. 2023 Jun;4(6):e241-e242.

doi: 10.1016/S2666-7568(23)00053-3. Epub 2023 May 4.

Cardiometabolic multimorbidity and cognitive decline

[Abigail Dove](#)¹, [Weili Xu](#)²

Affiliations expand

- PMID: 37150184
- DOI: [10.1016/S2666-7568\(23\)00053-3](https://doi.org/10.1016/S2666-7568(23)00053-3)

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Conflict of interest statement

We declare no competing interests.

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. 2023 Jun;4(6):e265-e273.

doi: 10.1016/S2666-7568(23)00054-5. Epub 2023 May 4.

Cardiometabolic multimorbidity, lifestyle behaviours, and cognitive function: a multicohort study

[Yinzi Jin](#)¹, [Jersey Liang](#)², [Chenlu Hong](#)³, [Richard Liang](#)⁴, [Yanan Luo](#)⁵

Affiliations expand

- PMID: 37150183
- DOI: [10.1016/S2666-7568\(23\)00054-5](https://doi.org/10.1016/S2666-7568(23)00054-5)

Free article

Abstract

Background: Little is known about the effect of lifestyle factors on cognitive decline related to cardiometabolic multimorbidity. We aimed to examine the association between cardiometabolic multimorbidity and cognitive decline, and the role of lifestyle factors in this association.

Methods: We did a pooled multi-cohort study using pooled data from four cohort studies (the Health and Retirement Study; the English Longitudinal Study of Ageing; the Survey of Health, Ageing and Retirement in Europe; and the China Health and Retirement Longitudinal Study) across 14 countries. Eligible participants were age 50 years and older, and those who were missing information on exposure and outcomes, or who had been diagnosed with dementia or Parkinson's disease, were excluded. Cardiometabolic multimorbidity was defined as the co-occurrence of two or three cardiometabolic diseases, including diabetes, heart disease, and stroke. The primary outcome of cognitive function was measured in three domains, on the basis of the mean and SD of the corresponding tests: memory, numeracy, and orientation, in all participants with available data. A global cognitive score was created by summing the individual scores.

Findings: The final sample consisted of 160 147 individuals across all four studies (73 846 [46.1%] men and 86 301 [53.9%] women) and participants had a mean age of 67.49 years (SD 10.43). An increasing number of cardiometabolic diseases was dose-dependently associated with the decline in cognitive function score (one disease, $\beta = -0.15$ [95% CI -0.17

to -0.13]; two diseases, $\beta = -0.37$ [-0.40 to -0.34]; three diseases, $\beta = -0.57$ [-0.64 to -0.50]), with comorbid diabetes and stroke ($\beta = -0.23$ [-0.29 to -0.17]) contributing most strongly to cardiometabolic disease-associated cognitive decline. Cognitive decline associated with cardiometabolic disease was accelerated with physical inactivity (one cardiometabolic disease, $p = 0.020$; two cardiometabolic diseases, $p = 0.42$; and three cardiometabolic diseases, $p = 0.24$), excessive alcohol use (one cardiometabolic disease, $p = 0.016$; two cardiometabolic diseases, $p = 0.65$; and three cardiometabolic diseases, $p = 0.50$), and the higher number of unhealthy lifestyle factors (one cardiometabolic disease, $p = 0.79$; two cardiometabolic diseases, $p = 0.0050$; and three cardiometabolic diseases, $p = 0.888$).

Interpretation: These findings indicated a targeted approach for simultaneously developing preventative interventions on lifestyles and integrated treatment for cardiometabolic comorbidities to delay cognitive decline in older people.

Funding: Major Project of the National Social Science Fund of China, National Natural Science Foundation of China, China Medical Board, and Young Elite Scientists Sponsorship Program by CAST.

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Conflict of interest statement

Declaration of interests We declare no competing interests.

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Observational Study

Br J Gen Pract

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. 2023 May 25;73(731):e435-e442.

doi: 10.3399/BJGP.2022.0235. Print 2023 Jun.

Development of a modified Cambridge Multimorbidity Score for use with SNOMED CT: an observational English primary care sentinel network study

[Ruby Sm Tsang](#)¹, [Mark Joy](#)¹, [Heather Whitaker](#)², [James P Sheppard](#)¹, [John Williams](#)¹, [Julian Sherlock](#)¹, [Nikhil Mayor](#)³, [Bernardo Meza-Torres](#)¹, [Elizabeth Button](#)¹, [Alice J Williams](#)¹, [Debasish Kar](#)¹, [Gayathri Delanerolle](#)¹, [Richard McManus](#)¹, [Fd Richard Hobbs](#)¹, [Simon de Lusignan](#)⁴

Affiliations expand

- PMID: 37130611
- PMCID: [PMC10170523](#)
- DOI: [10.3399/BJGP.2022.0235](#)

Free PMC article

Abstract

Background: People with multiple health conditions are more likely to have poorer health outcomes and greater care and service needs; a reliable measure of multimorbidity would inform management strategies and resource allocation.

Aim: To develop and validate a modified version of the Cambridge Multimorbidity Score in an extended age range, using clinical terms that are routinely used in electronic health records across the world (Systematized Nomenclature of Medicine - Clinical Terms, SNOMED CT).

Design and setting: Observational study using diagnosis and prescriptions data from an English primary care sentinel surveillance network between 2014 and 2019.

Method: In this study new variables describing 37 health conditions were curated and the associations modelled between these and 1-year mortality risk using the Cox proportional hazard model in a development dataset ($n = 300\,000$). Two simplified models were then developed - a 20-condition model as per the original Cambridge Multimorbidity Score and a variable reduction model using backward elimination with Akaike information criterion as

the stopping criterion. The results were compared and validated for 1-year mortality in a synchronous validation dataset ($n = 150\,000$), and for 1-year and 5-year mortality in an asynchronous validation dataset ($n = 150\,000$).

Results: The final variable reduction model retained 21 conditions, and the conditions mostly overlapped with those in the 20-condition model. The model performed similarly to the 37- and 20-condition models, showing high discrimination and good calibration following recalibration.

Conclusion: This modified version of the Cambridge Multimorbidity Score allows reliable estimation using clinical terms that can be applied internationally across multiple healthcare settings.

Keywords: Systematized Nomenclature of Medicine–Clinical Terms; general practice; medical record systems, computerised; mortality; multimorbidity; population surveillance.

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Conflict of interest statement

Simon de Lusignan is Director of the RCGP RSC; he has had grants through his University from AstraZeneca, GSK, Lilly, MSD, Sanofi, Seqirus, and Takeda; and has been an advisory board member for AstraZeneca, Sanofi, Seqirus, and Pfizer.

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- [2 figures](#)

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Publication types, MeSH terms [expand](#)

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Scand J Prim Health Care

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. 2023 Jun;41(2):160-169.

Disparities in prevalence of heart failure between the genders in relation to age, multimorbidity and socioeconomic status in southern Sweden: a cross-sectional study

[Mia Scholten](#)¹, [Patrik Midlöv](#)¹, [Anders Halling](#)¹

Affiliations expand

- PMID: 37052877
- PMCID: [PMC10193904](#)
- DOI: [10.1080/02813432.2023.2197951](#)

Free PMC article

Abstract

Objective: Prior studies have reported that heart failure typically affects elderly, multimorbid and socioeconomically deprived men. Women with heart failure are generally older, have a higher EF (ejection fraction) and have more heart failure-related symptoms than men. This study explored the disparities in the prevalence of heart failure between men and women in relation to age, multimorbidity level and socioeconomic status of the population in southern Sweden.

Design: A register-based, cross-sectional cohort study. **Setting and subjects:** The inhabitants from 20 years of age onwards ($N = 981,383$) living in southern Sweden in 2015. **Main outcome measure:** Prevalence and mean probability of having heart failure in both genders. CNI (Care Need Index) percentiles depend on the socioeconomic status of their listed primary healthcare centres.

Results: Men had a higher OR for HF - 1.70 (95% CI 1.65-1.75) - than women. The probability of men having heart failure increased significantly compared to women with advancing age and multimorbidity levels. At all CNI levels, the multimorbid patients had a

higher prevalence of heart failure in men than in women. The disparity in the mean probability of heart failure between the most affluent and deprived CNI percentile was more apparent in women compared to men, especially from 80 years.

Conclusions: The prevalence of heart failure differs significantly between the genders. Men had an increasing mean probability of heart failure with advancing age and multimorbidity level compared to women. Socioeconomic deprivation was more strongly associated with heart failure in women than in men. The probability of having heart failure differs between the genders in several aspects. Key Points Independently of socioeconomic status, men had a higher prevalence of heart failure than women among the multimorbid patients. The mean probability of men having heart failure increased significantly compared to women with advancing age and multimorbidity level. Socioeconomic status was more strongly associated with heart failure in women than in men.

Keywords: Heart failure (HF); multimorbidity (MM); prevalence; primary health care; probability.

Conflict of interest statement

The authors declare that they have no competing interests.

- [34 references](#)
- [4 figures](#)

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MeSH terms, Grant support [expand](#)

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[Review](#)

Obes Rev

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. 2023 Jun;24(6):e13562.

doi: 10.1111/obr.13562. Epub 2023 Mar 16.

Overweight, obesity and risk of multimorbidity: A systematic review and meta-analysis of longitudinal studies

[Felipe Mendes Delpino¹](#), [Ana Paula Dos Santos Rodrigues²](#), [Glenda Blaser Petarli³](#), [Karla Pereira Machado¹](#), [Thaynã Ramos Flores⁴](#), [Sandro Rodrigues Batista^{2,5}](#), [Bruno Pereira Nunes¹](#)

Affiliations expand

- PMID: 36929143
- DOI: [10.1111/obr.13562](https://doi.org/10.1111/obr.13562)

Abstract

This study aimed to review and quantify the association between overweight and obesity in the risk of multimorbidity among the general population. We conducted a systematic review and meta-analysis in the databases of Pubmed, Lilacs, Web of Science, Scopus, and Embase. We included cohort studies that assessed the association between overweight and/or obesity with the risk of multimorbidity. The Newcastle-Ottawa assessed the studies' individual quality. A random-effect model meta-analysis was performed to evaluate the association between overweight and obesity with the relative risk (RR) of multimorbidity; the I^2 test evaluated heterogeneity. After excluding duplicates, we found 1.655 manuscripts, of which eight met the inclusion criteria. Of these, seven (87.5%) evidenced an increased risk of multimorbidity among subjects with overweight and/or obesity. Overall, we observed an increased risk of multimorbidity among subjects with overweight (RR: 1.26; CI95%: 1.12; 1.40, $I^2 = 98\%$) and obesity (RR: 1.99; CI95%: 1.45; 2.72, $I^2 = 99\%$) compared to normal weight. According to the I^2 test, the heterogeneities of the meta-analyses were high. The Newcastle-Ottawa scale showed that all studies were classified as high quality. Further longitudinal studies are needed, including different populations and stratifications by sex, age, and other variables.

Keywords: chronic diseases; meta-analysis; multimorbidity; obesity.

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- [33 references](#)

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS



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ESC Heart Fail

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. 2023 Jun;10(3):2051-2065.

doi: 10.1002/ehf2.14294. Epub 2023 Mar 12.

Integrated care for older multimorbid heart failure patients: protocol for the ESCAPE randomized trial and cohort study

[Christine Zelenak](#)¹, [Jonas Nagel](#)¹, [Kristina Bersch](#)², [Lisa Derendorf](#)³, [Frank Doyle](#)⁴, [Tim Friede](#)^{5,6}, [Birgit Herbeck Belnap](#)^{1,7}, [Sebastian Kohlmann](#)⁸, [Søren T Skou](#)^{9,10}, [Carlos A Velasco](#)¹¹, [Christian Albus](#)¹², [Thomas Asendorf](#)², [Christian Axel Bang](#)¹³, [Margarita Beresnevaite](#)¹⁴, [Niels Eske Bruun](#)^{13,15}, [Matthew M Burg](#)¹⁶, [Sussi Friis Buhl](#)¹⁷, [Peter H Gaede](#)^{18,19}, [Dagmar Lühmann](#)²⁰, [Anna Markser](#)¹², [Klaudia Vivien Nagy](#)²¹, [Chiara Rafanelli](#)²², [Sanne Rasmussen](#)¹⁷, [Jens Søndergaard](#)¹⁷, [Jan Sørensen](#)²³, [Adrienne Stauder](#)²⁴, [Stephanie Stock](#)³, [Stefano Urbinati](#)²⁵, [Diego Della Riva](#)²⁵, [Rolf Wachter](#)²⁶, [Florian Walker](#)², [Susanne S Pedersen](#)^{27,28}, [Christoph Herrmann-Lingen](#)^{1,6}, [ESCAPE consortium](#)

Affiliations expand

- PMID: 36907651
- PMCID: [PMC10192276](#)

- DOI: [10.1002/ehf2.14294](https://doi.org/10.1002/ehf2.14294)

Free PMC article

Abstract

Escape: Evaluation of a patient-centred biopsychosocial blended collaborative care pathway for the treatment of multimorbid elderly patients.

Therapeutic area: Healthcare interventions for the management of older patients with multiple morbidities.

Aims: Multi-morbidity treatment is an increasing challenge for healthcare systems in ageing societies. This comprehensive cohort study with embedded randomized controlled trial tests an integrated biopsychosocial care model for multimorbid elderly patients.

Hypothesis: A holistic, patient-centred pro-active 9-month intervention based on the blended collaborative care (BCC) approach and enhanced by information and communication technologies can improve health-related quality of life (HRQoL) and disease outcomes as compared with usual care at 9 months.

Methods: Across six European countries, ESCAPE is recruiting patients with heart failure, mental distress/disorder plus ≥ 2 medical co-morbidities into an observational cohort study. Within the cohort study, 300 patients will be included in a randomized controlled assessor-blinded two-arm parallel group interventional clinical trial (RCT). In the intervention, trained care managers (CMs) regularly support patients and informal carers in managing their multiple health problems. Supervised by a clinical specialist team, CMs remotely support patients in implementing the treatment plan-customized to the patients' individual needs and preferences-into their daily lives and liaise with patients' healthcare providers. An eHealth platform with an integrated patient registry guides the intervention and helps to empower patients and informal carers. HRQoL measured with the EQ-5D-5L as primary endpoint, and secondary outcomes, that is, medical and patient-reported outcomes, healthcare costs, cost-effectiveness, and informal carer burden, will be assessed at 9 and ≥ 18 months.

Conclusions: If proven effective, the ESCAPE BCC intervention can be implemented in routine care for older patients with multiple morbidities across the participating countries and beyond.

Keywords: Blended collaborative care; Depression; Heart failure; Multi-morbidity; Multinational trial; Psychological distress; Quality of life.

Conflict of interest statement

The following authors declare conflicts of interest: Christoph Herrmann-Lingen, Susanne S. Pedersen, Søren T. Skou, Christian Albus, Dagmar Lühmann, Tim Friede, Niels E. Bruun, Jens Søndergaard. For details, see Appendix S2 .

The following authors declare they have no conflicts of interest: Christine Zelenak, Jonas Nagel, Kristina Bersch, Lisa Derendorf, Frank Doyle, Birgit Herbeck Belnap, Sebastian Kohlmann, Carlos A. Velasco, Thomas Asendorf, Christian Axel Bang, Margarita Beresnevaite, Matthew M. Burg, Sussi Friis Buhl, Peter H. Gæde, Anna Markser, Klaudia Vivien Nagy, Chiara Rafanelli, Sanne Rasmussen, Jan Sørensen, Adrienne Stauder, Stephanie Stock, Stefano Urbinati, Diego Della Riva, Rolf Wachter and Florian Walker. See Appendix S2 for information on role of funders and legal sponsor in study design, trial governance, trial registration, data safety and monitoring board, ethics advisory board, availability of data and materials, and declaration of interest.

- [98 references](#)
- [2 figures](#)

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

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[Review](#)

Ageing Res Rev

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. 2023 Jun;87:101901.

doi: 10.1016/j.arr.2023.101901. Epub 2023 Mar 9.

Interventions and management on multimorbidity: An overview of systematic reviews

[Yaguan Zhou](#)¹, [Xiaochen Dai](#)², [Yujie Ni](#)¹, [Qingyong Zeng](#)¹, [Yangyang Cheng](#)¹, [Rodrigo M Carrillo-Larco](#)³, [Lijing L Yan](#)⁴, [Xiaolin Xu](#)⁵

Affiliations expand

- PMID: 36905961
- DOI: [10.1016/j.arr.2023.101901](https://doi.org/10.1016/j.arr.2023.101901)

Abstract

Background: Multimorbidity poses an immense burden on the healthcare systems globally, whereas the management strategies and guidelines for multimorbidity are poorly established. We aim to synthesize current evidence on interventions and management of multimorbidity.

Methods: We searched four electronic databases (PubMed, Embase, Web of Science, and the Cochrane Database of Systematic Reviews). Systematic reviews (SRs) on interventions or management of multimorbidity were included and evaluated. The methodological quality of each SR was assessed by the AMSTAR-2 tool, and the quality of evidence on the effectiveness of interventions was assessed by the grading of recommendations assessment, development and evaluation (GRADE) system.

Results: A total of 30 SRs (464 unique underlying studies) were included, including 20 SRs of interventions and 10 SRs summarizing evidence on management of multimorbidity. Four categories of interventions were identified: patient-level interventions, provider-level interventions, organization-level interventions, and combined interventions (combining the aforementioned two or three-level components). The outcomes were categorized into six types: physical conditions/outcomes, mental conditions/outcomes, psychosocial outcomes/general health, healthcare utilization and costs, patients' behaviors, and care process outcomes. Combined interventions (with patient-level and provider-level components) were more effective in promoting physical conditions/outcomes, while patient-level interventions were more effective in promoting mental conditions/outcomes and psychosocial outcomes/general health. As for healthcare utilization and care process outcomes, organization-level and combined interventions (with organization-level components) were more effective. The challenges in the management of multimorbidity at the patient, provider and organizational levels were also summarized.

Conclusion: Combined interventions for multimorbidity at different levels would be favored to promote different types of health outcomes. Challenges exist in the management at the patient, provider, and organization levels. Therefore, a holistic and integrated approach of patient-, provider- and organization- level interventions is required to address the challenges and optimize care of patients with multimorbidity.

Keywords: Health outcome; Intervention; Management; Multimorbidity; Systematic review.

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Conflict of interest statement

Declaration of Competing Interest None.

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Eur J Intern Med

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. 2023 Jun;112:138-139.

doi: 10.1016/j.ejim.2023.02.021. Epub 2023 Mar 3.

[Telemedicine in internal medicine: A statement by the European Federation of Internal Medicine](#)

[Pietrantonio Filomena](#)¹, [Kuhn Sebastian](#)², [Kärberg Kati](#)³, [Leung Tiffany](#)⁴, [Said-Criado Ismael](#)⁵; [EFIM Telemedicine, Innovative Technologies and Digital Health Working Group](#)

Affiliations expand

- PMID: 36872139

- DOI: [10.1016/j.ejim.2023.02.021](https://doi.org/10.1016/j.ejim.2023.02.021)

No abstract available

Keywords: Data security; Doctor-patient relationship; Future vision; Multimorbidity; Telemedicine.

Conflict of interest statement

Declaration of Competing Interest The authors declare they have no conflict of interest.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

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Thorax

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. 2023 Jun;78(6):559-565.

doi: 10.1136/thoraxjnl-2021-218315. Epub 2022 Jul 1.

The relationship between interstitial lung abnormalities, mortality, and multimorbidity: a cohort study

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Affiliations expand

- PMID: 35777957
- DOI: [10.1136/thoraxjnl-2021-218315](https://doi.org/10.1136/thoraxjnl-2021-218315)

Abstract

Background: Interstitial lung abnormalities (ILAs) are associated with increased mortality. It is unclear whether multimorbidity accounts for the mortality association or how strongly ILA is associated with mortality relative to other common age-associated diseases. We determined the association of ILA with all-cause mortality adjusted for multimorbidity, compared mortality associated with ILA and prevalent cardiovascular disease (CVD), diabetes mellitus, chronic kidney disease, chronic obstructive pulmonary disease and cancer and also determined the association between ILA and these diseases.

Methods: We measured ILA (none, indeterminant, definite) using blinded reads of CT images, prevalent chronic diseases and potential confounders in two observational cohorts, the Framingham Heart Study (FHS) (n=2449) and Age, Gene/Environment Susceptibility - Reykjavik Study (AGES-Reykjavik) (n=5180). We determined associations with mortality using Cox proportional hazards models and between ILA and diseases with multinomial logistic regression.

Results: Over a median (IQR) follow-up of 8.8 (1.4) years in FHS and 12.0 (7.7) years in AGES-Reykjavik, in adjusted models, ILAs were significantly associated with increased mortality (HR, 95% CI 1.95, 1.23 to 3.08, p=0.0042, in FHS; HR 1.60, 1.41 to 1.82, p<0.0001, in AGES-Reykjavik) adjusted for multimorbidity. In both cohorts, the association of ILA with mortality was of similar magnitude to the association of most other diseases. In adjusted models, ILAs were associated only with prevalent kidney disease (OR, 95% CI 1.90, 1.01 to 3.57, p=0.0452) in FHS and with prevalent CVD (OR 1.42, 1.12 to 1.81, p=0.0040) in AGES-Reykjavik.

Conclusions: ILAs were associated with mortality adjusted for multimorbidity and were similarly associated with increased mortality compared with several common chronic diseases. ILAs were not consistently associated with the prevalence of these diseases themselves.

Keywords: clinical epidemiology; idiopathic pulmonary fibrosis; imaging/CT MRI etc.

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Conflict of interest statement

Competing interests: JLS reports personal fees for consultancy from Apneo Therapeutics and Decimal.health, outside the submitted work. At the time of publication, JLS was employed by Vertex Pharmaceuticals. MN reports personal fees for consultancy from Daiichi Sankyo and AstraZeneca; honoraria from Roche; and grants from Merck, AstraZeneca, Canon Medical Systems and NIH (R01CA203636, U01CA209414, R01HL111024), outside the submitted work. HH reports grants from Canon Medical System Inc. and Konica-Minolta Inc., personal fees for consultancy from Mitsubishi Chemical Inc. and personal fees for advisory board work from Canon Medical System Inc., outside the submitted work. JM reports fees to her institution on her behalf for guest lecture/consultant outside the submitted work from Merck. GMH reports personal fees from Genentech, Boehringer Ingelheim, The Gerson Lehrman Group and Mitsubishi Chemical, outside the submitted work.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grant supportexpand

FULL TEXT LINKS



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

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Allergol Int

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. 2023 Jun 1;S1323-8930(23)00048-5.

doi: 10.1016/j.alit.2023.05.004. Online ahead of print.

Bronchodilator response using oscillometry to detect uncontrolled asthma

[Hiromasa Nakayasu](#)¹, [Toshihiro Shirai](#)², [Keita Hirai](#)³, [Taisuke Akamatsu](#)¹, [Yoshihiro Kitahara](#)¹

Affiliations expand

- PMID: 37270394

- DOI: [10.1016/j.alit.2023.05.004](https://doi.org/10.1016/j.alit.2023.05.004)

No abstract available

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Respir Res

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. 2023 Jun 2;24(1):147.

doi: [10.1186/s12931-023-02437-y](https://doi.org/10.1186/s12931-023-02437-y).

[Economic impact of a more extensive use of FENO testing on the Italian population with asthma](#)

[Carla Rognoni](#)¹, [Carlo Milano](#)², [Enrico Heffler](#)^{3,4}, [Matteo Bonini](#)⁵, [Luisa Brussino](#)⁶, [Giovanna Elisiana Carpagnano](#)⁷, [Fabio Luigi Massimo Ricciardolo](#)^{8,9}, [Francesco Costa](#)², [Patrizio Armeni](#)²

Affiliations [expand](#)

- PMID: 37268938

- DOI: [10.1186/s12931-023-02437-y](https://doi.org/10.1186/s12931-023-02437-y)

Abstract

Background: Asthma is a common chronic inflammatory airway affecting over 260 million people worldwide, and characterized, in the large majority of cases, by the so-called "type 2 inflammation". Fractional exhaled nitric oxide (FE_{NO}) testing is noninvasive point-of-care tool to assess type 2 inflammation and therefore improve asthma management. It has been suggested to determine eligibility for a specific biologic therapy and predict likelihood to respond. The aim of this study was to estimate the overall economic impact of an extensive use of FE_{NO} testing on the Italian population with asthma, including extra costs of testing and savings generated by more appropriate prescriptions, increased adherence and lower frequency of exacerbations.

Methods: A cost of illness analysis was firstly performed to estimate the yearly economic burden from the National Healthcare Service (NHS) perspective in Italy of the management of asthmatic patients with standard of care (SOC) according to the application of GINA (Global Initiative for Asthma) guidelines; then, we evaluated the changes in the economic burden in patient management by introducing FE_{NO} testing into clinical practice. The cost items considered were: visits/exams, exacerbations, drugs, management of adverse events caused by short-term oral corticosteroids use. Efficacy of FeNO test and SOC is based on literature evidence. Costs refer to published data or Diagnosis Related Group/outpatient tariffs.

Results: Considering one asthma visit every 6 months, the total yearly cost for the management of patients with asthma in Italy is 1,599,217,876€ (409.07€ per patient), while for FE_{NO} testing strategy this figure is 1,395,029,747€ (356.84€ per patient). An increased utilization rate of FE_{NO} testing from 50 to 100% of patients may lead to savings for the NHS from about 102 to 204 million € compared to SOC.

Conclusions: Our study showed that FeNO testing strategy may improve the management of asthmatic patients leading to significant savings for the NHS.

Keywords: Asthma; Burden; Cost of illness; Fractional exhaled nitric oxide testing.

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- [45 references](#)

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Ann Nucl Med

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. 2023 Jun 3.

doi: 10.1007/s12149-023-01848-7. Online ahead of print.

Quantitative analysis of lung function and airway remodeling using ventilation/perfusion single photon emission tomography/computed tomography and HRCT in patients with chronic obstructive pulmonary disease and asthma

[Hangyu Xie](#)¹, [Zhen Zhao](#)^{#2}, [Wenjie Zhang](#)¹, [Lin Li](#)^{#3}

Affiliations expand

- PMID: 37268867
- DOI: [10.1007/s12149-023-01848-7](https://doi.org/10.1007/s12149-023-01848-7)

Abstract

Objective: To investigate the role of V/P SPECT/CT and HRCT quantitative parameters in evaluating COPD and asthma disease severity, airway obstructivity-grade, ventilation and perfusion distribution patterns, airway remodeling, and lung parenchymal changes.

Method: Fifty-three subjects who underwent V/P SPECT/CT, HRCT, and pulmonary function tests (PFTs) were included. Preserved lung ventilation (PLVF), perfusion function (PLPF), airway obstructivity-grade (OG), proportion of anatomical volume, ventilation and perfusion contribution of each lobe, and V/P distribution patterns were evaluated using V/P SPECT/CT. The quantitative parameters of HRCT included CT bronchial and CT

pulmonary function parameters. In addition, the correlation and difference of V/P SPECT/CT-, HRCT-, and PFT-related parameters were compared.

Results: There was a statistically significant difference between severe asthma and severe-very severe COPD in CT bronchial parameters, like WA, LA and AA, in the lung segment airways ($P < 0.05$). CT bronchial parameters, like as WT and WA, were statistically significant ($p < 0.05$) among asthma patients. The EI of severe-very severe COPD was different from that of the disease severity groups in asthma patients ($P < 0.05$). The airway obstructivity-grade, PLVF and PLPF differed significantly among the severe-very severe COPD and mild-moderate asthma patients ($P < 0.05$). And the PLPF was statistically significant among the disease severity groups in asthma and COPD ($P < 0.05$). OG and PLVF, PLPF, and PFT parameters were significantly correlated, with the FEV1 correlation being the most significant ($r = -0.901$, $r = 0.915$, and $r = 0.836$, respectively; $P < 0.01$). There was a strong negative correlation between OG and PLVF ($r = -0.945$) and OG and PLPF ($r = -0.853$) and a strong positive correlation between PLPF and PLVF ($r = 0.872$). In addition, OG, PLVF, and PLPF were moderately to strongly correlated with CT lung function parameters ($r = -0.673$ to -0.839 ; $P < 0.01$), while lowly to moderately correlated with most CT bronchial parameters ($r = -0.366$ to -0.663 , $P < 0.01$). There were three different V/P distribution patterns, including matched, mismatched, and reverse mismatched patterns. Last, the CT volume overestimated the contribution in the upper lobes and underestimated the lower lobes' contribution to overall function.

Conclusions: Quantitative assessment of ventilation and perfusion abnormalities and the degree of pulmonary functional loss by V/P SPECT/CT shows promise as an objective measure to assess the severity of disease and lung function to guide localized treatments. There are differences between HRCT parameters and SPECT/CT parameters among the disease severity groups in asthma and COPD, which may enhance, to some extent, the understanding of complex physiological mechanisms in asthma and COPD.

Keywords: Airway remodeling; HRCT; Quantitative analysis; Regional function; Ventilation/perfusion SPECT/CT.

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- [44 references](#)

SUPPLEMENTARY INFO

Grant supportexpand

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J Allergy Clin Immunol Pract

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. 2023 May 31;S2213-2198(23)00598-6.

doi: 10.1016/j.jaip.2023.05.034. Online ahead of print.

Cluster analysis of Finnish population-based adult-onset asthma patients

[Pinja Ilmarinen](#)¹, [Anna Julkunen-Iivari](#)², [Marie Lundberg](#)³, [Annika Luukkainen](#)⁴, [Mikko Nuutinen](#)⁵, [Jussi Karjalainen](#)⁶, [Heini Huhtala](#)⁷, [Juha Pekkanen](#)⁸, [Hannu Kankaanranta](#)⁹, [Sanna Toppila-Salmi](#)¹⁰

Affiliations expand

- PMID: 37268268
- DOI: [10.1016/j.jaip.2023.05.034](https://doi.org/10.1016/j.jaip.2023.05.034)

Abstract

Background: Phenotypes of adult asthma have been identified in previous studies but rarely in population-based settings.

Objective: To identify clusters of adult-onset asthma, in a Finnish population-based study on subjects born before 1967.

Methods: We used population-based data from 1350 asthmatics with adult-onset asthma (Adult Asthma in Finland) from Finnish national registers. Twenty-eight covariates were selected based on literature. Number of covariates was reduced by using factor analysis before cluster analysis.

Results: Five clusters (CLU1 - CLU5) were identified, three clusters with late-onset adult asthma (onset ≥ 40 years) and two clusters with onset at earlier adulthood (< 40 years). Subjects in CLU1 (n=666) had late-onset asthma, were non-obese, symptomatic, predominantly female with few respiratory infections during childhood. CLU2 (n=36) consisted of subjects with earlier-onset asthma, who were predominantly female, obese

with allergic asthma, and recurrent respiratory infections. Subjects in CLU3 (n=75) were non-obese, older and predominantly men with late-onset asthma, smoking history, co-morbidities, severe asthma, least allergic diseases, low education, many siblings, and childhood in rural areas. CLU4 (n=218) was a late-onset cluster consisting of obese females with co-morbidities, asthma symptoms, and low education level. Subjects in CLU5 (n=260) had earlier onset asthma, were non-obese, predominantly allergic females.

Conclusions: Our population-based adult-onset asthma clusters take into account several critical factors such as obesity and smoking, and identified clusters that partially overlap with clusters identified in clinical settings. Results give us more profound understanding of adult-onset asthma phenotypes and support personalized management.

Keywords: Adult-onset asthma; cluster analysis; factor analysis; population-based research.

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Ann Allergy Asthma Immunol

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. 2023 May 31;S1081-1206(23)00402-7.

doi: 10.1016/j.anai.2023.05.029. Online ahead of print.

[Prospective direct comparison of biological treatments on severe eosinophilic asthma: Findings from the PRISM study](#)

[Duong Duc Pham](#)¹, [Ji-Hyang Lee](#)¹, [Hyouk-Soo Kwon](#)¹, [Woo-Jung Song](#)¹, [You Sook Cho](#)¹, [Hyunkyung Kim](#)¹, [Jae-Woo Kwon](#)², [So-Young Park](#)³, [Sujeong Kim](#)⁴, [Gyu Young Hur](#)⁵, [Byung Keun Kim](#)⁶, [Young-Hee Nam](#)⁷, [Min-Suk Yang](#)⁸, [Mi-Yeong Kim](#)⁹, [Sae-Hoon Kim](#)¹⁰, [Byung-Jae Lee](#)¹¹, [Taehoon Lee](#)¹², [So Young Park](#)¹³, [Min-Hye Kim](#)¹⁴, [Young-Joo](#)

[Cho](#)¹⁵, [ChanSun Park](#)¹⁶, [Jae-Woo Jung](#)¹⁷, [Han Ki Park](#)¹⁸, [Joo-Hee Kim](#)¹⁹, [Ji-Yong Moon](#)²⁰, [Ian Adcock](#)²¹, [Kian Fan Chung](#)²¹, [Tae-Bum Kim](#)²²

Affiliations expand

- PMID: 37268246
- DOI: [10.1016/j.anai.2023.05.029](https://doi.org/10.1016/j.anai.2023.05.029)

Abstract

Background: Although various monoclonal antibodies have been used as add-on therapy for eosinophilic severe asthma (ESA), no direct head-to-head comparative study has evaluated their efficacy.

Objective: To compare the efficacy of reslizumab, mepolizumab, and dupilumab in patients with ESA through a multicenter prospective observational study.

Methods: Ninety-six ESA patients who had received one of these biological agents for at least six months were included in the study. Cox proportional hazard models were used to compare the risk of the first exacerbation event. The annual exacerbation rate was analyzed using a negative binomial model, and a mixed-effect model was used to analyze changes in forced expiratory volume in 1 s (FEV1) and asthma control test (ACT) score over time.

Results: In comparison to reslizumab adjusted for sputum eosinophils and common asthma-related covariates, the hazard ratios and 95% confidence intervals (CIs) of the first exacerbation incidence were 2.90 (0.92-9.16) and 2.69 (0.87-8.29) for dupilumab and mepolizumab, respectively. During the follow-up period, the dupilumab group was more likely to experience exacerbation compared to the reslizumab group (rate ratio and 95% CI: 3.97 [1.17-14.74]). No differences were observed when the models were adjusted for blood eosinophil counts. Both the FEV1 and ACT improved after treatment, but no group differences were found.

Conclusion: Three biologics were equally effective as add-on therapy for ESA. Reslizumab may have an advantage in preventing future exacerbation compared to dupilumab. Sputum eosinophils may be a useful consideration when choosing a biological treatment.

Keywords: biological therapy; head-to-head comparison; monoclonal antibody; severe asthma.

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Conflict of interest statement

Declaration of Competing Interest The authors have no conflicts of interest to declare.

FULL TEXT LINKS



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J Exp Med

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. 2023 Jul 3;220(7):e20221212.

doi: 10.1084/jem.20221212. Epub 2023 Jun 2.

Type 2 inflammation and biological therapies in asthma: Targeted medicine taking flight

[Imran Howell](#)¹, [Aleksandra Howell](#)¹, [Ian D Pavord](#)¹

Affiliations [expand](#)

- PMID: 37265457
- PMID: [PMC10239209](#)
- DOI: [10.1084/jem.20221212](#)

Abstract

The field of asthma has undergone a dramatic change in recent years. Advances in our understanding of type 2 airway inflammation have driven the discovery of monoclonal antibodies targeting specific aspects of the immune pathway. In landmark trials, these drugs have shown efficacy in reducing asthma attacks and exposure to oral corticosteroids, important causes of morbidity in people with asthma. Our review explores the key features

of type 2 inflammation in asthma and summarizes the clinical trial evidence of the novel monoclonal antibody treatments and future avenues for treatment.

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Conflict of interest statement

Disclosures: I.D. Pavord reported having, over the last 5 years, received speaker's honoraria for speaking at sponsored meetings from Astra Zeneca, Boehringer Ingelheim, Aerocrine, Almirall, Novartis, Teva, Chiesi, Sanofi/Regeneron, Menarini, and GSK, as well as payments for organizing educational events from Astra Zeneca, GSK, Sanofi/Regeneron, and Teva. He has also received honoraria for attending advisory panels with Genentech, Sanofi/Regeneron, Astra Zeneca, Boehringer Ingelheim, GSK, Novartis, Teva, Merck, Circassia, Chiesi, and Knopp, as well as payments to support FDA approval meetings from GSK; receiving sponsorship to attend international scientific meetings from Boehringer Ingelheim, GSK, Astra Zeneca, Teva, and Chiesi; and has received a grant from Chiesi to support a phase 2 clinical trial in Oxford. No other disclosures were reported.

- [131 references](#)
- [1 figure](#)

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[Review](#)

Expert Rev Pharmacoecon Outcomes Res

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. 2023 Jun 2.

doi: 10.1080/14737167.2023.2221435. Online ahead of print.

Economic evaluation of biological treatments in patients with severe asthma: a systematic review

[Sara Alves](#)¹, [João Cavaleiro Rufo](#)^{2,3}, [José Crispim](#)⁴

Affiliations expand

- PMID: 37265078
- DOI: [10.1080/14737167.2023.2221435](https://doi.org/10.1080/14737167.2023.2221435)

Abstract

Background: Asthma is a highly prevalent disease, one of the chronic diseases with the highest economic costs; thus, it imposes a high economic burden on society, the healthcare system, patients, and third-party payers. Contrary to this study, until now, systematic reviews of economic evaluations (EEs) of treatments for severe asthma have not been exclusively focused on biological treatments, and have included a small number of studies and only model-based EEs.

Methods: This study systematically reviews EEs of biological therapies for severe asthma published until December 2022 using PRISMA guidelines. The review analyzes the cost-effectiveness of biologicals in comparison to SOC, or SOC plus OCS. The quality of the EEs is assessed using Consensus on Health Economics Checklist extended (CHEC-extended).

Results: Thirty-nine studies were eligible: fifteen based on a Markov model, and nineteen trial-based; eight adopting societal and NHS perspectives, and seven the payer's perspective. The reviewed EEs addressed cost-effectiveness, cost-utility, and incremental costs and outcomes comparison. Their findings were mainly expressed through ICER-incremental cost-effectiveness ratio (24 studies: 13 concluded that biological were cost-effective) and cost comparison analysis (14 studies: 6 concluded that biological were cost-effective), and were sensitive to a wide variety of factors (e.g. medication cost, treatment response, time horizon, utility benefits, mortality, exacerbation rate, discount rate, etc.).

Conclusions: There has been some ambiguity concerning the EE of biological therapies due to variation in choice of study design and contradictory results. Nevertheless, it can be concluded that biological treatments improve health outcomes, in many contexts at a high cost.

Keywords: Asthma; Biological therapies; Cost-effectiveness; Economic evaluation; Quality of life.

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Indian J Pediatr

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. 2023 Jun 2.

doi: 10.1007/s12098-023-04592-y. Online ahead of print.

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

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- PMID: 37264275

- DOI: [10.1007/s12098-023-04592-y](https://doi.org/10.1007/s12098-023-04592-y)

Abstract

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

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

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

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

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

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Eur Respir J

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. 2023 Jun 1;2201667.

doi: 10.1183/13993003.01667-2022. Online ahead of print.

Genome-wide association study of chronic sputum production implicates loci involved in mucus production and infection

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- PMID: 37263751
- DOI: [10.1183/13993003.01667-2022](https://doi.org/10.1183/13993003.01667-2022)

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Abstract

Background: Chronic sputum production impacts on quality of life and is a feature of many respiratory diseases. Identification of the genetic variants associated with chronic

sputum production in a disease agnostic sample could improve understanding of its causes and identify new molecular targets for treatment.

Methods: We conducted a genome-wide association study (GWAS) of chronic sputum production in UK Biobank. Signals meeting genome-wide significance ($p < 5 \times 10^{-8}$) were investigated in additional independent studies, were fine-mapped, and putative causal genes identified by gene expression analysis. GWAS of respiratory traits were interrogated to identify whether the signals were driven by existing respiratory disease amongst the cases and variants were further investigated for wider pleiotropic effects using phenome-wide association studies (PheWAS).

Findings: From a GWAS of 9714 cases and 48 471 controls, we identified six novel genome-wide significant signals for chronic sputum production including signals in the Human Leukocyte Antigen (HLA) locus, chromosome 11 mucin locus (containing *MUC2*, *MUC5AC* and *MUC5B*) and the *FUT2* locus. The four common variant associations were supported by independent studies with a combined sample size of up to 2,203 cases and 17,627 controls. The mucin locus signal had previously been reported for association with moderate-to-severe asthma. The HLA signal was fine-mapped to an amino-acid change of threonine to arginine (frequency 36.8%) in HLA-DRB1 (HLA-*DRB1*03:147*). The signal near *FUT2* was associated with expression of several genes including *FUT2*, for which the direction of effect was tissue dependent. Our PheWAS identified a wide range of associations including blood cell traits, liver biomarkers, infections, gastrointestinal and thyroid-associated diseases, and respiratory disease.

Interpretation: Novel signals at the *FUT2* and mucin loci suggest that mucin fucosylation may be a driver of chronic sputum production even in the absence of diagnosed respiratory disease and provide genetic support for this pathway as a target for therapeutic intervention.

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. 2023 Jun 1;90(6):363-370.
doi: 10.3949/ccjm.90a.22072.

Measuring exhaled nitric oxide when diagnosing and managing asthma

[Payal Sen](#)¹, [Sumita B Khatri](#)², [Vickram Tejwani](#)³

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- PMID: 37263659
- DOI: [10.3949/ccjm.90a.22072](https://doi.org/10.3949/ccjm.90a.22072)

Free article

Abstract

Measuring the concentration of nitric oxide in the exhaled breath may have several roles in patients with suspected or confirmed asthma: as an adjunctive test for the disease, as a test to determine whether patients with asthma are likely to respond to inhaled corticosteroids, as a way to monitor and adjust this therapy, and as a way to estimate the likelihood of exacerbations. However, it is not very sensitive or specific and should not be used by itself, but rather in conjunction with clinical signs and symptoms. The authors address the role of measuring exhaled nitric oxide in the diagnosis and management of asthma and provide guidance for its appropriate use.

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. 2023 May 30;S1081-1206(23)00399-X.

doi: 10.1016/j.anai.2023.05.028. Online ahead of print.

Effect of tezepelumab on healthcare utilization in patients with severe, uncontrolled asthma: the NAVIGATOR study

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Affiliations expand

- PMID: 37263380

- DOI: [10.1016/j.anai.2023.05.028](https://doi.org/10.1016/j.anai.2023.05.028)

Abstract

Background: Tezepelumab, a human monoclonal antibody, blocks thymic stromal lymphopoietin. In the phase 3 NAVIGATOR study, tezepelumab reduced exacerbations and improved lung function, asthma control, and health-related quality of life compared with placebo in patients with severe, uncontrolled asthma. However, little is known about the impact of tezepelumab on healthcare utilization (HCU) in these patients.

Objective: To evaluate to what extent tezepelumab reduces patients' HCU.

Methods: In NAVIGATOR, patients were randomized to receive tezepelumab 210 mg or placebo every 4 weeks for 52 weeks subcutaneously. For this analysis, the main outcomes of interest were asthma-related HCU. A blinded, systematic analysis of the symptoms and HCU recorded in the investigator-reported narratives describing exacerbation-related hospitalizations was also conducted; the narratives included blinded ratings of event intensity, recorded as mild, moderate, or severe.

Results: Compared with placebo recipients (n = 531), tezepelumab recipients (n = 528) required fewer asthma-related unscheduled specialist visits (tezepelumab, 285 events;

placebo, 406 events), telephone calls with a healthcare provider (tezepelumab, 234; placebo, 599), ambulance transports (tezepelumab, 5; placebo, 22), emergency department visits (without subsequent hospitalization; tezepelumab, 16; placebo, 37), hospitalizations (tezepelumab, 14; placebo, 78), and intensive care days (tezepelumab, 0; placebo, 31). Among patients with asthma exacerbation-related hospitalizations, 38% of hospitalized tezepelumab recipients (5/13) had an event rated as severe, compared with 82% of hospitalized placebo recipients (32/39).

Conclusion: Tezepelumab substantially reduced HCU across all outcomes measured compared with placebo, as well as the severity of asthma exacerbations requiring hospitalization. Tezepelumab can reduce the overall burden of disease of severe, uncontrolled asthma.

Keywords: TSLP; biologic; emergency department visit; exacerbation; hospitalization.

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. 2023 May 30;9(3):00090-2023.

doi: 10.1183/23120541.00090-2023. eCollection 2023 May.

[Asthma innovations from the first International Collaborative Asthma Network forum](#)

[Benjamin Gaston](#)¹, [Donna D Gardner](#)², [Kenzie Mahan](#)¹, [Praveen Akuthota](#)³, [Eneida A Mendonca](#)^{1,4}, [Hannah Durrington](#)^{5,6}, [Nadzeya Marozkina](#)¹, [Rocio T Martinez-Nunez](#)⁷, [Dawn Newcomb](#)⁸, [Benjamin Ainsworth](#)⁹, [Arthur H Owora](#)¹, [Kian Fan Chung](#)¹⁰, [Samantha Walker](#)¹¹, [Stephen J Fowler](#)^{5,6}, [Salman Siddiqui](#)¹⁰, [Tonya Winders](#)², [Joe Zein](#)¹², [Nizar Jarjour](#)¹³, [Yvonne J Huang](#)¹⁴, [Katherine N Cahill](#)⁸, [Ratko Djukanovic](#)⁹

Affiliations expand

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- PMCID: [PMC10227632](#)
- DOI: [10.1183/23120541.00090-2023](#)

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Abstract

Background: Many patients have uncontrolled asthma despite available treatments. Most of the new asthma therapies have focused on type 2 (T2) inflammation, leaving an unmet need for innovative research into mechanisms of asthma beyond T2 and immunity. An international group of investigators developed the International Collaborative Asthma Network (ICAN) with the goal of sharing innovative research on disease mechanisms, developing new technologies and therapies, organising pilot studies and engaging early-stage career investigators from across the world. This report describes the purpose, development and outcomes of the first ICAN forum.

Methods: Abstracts were solicited from interdisciplinary early-stage career investigators with innovative ideas beyond T2 inflammation for asthma and were selected for presentation at the forum. Breakout sessions were conducted to discuss innovation, collaboration and research translation.

Results: The abstracts were categorised into: 1) general omics and big data analysis; 2) lung-brain axis and airway neurology; 3) sex differences; 4) paediatric asthma; 5) new therapeutic targets inspired by airway epithelial biology; 6) new therapeutics targeting airway and circulating immune mediators; and 7) lung anatomy, physiology and imaging. Discussions revealed that research groups are looking for opportunities to further their findings using larger scale collaboration and the ability to translate their *in vitro* findings into clinical treatment.

Conclusions: Through ICAN, teams that included interdisciplinary early-stage career investigators discussed innovation, collaboration and translation in asthma and severe asthma research. With a combination of fresh ideas and energetic, collaborative, global participation, ICAN has laid a firm foundation and model for future collaborative global asthma research.

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Conflict of interest statement

Conflict of interest: B. Gaston is a founder and equity holder in Respiratory Research, Inc., and Airbase Breathing Company. Conflict of interest: D.D. Gardner has nothing to disclose. Conflict of interest: K. Mahan is an equity holder in Atelerix Life Sciences, Inc. Conflict of interest: P. Akuthota reports consultancy fees and research funding from GlaxoSmithKline, AstraZeneca and Sanofi, and research funding from Regeneron. Conflict of interest: E.A. Mendonca has nothing to disclose. Conflict of interest: H. Durrington has provided paid consultancy work for Chiesi. Conflict of interest: N. Marozkina has nothing to disclose. Conflict of interest: R.T. Martinez-Nunez is funded by AstraZeneca and GlaxoSmithKline who had no input on this work. Conflict of interest: D. Newcomb has nothing to disclose. Conflict of interest: B. Ainsworth has received honoraria from AstraZeneca and Roche Ltd. Conflict of interest: A.H. Owora has nothing to disclose. Conflict of interest: K.F. Chung has received honoraria for participation on advisory board meetings of AstraZeneca, Roche, Merck, Novartis, GlaxoSmithKline, Nacion, Shionogi and Rickett-Beckinson, and has also been remunerated for speaking engagements for Sanofi, Novartis and AstraZeneca. Conflict of interest: S. Walker has no direct conflicts of interest regarding this work. Conflict of interest: S.J. Fowler has no direct conflicts of interest regarding this work. Conflict of interest: S. Siddiqui has no direct conflicts of interest regarding this work. Conflict of interest: T. Winders has no direct conflicts of interest regarding this work; however, her institution has received funding for unbranded disease awareness and education from AbbVie, ALK, Amgen, AstraZeneca, Incyte, Lilly, GlaxoSmithKline, Novartis, Pfizer, Sanofi/Regeneron and TEVA. Conflict of interest: J. Zein has nothing to disclose. Conflict of interest: N. Jarjour has received consulting fees from GlaxoSmithKline. Conflict of interest: Y.J. Huang has received payments for participating on advisory board meetings for Alveolus Bio. Conflict of interest: K.N. Cahill is an advisory board member for AstraZeneca, Regeneron, and GlaxoSmithKline, a consultant for Ribon Therapeutics, Third Harmonic Bio and Verantos, and receives investigational product support from NovoNordisk and royalties from UpToDate. Conflict of interest: R. Djukanovic has received payments for advisory boards and consulting from Sanofi, Kymab Cambridge and Synairgen; and he is the co-founder of Synairgen, in which he also has shares.

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Am J Respir Crit Care Med

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. 2023 Jun 1;207(11):e77-e96.
doi: 10.1164/rccm.202304-0642ST.

Questions in Mild Asthma: An Official American Thoracic Society Research Statement

[Arjun Mohan](#), [Njira L Lugogo](#), [Nicola A Hanania](#), [Helen K Reddel](#), [Praveen Akuthota](#), [Paul M O'Byrne](#), [Theresa Guilbert](#), [Alberto Papi](#), [David Price](#), [Christine R Jenkins](#), [Monica Kraft](#), [Leonard B Bacharier](#), [Louis-Phillippe Boulet](#), [Barbara P Yawn](#), [Roy Pleasants](#), [Stephen C Lazarus](#), [Richard Beasley](#), [Gail Gauvreau](#), [Elliot Israel](#), [Elena K Schneider-Futschik](#), [Arzu Yorgancioglu](#), [Fernando Martinez](#), [Wendy Moore](#), [Kaharu Sumino](#)

- PMID: 37260227
- DOI: [10.1164/rccm.202304-0642ST](https://doi.org/10.1164/rccm.202304-0642ST)

Abstract

Background: Patients with mild asthma are believed to represent the majority of patients with asthma. Disease-associated risks such as exacerbations, lung function decline, and death have been understudied in this patient population. There have been no prior efforts from major societies to describe research needs in mild asthma. **Methods:** A multidisciplinary, diverse group of 24 international experts reviewed the literature, identified knowledge gaps, and provided research recommendations relating to mild asthma definition, pathophysiology, and management across all age groups. Research needs were also investigated from a patient perspective, generated in conjunction with patients with asthma, caregivers, and stakeholders. Of note, this project is not a systematic review of the evidence and is not a clinical practice guideline. **Results:** There are multiple unmet needs in research on mild asthma driven by large knowledge gaps in all areas. Specifically, there is an immediate need for a robust mild asthma definition and an improved understanding of its pathophysiology and management strategies across all age groups. Future research must factor in patient perspectives. **Conclusions:** Despite significant advances in severe asthma, there remain innumerable research areas requiring urgent attention in mild asthma. An important first step is to determine a better definition that will accurately reflect the heterogeneity and risks noted in this group. This research statement highlights the topics of research that are of the highest priority. Furthermore, it firmly advocates the need for engagement with patient groups and for more support for research in this field.

Keywords: definition; management; mild asthma; pathophysiology; research needs.

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Effects of climate change on patients with respiratory and cardiovascular conditions

[Eleanor Squires](#)¹

Affiliations [expand](#)

- PMID: 37259785
- DOI: [10.7748/ns.2023.e12087](https://doi.org/10.7748/ns.2023.e12087)

Abstract

Climate change is one of the most significant global challenges and is already having detrimental effects on people's health. Pollution levels and ambient temperatures continue to increase, resulting in higher levels of humidity and pollen production. These environmental threats can affect many vulnerable patients, particularly those with respiratory and cardiovascular conditions, and nurses have a crucial role in raising awareness of the health implications of climate change. This article explores the pathophysiological effects of climate change on patients with asthma, chronic obstructive pulmonary disease and cardiovascular disease, and aims to enhance nurses' understanding of the health challenges of climate change.

Keywords: asthma; cardiorespiratory; chronic obstructive pulmonary disease; climate change and sustainability in healthcare; clinical; health promotion; lung diseases; public health; respiratory.

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Conflict of interest statement

None declared

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[Respir Med](#)

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. 2023 May 29;215:107299.

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Development of a diagnostic score using FeNO and symptoms to predict asthma

[Benjamin Brunn](#)¹, [Alexander Hapfelmeier](#)², [Rudolf A Jörres](#)³, [Konrad Schultz](#)⁴, [Antonius Schneider](#)⁵

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- PMID: 37257788
- DOI: [10.1016/j.rmed.2023.107299](https://doi.org/10.1016/j.rmed.2023.107299)

Abstract

Background: Fractional exhaled nitric oxide (FeNO) is known as effective for ruling-in asthma. The diagnostic value might be increased in combination with clinical signs and symptoms (CSS). The aim was to develop a new model for ruling-in and ruling-out asthma.

Methods: Diagnostic multi-centre study in three practices of pneumologists in Germany. Whole-body plethysmography was combined with bronchodilation tests or bronchial provocation as diagnostic reference standard. Follow-up was performed after 3 months. An expert committee evaluated test results, symptoms, and course of disease for the final diagnosis. Relevant CSS known from guidelines were used to enable combinatorial development of decision rules. Outcomes of multiple logistic regression modeling were translated into a diagnostic score and internally validated by ten-fold cross validation.

Results: 308 patients with complete follow-up were included. 186 (60.4%) were female, average age was 44.7 years and 161 (52.5%) had asthma. The average area under the receiver operating curve (AUC) of the diagnostic score was 0.755 (interquartile range 0.721-0.814). Allergic rhinitis, wheezing, dyspnea on exertion, coughing attacks at night, and awakening by shortness of breath were leading symptoms for ruling-in asthma. Frequent coughing and frequent respiratory infections were leading symptoms for ruling-out. The combination of FeNO and CSS allowed ruling-in asthma with a probability of up to 99%, and ruling-out with a post-test probability down to 9%.

Conclusion: The diagnostic scoring model increased the diagnostic value of FeNO in combination with CSS. The new decision rule allowed to rule-in asthma with high certainty, and also to rule-out with acceptable certainty.

Keywords: Asthma; Clinical decision rule; Diagnostic study; Fractional exhaled nitric oxide; Primary health care; Symptoms.

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Conflict of interest statement

Declaration of competing interest AS is an external expert for the Federal Joint Committee (Gemeinsamer Bundesausschuss) with regard to the development of the disease management programs for asthma and COPD; he received regular remuneration for taking part in the sessions. AS and KS are members of the National Asthma Guideline Board (Nationale Versorgungsleitlinie Asthma). The other authors declare that no conflicts of interest exist.

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Respir Med



. 2023 May 29;107302.

doi: 10.1016/j.rmed.2023.107302. Online ahead of print.

Comparing bronchial thermoplasty with biologicals for severe asthma: Systematic review and network meta-analysis

[Khi Yung Fong](#)¹, [Joseph J Zhao](#)¹, [Nicholas L Syn](#)¹, [Parameswaran Nair](#)², [Yiong Huak Chan](#)³, [Pyng Lee](#)⁴

Affiliations expand

- PMID: 37257786
- DOI: [10.1016/j.rmed.2023.107302](https://doi.org/10.1016/j.rmed.2023.107302)

Abstract

Background: Bronchial thermoplasty (BT) has shown favorable safety and efficacy in several randomized controlled trials (RCTs), but has not been directly compared to biological therapies.

Methods: Electronic literature searches were performed on PubMed, EMBASE, and the Cochrane Central Register of Controlled Trials, to retrieve RCTs of BT or FDA-approved biologicals against controls in patients with severe asthma. Six outcomes were analyzed: Asthma Control Questionnaire (ACQ), Asthma Quality of Life Questionnaire (AQLQ), the number of patients experiencing ≥ 1 asthma exacerbation, annualized exacerbation rate ratio (AERR), oral corticosteroid dose reduction (OCDR), and morning peak expiratory flow rate (amPEF). Random-effects, Frequentist network meta-analysis (NMA) were performed, and therapies were ranked using P-scores.

Results: Twenty-nine RCTs (15,547 patients) were included. Fewer patients treated with BT experienced ≥ 1 asthma exacerbation (risk ratio [RR] = 0.66, 95%CI = 0.45-0.98) compared to control. AERR of BT versus control was non-significant, but significant improvements in ACQ score (mean difference [MD] -0.41, 95%CI -0.63 to -0.20), AQLQ score (MD = 0.54, 95%CI = 0.30-0.77), amPEF and OCDR were found. No significant differences between BT and biologics were seen across indirect comparisons of all studies.

Conclusions: Despite the lack of head-to-head comparative trials, this NMA suggests that BT is non-inferior to biologicals in terms of quality-of-life scores, and represents a promising alternative for patients with severe asthma.

Keywords: Biologicals; Bronchial asthma; Bronchial thermoplasty; Meta-analysis.

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Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Parameswaran Nair reports a relationship with AZ that includes: consulting or advisory and funding grants. Parameswaran Nair reports a relationship with Novartis that includes: consulting or advisory and funding grants. Parameswaran Nair reports a relationship with Teva Pharmaceuticals USA Inc that includes: consulting or advisory and funding grants. Parameswaran Nair reports a relationship with Sanofi-Aventis US LLC that includes: funding grants. Parameswaran Nair reports a relationship with Roche that includes: consulting or advisory and funding grants. Parameswaran Nair reports a relationship with Merck that includes: consulting or advisory. Parameswaran Nair reports a relationship with Equilium that includes: consulting or advisory. Parameswaran Nair reports a relationship with Foresee Pharmaceuticals Co., Ltd. that includes: consulting or advisory.

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. 2023 May 31.

doi: 10.1056/NEJMoa2202318. Online ahead of print.

Variant *STAT4* and Response to Ruxolitinib in an Autoinflammatory Syndrome

[Hratch Baghdassarian¹](#), [Sarah A Blackstone¹](#), [Owen S Clay¹](#), [Rachael Philips¹](#), [Brynja Matthiasardottir¹](#), [Michele Nehrebecky¹](#), [Vivian K Hua¹](#), [Rachael McVicar¹](#), [Yang Liu¹](#), [Suzanne M Tucker¹](#), [Davide Randazzo¹](#), [Natalie Deutch¹](#), [Sofia Rosenzweig¹](#), [Adam Mark¹](#), [Roman Sasik¹](#), [Kathleen M Fisch¹](#), [Pallavi Pimpale Chavan¹](#), [Elif Eren¹](#), [Norman R Watts¹](#), [Chi A Ma¹](#), [Massimo Gadina¹](#), [Daniella M Schwartz¹](#), [Anwesha Sanyal¹](#), [Giffin Werner¹](#), [David R Murdock¹](#), [Nobuyuki Horita¹](#), [Shimul Chowdhury¹](#), [David Dimmock¹](#), [Kristen Jepsen¹](#), [Elaine F Remmers¹](#), [Raphaella Goldbach-Mansky¹](#), [William A Gahl¹](#), [John J O'Shea¹](#), [Joshua D Milner¹](#), [Nathan E Lewis¹](#), [Johanna Chang¹](#), [Daniel L Kastner¹](#), [Kathryn Torok¹](#), [Hirotugu Oda¹](#), [Christopher D Putnam¹](#), [Lori Broderick¹](#)

Affiliations expand

- PMID: 37256972
- DOI: [10.1056/NEJMoa2202318](https://doi.org/10.1056/NEJMoa2202318)

Abstract

Background: Disabling pansclerotic morphea (DPM) is a rare systemic inflammatory disorder, characterized by poor wound healing, fibrosis, cytopenias, hypogammaglobulinemia, and squamous-cell carcinoma. The cause is unknown, and mortality is high.

Methods: We evaluated four patients from three unrelated families with an autosomal dominant pattern of inheritance of DPM. Genomic sequencing independently identified three heterozygous variants in a specific region of the gene that encodes signal transducer and activator of transcription 4 (*STAT4*). Primary skin fibroblast and cell-line assays were used to define the functional nature of the genetic defect. We also assayed gene expression using single-cell RNA sequencing of peripheral-blood mononuclear cells to identify inflammatory pathways that may be affected in DPM and that may respond to therapy.

Results: Genome sequencing revealed three novel heterozygous missense gain-of-function variants in *STAT4*. In vitro, primary skin fibroblasts showed enhanced interleukin-6 secretion, with impaired wound healing, contraction of the collagen matrix, and matrix secretion. Inhibition of Janus kinase (JAK)-STAT signaling with ruxolitinib led to improvement in the hyperinflammatory fibroblast phenotype in vitro and resolution of

inflammatory markers and clinical symptoms in treated patients, without adverse effects. Single-cell RNA sequencing revealed expression patterns consistent with an immunodysregulatory phenotype that were appropriately modified through JAK inhibition.

Conclusions: Gain-of-function variants in *STAT4* caused DPM in the families that we studied. The JAK inhibitor ruxolitinib attenuated the dermatologic and inflammatory phenotype in vitro and in the affected family members. (Funded by the American Academy of Allergy, Asthma, and Immunology Foundation and others.).

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SUPPLEMENTARY INFO

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Observational Study

PLoS One

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. 2023 May 31;18(5):e0285830.

doi: 10.1371/journal.pone.0285830. eCollection 2023.

[Pulmonary function following hyperbaric oxygen therapy: A longitudinal observational study](#)

[Connor T A Brenna](#)¹, [Shawn Khan](#)², [George Djaiani](#)³, [Darren Au](#)⁴, [Simone Schiavo](#)^{1 3 4}, [Mustafa Wahaj](#)³, [Ray Janisse](#)³, [Rita Katznelson](#)^{1 3 4}

Affiliations expand

- PMID: 37256885

- PMID: [PMC10231819](#)
- DOI: [10.1371/journal.pone.0285830](#)

Free PMC article

Abstract

Hyperbaric oxygen therapy (HBOT) is known to be associated with pulmonary oxygen toxicity. However, the effect of modern HBOT protocols on pulmonary function is not completely understood. The present study evaluates pulmonary function test changes in patients undergoing serial HBOT. We prospectively collected data on patients undergoing HBOT from 2016-2021 at a tertiary referral center (protocol registration [NCT05088772](#)). Patients underwent pulmonary function testing with a bedside spirometer/pneumotachometer prior to HBOT and after every 20 treatments. HBOT was performed using 100% oxygen at a pressure of 2.0-2.4 atmospheres absolute (203-243 kPa) for 90 minutes, five times per week. Patients' charts were retrospectively reviewed for demographics, comorbidities, medications, HBOT specifications, treatment complications, and spirometry performance. Primary outcomes were defined as change in percent predicted forced expiratory volume in one second (FEV1), forced vital capacity (FVC), and forced mid-expiratory flow (FEF25-75), after 20, 40, and 60 HBOT sessions. Data was analyzed with descriptive statistics and mixed-model linear regression. A total of 86 patients were enrolled with baseline testing, and the analysis included data for 81 patients after 20 treatments, 52 after 40 treatments, and 12 after 60 treatments. There were no significant differences in pulmonary function tests after 20, 40, or 60 HBOT sessions. Similarly, a subgroup analysis stratifying the cohort based on pre-existing respiratory disease, smoking history, and the applied treatment pressure did not identify any significant changes in pulmonary function tests during HBOT. There were no significant longitudinal changes in FEV1, FVC, or FEF25-75 after serial HBOT sessions in patients regardless of pre-existing respiratory disease. Our results suggest that the theoretical risk of pulmonary oxygen toxicity following HBOT is unsubstantiated with modern treatment protocols, and that pulmonary function is preserved even in patients with pre-existing asthma, chronic obstructive lung disease, and interstitial lung disease.

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Conflict of interest statement

I have read the journal's policy and the authors of this manuscript have the following competing interests: RK is a shareholder in the Rouge Valley Hyperbaric Medical Center, Toronto, ON. This does not alter our adherence to PLOS ONE policies on sharing data and materials.

- [37 references](#)
- [5 figures](#)

SUPPLEMENTARY INFO

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Expert Rev Pharmacoecon Outcomes Res

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. 2023 May 31.

doi: [10.1080/14737167.2023.2220966](https://doi.org/10.1080/14737167.2023.2220966). Online ahead of print.

[Cost-effectiveness of Arg16Gly in ADRB2 pharmacogenomic-guided treatment for pediatric asthma](#)

[Xinyan Li](#)¹, [Yunyun Cao](#)²

Affiliations [expand](#)

- PMID: 37256257
- DOI: [10.1080/14737167.2023.2220966](https://doi.org/10.1080/14737167.2023.2220966)

Abstract

Objectives: To assess the cost-effectiveness of Arg16Gly ADRB2 pharmacogenomic testing compared with no Arg16Gly ADRB2 testing to guide the use of long-acting β_2 receptor agonist (LABA) in asthma patients aged 1 to 5 years in China.

Methods: This economic evaluation developed a Markov model with four health states (no exacerbation, mild exacerbation, moderate-to-severe exacerbation, and death). Transition probabilities were estimated from the rate of exacerbations, the case-fatality rate of patients hospitalized for exacerbations, and natural mortality. Costs included drug costs and exacerbation management costs. Cost inputs and utilities for each health state were gained from public databases and the literature. Costs and quality-adjusted life years (QALYs) were estimated for ten years. Deterministic and probabilistic sensitivity analyses were performed.

Results: In the base case analysis, in contrast to the group without the genotype test, the incremental total cost was -¥334.7, and the incremental QALY was 0.001 in the Arg16Gly ADRB2 genotyping group. Therefore, the Arg16Gly ADRB2 test group was the dominant strategy for children with asthma in China. The sensitivity analyses showed that the model was relatively stable.

Conclusion: Arg16Gly ADRB2 testing before using LABA is a cost-effective approach compared with no gene testing for pediatric asthma.

Keywords: Arg16Gly ADRB2 pharmacogenomic test; LABA; cost-effectiveness analysis; pediatric asthma; quality-adjusted life years.

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[Case Reports](#)

Respirol Case Rep

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. 2023 May 25;11(6):e01167.

doi: 10.1002/rcr2.1167. eCollection 2023 Jun.

Rapid onset of effect of benralizumab in a severe eosinophilic and allergic asthma patient with allergic bronchopulmonary aspergillosis

[Arvindran Alaga](#)¹, [Khairil Ashraff](#)¹, [Nurul Hana Din Khan](#)¹

Affiliations expand

- PMID: 37249921
- PMCID: [PMC10209721](#)
- DOI: [10.1002/rcr2.1167](#)

Free PMC article

Abstract

There is limited data on the use of benralizumab in patients with severe asthma, who have allergic bronchopulmonary aspergillosis (ABPA). We report the case of a 65-year-old woman with combined severe eosinophilic and allergic asthma, who presented with refractory respiratory symptoms, hypereosinophilia and high immunoglobulin E (IgE) level. The patient had consistently poor Asthma Control Test (ACT) scores, despite a maximum dose of inhalation therapy. Upon further investigations, she was diagnosed with concomitant ABPA. The patient was started on oral prednisolone and itraconazole, but her symptoms persisted. She was then started on subcutaneous omalizumab, but switched to benralizumab after developing a severe allergic reaction. The patient experienced rapid clinical improvements after the first dose of subcutaneous benralizumab. Benralizumab demonstrated a significant role in reducing the exacerbation rate and oral corticosteroid use in this patient, as well as improving lung function, asthma control, and quality of life measures.

Keywords: allergic asthma; allergic bronchopulmonary aspergillosis; benralizumab; case report; eosinophilic asthma.

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Conflict of interest statement

Arvindran Alaga, Khairil Ashraff, and Nurul Hana Din Khan declare no conflict of interest.

- [12 references](#)
- [2 figures](#)

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Clin Exp Allergy

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. 2023 May 29.

doi: 10.1111/cea.14352. Online ahead of print.

[Cochrane corner: Macrolides versus placebo for chronic asthma](#)

[Alison Garde](#)¹

Affiliations [expand](#)

- PMID: 37248677
- DOI: [10.1111/cea.14352](https://doi.org/10.1111/cea.14352)

No abstract available

Keywords: antibiotic resistance; asthma; asthma phenotypes; macrolide.

- [9 references](#)

FULL TEXT LINKS



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22

JB1 Evid Synth

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. 2023 May 29.

doi: 10.11124/JBIES-23-00006. Online ahead of print.

Preclinical models of maternal asthma and progeny outcomes: a scoping review protocol

[Joshua L Robinson](#)^{1,2,3}, [Kathy L Gatford](#)^{1,4}, [Vicki L Clifton](#)⁵, [Jana L Morrison](#)³, [Michael J Stark](#)^{1,2,6}

[Affiliations expand](#)

- PMID: 37246955
- DOI: [10.11124/JBIES-23-00006](https://doi.org/10.11124/JBIES-23-00006)

Abstract

Objective: This scoping review will describe the methodology, phenotype, and characteristics of maternal asthma models used in preclinical studies and the outcomes that have been measured in the mother and progeny. This will identify gaps in knowledge of maternal and progeny outcomes following maternal asthma in pregnancy.

Introduction: Maternal asthma affects up to 17% of pregnancies worldwide and is associated with adverse perinatal outcomes in mothers and babies, including pre-eclampsia, gestational diabetes, Cesarean section, preterm birth, small for gestational age, nursery admission, and neonatal death. While the associations are well established, the mechanisms linking maternal asthma and adverse perinatal outcomes are largely unknown due to the difficulties of human mechanistic studies. The appropriate selection of animal

models is vital to understanding the mechanisms underlying associations between human maternal asthma and adverse perinatal outcomes.

Inclusion criteria: This review will include primary studies published in English where outcomes have been studied in vivo in non-human mammalian species.

Methods: This review will follow the JBI methodology for scoping reviews. We will search the electronic databases of MEDLINE (PubMed), Embase, and Web of Science to identify papers published before the end of 2022. Initial keywords will include pregnancy, gestation, asthma, and wheeze, as well as validated search strings to identify papers that describe animal models. Extracted data will include information on methods used to induce maternal asthma; asthmatic phenotypes and characteristics; and maternal, pregnancy, placental, and progeny outcomes. The characteristics of each study will be presented in summary tables and a core outcome list to assist researchers in developing, reporting, and comparing future animal studies of maternal asthma.

Review registration number: Open Science Framework: <https://osf.io/trwk5>.

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Conflict of interest statement

The authors declare no conflict of interest.

- [32 references](#)

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Clin Exp Allergy

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. 2023 May 29.

doi: 10.1111/cea.14348. Online ahead of print.

Co-treatment of non-steroidal anti-inflammatory drug-exacerbated respiratory disease with dupilumab and aspirin therapy after desensitization

[Kathleen M Buchheit](#)¹, [Jonathan Hacker](#)², [Rie Maurer](#)³, [Alanna McGill](#)², [Tessa Ryan](#)², [Jillian C Bensko](#)², [Tanya M Laidlaw](#)¹

Affiliations expand

- PMID: 37246613
- DOI: [10.1111/cea.14348](https://doi.org/10.1111/cea.14348)

No abstract available

Keywords: NSAID-exacerbated respiratory disease; aspirin desensitization; aspirin therapy after desensitization; aspirin-exacerbated respiratory disease; asthma; chronic rhinosinusitis; dupilumab; nasal polyps.

- [9 references](#)

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[Review](#)

Curr Opin Allergy Clin Immunol

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. 2023 Jun 1;23(3):199-204.

doi: 10.1097/ACI.0000000000000899. Epub 2023 Apr 12.

Type-2-low severe asthma endotypes for new treatments: the new asthma frontier

[Kian Fan Chung](#)¹

Affiliations expand

- PMID: 37185823
- DOI: [10.1097/ACI.0000000000000899](https://doi.org/10.1097/ACI.0000000000000899)

Abstract

Purpose of review: Type-2 (T2)-high asthma represents a well defined group of severe eosinophilic asthma for which there are now effective biologic therapies targetting the interleukins (ILs) 4, 5 and 13, and Immunoglobulin E. T2-low asthma detected in the clinic by a low blood eosinophil count remains ill-defined and is the focus of this review.

Recent findings: By analysing transcriptomic and proteomic expression in sputum samples in U-BIOPRED cohort, both T2-high and -low molecular phenotypes have been described. Using clustering approaches, a neutrophilic-predominant cluster associated with activation markers of neutrophilic and inflammasome activation with interferon and tumour necrosis factor expression, together with a cluster of paucigranulocytic inflammation linked to oxidative phosphorylation and senescence pathways have been described. Using gene set variation analysis, specific molecular phenotypes driven by IL-6 trans-signalling pathway, or those by IL-6, IL-17 and IL-22 pathways were identified linked to a mixed granulocytic or neutrophilic inflammation.

Summary: Previous trials of antineutrophilic agents in asthma have failed because enrolled patients were not specifically chosen for these targeted treatments. Although the T2-low molecular pathways should be validated in other cohorts, the availability of targeted therapies indicated for other autoimmune conditions should encourage a trial of these respective biological therapies for these specific molecular phenotypes.

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- [36 references](#)

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Case Reports

Respirol Case Rep

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. 2023 May 11;11(6):e01158.

doi: 10.1002/rcr2.1158. eCollection 2023 Jun.

Severe asthma remaining well-controlled after mepolizumab discontinuation: A case report and literature review

[Takahiro Matsuyama](#)¹, [Yuya Tomioka](#)¹, [Hiromi Matsuyama](#)¹, [Yusuke Kamenohara](#)¹, [Kengo Tanigawa](#)¹, [Yoichi Dotake](#)¹, [Yoko Hagihara](#)¹, [Koichi Takagi](#)¹, [Kentaro Machida](#)¹, [Hiromasa Inoue](#)¹

Affiliations expand

- PMID: 37180095
- PMCID: [PMC10173049](#)
- DOI: [10.1002/rcr2.1158](#)

Abstract

Mepolizumab, a humanized anti-IL-5 monoclonal antibody used for severe asthma, results in a reduced rate of asthma exacerbation, improved lung function, reduced oral corticosteroid use, and improved quality of life. A 62-year-old man using high-dose inhaled corticosteroid visited our hospital because of poorly-controlled asthma. He had eosinophilia in peripheral blood and sputum, and high levels of fraction of exhaled nitric oxide. Therefore, he was treated with mepolizumab for severe asthma. Mepolizumab treatment resulted in significantly improved pulmonary function and reduced frequencies of asthma exacerbations. Because of his good asthma control, mepolizumab treatment was discontinued after 3 years. Since discontinuing mepolizumab, his asthma control has remained without exacerbation. Previous studies suggest that mepolizumab should be continued to sustain clinical benefits. However, cases of long-term controlled asthma have not been reported after mepolizumab withdrawal, and our case may be instructive.

Keywords: asthma control; eosinophil; mepolizumab; severe asthma.

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Conflict of interest statement

Hiromasa Inoue reports grants from Boehringer-Ingelheim, GlaxoSmithKline, Kyorin and Ono with all payments going to his affiliated institution, and personal fees from AstraZeneca, Boehringer-Ingelheim, GlaxoSmithKline, Kyorin, Novartis and Sanofi. Hiromasa Inoue reports payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events to AstraZeneca, Boehringer-Ingelheim, GlaxoSmithKline, Kyorin, Novartis and Sanofi. Hiromasa Inoue has participation on a data safety monitoring advisory board to AstraZeneca, GlaxoSmithKline, Novartis and Sanofi. Hiromasa Inoue reports leadership or fiduciary role in Board of Directors in Japanese Respiratory Society, unpaid.

- [16 references](#)
- [3 figures](#)

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Review

J Exp Med

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. 2023 Jun 5;220(6):e20221094.

doi: 10.1084/jem.20221094. Epub 2023 May 10.

T helper 2 cells in asthma

[James A Harker](#)¹, [Clare M Lloyd](#)¹

Affiliations expand

- PMID: 37163370
- PMCID: [PMC10174188](#)
- DOI: [10.1084/jem.20221094](#)

Free PMC article

Abstract

Allergic asthma is among the most common immune-mediated diseases across the world, and type 2 immune responses are thought to be central to pathogenesis. The importance of T helper 2 (Th2) cells as central regulators of type 2 responses in asthma has, however, become less clear with the discovery of other potent innate sources of type 2 cytokines and innate mediators of inflammation such as the alarmins. This review provides an update of our current understanding of Th2 cells in human asthma, highlighting their many guises and functions in asthma, both pathogenic and regulatory, and how these are influenced by the tissue location and disease stage and severity. It also explores how biologics targeting type 2 immune pathways are impacting asthma, and how these have the potential to reveal hitherto underappreciated roles for Th2 cell in lung inflammation.

Conflict of interest statement

Disclosures: the authors declare no competing interests exist.

- [164 references](#)
- [3 figures](#)

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Publication types, MeSH terms, Substancesexpand

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Review

Nat Rev Rheumatol

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. 2023 Jun;19(6):378-393.

doi: 10.1038/s41584-023-00958-w. Epub 2023 May 9.

Evidence-Based Guideline for the diagnosis and management of eosinophilic granulomatosis with polyangiitis

[Giacomo Emmi](#)^{1,2}, [Alessandra Bettiol](#)¹, [Elena Gelain](#)³, [Ingeborg M Bajema](#)⁴, [Alvise Berti](#)^{5,6}, [Stella Burns](#)⁷, [Maria C Cid](#)^{8,9}, [Jan W Cohen Tervaert](#)^{10,11}, [Vincent Cottin](#)¹², [Eugenia Durante](#)¹³, [Julia U Holle](#)¹⁴, [Alfred D Mahr](#)¹⁵, [Marcos Martinez Del Pero](#)^{7,16}, [Chiara Marvisi](#)¹⁷, [John Mills](#)¹⁸, [Sergey Moiseev](#)¹⁹, [Frank Moosig](#)¹⁴, [Chetan Mukhtyar](#)²⁰, [Thomas Neumann](#)¹⁵, [Iacopo Olivetto](#)²¹, [Carlo Salvarani](#)^{22,23}, [Benjamin Seeliger](#)²⁴, [Renato A](#)

[Sinico](#)^{25 26}, [Camille Taillé](#)²⁷, [Benjamin Terrier](#)²⁸, [Nils Venhoff](#)²⁹, [George Bertsias](#)^{30 31}, [Loïc Guillevin](#)³², [David R W Jayne](#)^{33 34}, [Augusto Vaglio](#)^{35 36}

Affiliations expand

- PMID: 37161084
- DOI: [10.1038/s41584-023-00958-w](https://doi.org/10.1038/s41584-023-00958-w)

Abstract

Eosinophilic granulomatosis with polyangiitis (EGPA) is a rare anti-neutrophil cytoplasmic antibody (ANCA)-associated vasculitis, characterized by asthma, eosinophilia and granulomatous or vasculitic involvement of several organs. The diagnosis and management of EGPA are often challenging and require an integrated, multidisciplinary approach. Current practice relies on recommendations and guidelines addressing the management of ANCA-associated vasculitis and not specifically developed for EGPA. Here, we present evidence-based, cross-discipline guidelines for the diagnosis and management of EGPA that reflect the substantial advances that have been made in the past few years in understanding the pathogenesis, clinical subphenotypes and differential diagnosis of the disease, as well as the availability of new treatment options. Developed by a panel of European experts on the basis of literature reviews and, where appropriate, expert opinion, the 16 statements and five overarching principles cover the diagnosis and staging, treatment, outcome and follow-up of EGPA. These recommendations are primarily intended to be used by healthcare professionals, pharmaceutical industries and drug regulatory authorities, to guide clinical practice and decision-making in EGPA. These guidelines are not intended to limit access to medications by healthcare agencies, nor to impose a fixed order on medication use.

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- [120 references](#)

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Editorial

Lancet Child Adolesc Health

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. 2023 Jun;7(6):367.

doi: 10.1016/S2352-4642(23)00110-4. Epub 2023 May 1.

Asthma care for all: mind the missing middle years

[The Lancet Child Adolescent Health](#)

- PMID: 37141909
- DOI: [10.1016/S2352-4642\(23\)00110-4](https://doi.org/10.1016/S2352-4642(23)00110-4)

No abstract available

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Publication types, MeSH termsexpand

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Case Reports

Am J Emerg Med

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. 2023 Jun;68:213.e5-213.e9.

Inhaled volatile anesthetic gas for severe bronchospasm in the emergency department

[Osman Adi](#)¹, [Farah Nuradhwa Apoo](#)², [Chan Pei Fong](#)², [Azma Haryaty Ahmad](#)², [Nurul Liana Roslan](#)³, [Faheem Ahmed Khan](#)⁴, [Shahridan Fathil](#)⁵

Affiliations expand

- PMID: 37120400
- DOI: [10.1016/j.ajem.2023.04.032](https://doi.org/10.1016/j.ajem.2023.04.032)

Abstract

Bronchospasm is caused by reversible constriction of the smooth muscles of the bronchial tree. This causes obstruction of the lower airways, which is commonly seen at the emergency department (ED) in patients with acute exacerbation of asthma or chronic obstructive pulmonary disease. Ventilation may be difficult in mechanically intubated patients with severe bronchospasm due to airflow limitation, air trapping, and high airway resistance. The beneficial effects of volatile inhaled anesthetic gas had been reported due to its bronchodilation properties. In this case series, we would like to share our experience delivering inhaled volatile anesthetic gas via a conserving device for three patients with refractory bronchospasm at the ED. Inhaled anesthetic gas is safe, feasible and should be considered as an alternative rescue therapy for ventilated patients with severe lower airway obstruction.

Keywords: Emergency department; Inhaled volatile anesthetic gas; Severe bronchospasm; Status asthmaticus.

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Conflict of interest statement

Declaration of Competing Interest None.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances expand

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J Asthma

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. 2023 May 31;1-5.

doi: 10.1080/02770903.2023.2209172. Online ahead of print.

Bronchodilator responsiveness testing with inhaled budesonide/formoterol in asthma

[Luis J Nannini](#)^{1,2}, [N Brandan](#)¹, [O M Fernández](#)¹

Affiliations [expand](#)

- PMID: 37115806
- DOI: [10.1080/02770903.2023.2209172](https://doi.org/10.1080/02770903.2023.2209172)

Abstract

Background: The choice of bronchodilators for responsiveness testing (BRT) is a clinical decision according to ATS/ERS. Since January 2019 we use budesonide/formoterol for BRT in asthma at our center in Argentina. The aim was to compare budesonide/formoterol with salbutamol for BRT in stable asthmatic patients that were followed up in a short-acting beta₂ agonist (SABA)-free asthma center.

Methods: From the Hospital database, we found for the same patient at least one BRT using salbutamol 200 µg and another with budesonide/formoterol 320/9 µg.

Results: We found similar BRT between salbutamol and budesonide/formoterol in 101 asthmatic individuals (26 males) aged 38.14 ± 16.1 yrs (mean \pm Standard deviation). The absolute response was 0.18 ± 0.21 L in FEV₁ after salbutamol and 0.20 ± 0.22 L in FEV₁ after

budesonide/formoterol. Afterwards, we showed 202 patients tested with budesonide/formoterol; the mean absolute response was 0.21 ± 0.22 L in FEV₁. There were no unexpected safety findings.

Conclusions: In asthmatic patients, we demonstrated similar efficacy between Budesonide/formoterol and salbutamol for BRT.

Keywords: Asthma; bronchodilator responsiveness; budesonide/formoterol; salbutamol; spirometry.

FULL TEXT LINKS



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Semin Respir Crit Care Med

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. 2023 Jun;44(3):317-326.

doi: 10.1055/s-0043-1766117. Epub 2023 Apr 18.

Global Trends in Occupational Lung Disease

[Robert A Cohen](#)¹, [Leonard H T Go](#)¹, [Cecile S Rose](#)^{2,3}

Affiliations expand

- PMID: 37072021
- DOI: [10.1055/s-0043-1766117](https://doi.org/10.1055/s-0043-1766117)

Abstract

Lung diseases caused by workplace exposure are too often mis- or underdiagnosed due in part to nonexistent or inadequate health surveillance programs for workers. Many of these diseases are indistinguishable from those that occur in the general population and are not recognized as being caused at least in part by occupational exposures. More than 10% of

all lung diseases are estimated to result from workplace exposures. This study reviews recent estimates of the burden of the most important occupational lung diseases using data published by United Nations specialized agencies as well as the Global Burden of Disease studies. We focus on occupational chronic respiratory disease of which chronic obstructive lung disease and asthma are the most significant. Among occupational cancers, lung cancer is the most common, and is associated with more than 10 important workplace carcinogens. Classic occupational interstitial lung diseases such as asbestosis, silicosis, and coal workers' pneumoconiosis still comprise a substantial burden of disease in modern industrial societies, while other occupational causes of pulmonary fibrosis and granulomatous inflammation are frequently misclassified as idiopathic. Occupational respiratory infections gained prominence during the severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) pandemic, eclipsing influenza and tuberculosis and other less common workplace infectious agents. The most significant risks are workplace exposures to particulate matter, gases, and fumes as well as occupational carcinogens and asthmagens. We present data on the burden of disease measured by deaths attributable to occupational respiratory disease as well as disability-adjusted years of life lost. Where available, prevalence and incidence data are also presented. These diseases are unique in that they are theoretically 100% preventable if appropriate exposure controls and workplace medical surveillance are implemented. This remains a continuing challenge globally and requires steadfast commitment on the part of government, industry, organized labor, and the medical profession.

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Conflict of interest statement

None declared.

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[Review](#)

Semin Respir Crit Care Med

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. 2023 Jun;44(3):370-377.

doi: 10.1055/s-0043-1764407. Epub 2023 Apr 17.

Deployment-Related Respiratory Disease: Where Are We?

[Silpa D Krefft](#)^{1,2,3,4}, [Lauren M Zell-Baran](#)^{1,5}

Affiliations expand

- PMID: 37068518
- DOI: [10.1055/s-0043-1764407](https://doi.org/10.1055/s-0043-1764407)

Free article

Abstract

Military personnel and veterans who have deployed to Afghanistan, Iraq, and parts of Southwest Asia (SWA) since 1990 are at risk of developing a host of respiratory symptoms and deployment-related respiratory diseases (DRRDs). This review aims to summarize our current understanding of DRRD and inform pulmonary practitioners of recent updates to DRRD screening, diagnosis, evaluation, and management. The most common respiratory diseases in these patients include asthma, chronic sinonasal disease, laryngeal disease/dysfunction, and distal lung disease. Pulmonary function testing and chest imaging are the most commonly used diagnostic tools, but techniques such as lung clearance index testing via multiple breath washout, forced oscillation testing/impulse oscillometry, and quantitative chest computed tomography (CT) assessment appear promising as noninvasive modalities to aid in lung disease detection in this population. We also summarize guidance on conducting an occupational and deployment exposure history as well as recommendations for testing. Finally, we discuss the Sergeant First Class Heath Robinson Honoring our Promise to Address Comprehensive Toxics Act of 2022 (PACT Act) that includes a list of health conditions that are "presumptively" considered to be related to SWA military deployment toxic exposures, and provide resources for clinicians who evaluate and treat patients with DRRD.

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Conflict of interest statement

None declared.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Supplementary conceptsexpand

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Adv Ther

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. 2023 Jun;40(6):2577-2594.

doi: 10.1007/s12325-023-02479-0. Epub 2023 Apr 7.

[A Charter to Fundamentally Change the Role of Oral Corticosteroids in the Management of Asthma](#)

[John Haughney](#)¹, [Tonya Winders](#)^{2,3}, [Steve Holmes](#)⁴, [Pascal Chanez](#)⁵, [Andrew Menzies-Gow](#)⁶, [Janwillem Kocks](#)^{7,8,9,10}, [Adel H Mansur](#)¹¹, [Christopher McPherson](#)¹², [Giorgio Walter Canonica](#)^{13,14}

Affiliations expand

- PMID: 37027115
- PMCID: [PMC10080509](#)
- DOI: [10.1007/s12325-023-02479-0](#)

Abstract

Asthma affects 339 million people worldwide, with an estimated 5-10% experiencing severe asthma. In emergency settings, oral corticosteroids (OCS) can be lifesaving, but acute and long-term treatment can produce clinically important adverse outcomes and increase the risk of mortality. Therefore, global guidelines recommend limiting the use of OCS. Despite the risks, research indicates that 40-60% of people with severe asthma are receiving or have received long-term OCS treatment. Although often perceived as a low-cost option, long-term OCS use can result in significant health impairments and costs owing to adverse outcomes and increased utilization of healthcare resources. Alternative treatment methods, such as biologics, may produce cost-saving benefits with a better safety profile. A comprehensive and concerted effort is necessary to tackle the continued reliance on OCS. Accordingly, a threshold for OCS use should be established to help identify patients at risk of OCS-related adverse outcomes. Receiving a total dose of more than 500 mg per year should trigger a review and specialist referral. Changes to national and local policies, following examples from other chronic diseases, will be crucial to achieving this goal. Globally, multiple barriers to change still exist, but specific steps have been identified to help clinicians reduce reliance on OCS. Implementing these changes will result in positive health outcomes for patients and social and economic benefits for societies.

Keywords: Asthma; Long-term; Oral corticosteroids.

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Conflict of interest statement

John Haughney has consultancy agreements with AstraZeneca for the PRECISION program and has received consulting or speaker fees from AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, and Teva. Tonya Winders has received consulting and speaker fees from AstraZeneca, GlaxoSmithKline, Sanofi, Regeneron, ALK-Abelló, and Novartis. Steve Holmes has consultancy agreements with AstraZeneca for the PRECISION program and has received consulting or speaker fees from AstraZeneca, Beximco, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Johnson & Johnson, Mylan, Napp, Novartis, Nutricia, Orion, Pfizer, Sandoz, Teva, and Trudell Medical International. Pascal Chanez has consultancy agreements with AstraZeneca for the PRECISION program and has received research and consulting funding from AstraZeneca, Ammirall, Boehringer Ingelheim, Centocor, GlaxoSmithKline, Merck Sharp & Dohme, Novartis, Teva, Chiesi, and Schering-Plough. Andrew Menzies-Gow reports consultancy agreements with AstraZeneca and Sanofi; was an advisory board member for AstraZeneca, GlaxoSmithKline, Novartis, Sanofi, Regeneron, and Teva; received speaker fees from AstraZeneca, Novartis, Teva, and Sanofi; has participated in research that his institution has been remunerated for from AstraZeneca

and has attended international conferences sponsored by Teva. Janwillem Kocks reports grants, personal fees, and nonfinancial support from AstraZeneca, Boehringer Ingelheim, and GlaxoSmithKline; reports grants and personal fees from Chiesi and Teva; reports grants from Mundi Pharma; has received personal fees from Merck Sharp & Dohme; has received personal fees from Covis Pharma outside of the submitted work; and holds 72.5% of shares in the General Practitioners Research Institute. Adel H. Mansur has received personal and institutional payments for talks and advisory board meetings, as well as grants from AstraZeneca, GlaxoSmithKline, Novartis, Teva, Sanofi, Boehringer Ingelheim, and Cheisi. Christopher McPherson is an employee of AstraZeneca. Giorgio Walter Canonica has previously received grant or research support from Boehringer Ingelheim, ALK-Abelló, and Stallergenes and honoraria or consultation fees from Menarini, GlaxoSmithKline, Sanofi, Teva, Hal, AstraZeneca, and Novartis.

- [81 references](#)
- [1 figure](#)

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Respirology

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. 2023 Jun;28(6):571-574.

doi: 10.1111/resp.14498. Epub 2023 Mar 28.

[Monoclonal antibody therapy in cystic fibrosis and asthma](#)

[Huy Duc Vu](#)¹, [Eskandarain Shafuddin](#)^{1,2}, [Jane Willis](#)¹, [Michael Pallin](#)¹, [David Armstrong](#)¹, [Christopher Daley](#)¹

Affiliations expand

- PMID: 36978257
- DOI: [10.1111/resp.14498](https://doi.org/10.1111/resp.14498)

Free article

No abstract available

Keywords: asthma; cystic fibrosis; monoclonal antibodies.

- [14 references](#)

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Case Reports

ESC Heart Fail

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. 2023 Jun;10(3):2107-2112.

doi: 10.1002/ehf2.14244. Epub 2023 Mar 25.

Churg–Strauss syndrome–associated heart failure and left ventricular thrombosis

[Sotiria Liori](#)¹, [Eleftherios Samiotis](#)¹, [Dionysia Birba](#)¹, [Pelagia Katsimbri](#)², [Maria Mademli](#)³, [Eleni Bakola](#)⁴, [Georgios Tsivgoulis](#)⁴, [Estela Quris](#)¹, [Michael Bonios](#)⁵, [Maria Kalabaliki](#)¹, [Dimitrios Farmakis](#)⁶, [John Parissis](#)¹, [Alexandra Frogoudaki](#)¹

Affiliations expand

- PMID: 36965162
- PMCID: [PMC10192261](#)
- DOI: [10.1002/ehf2.14244](#)

Free PMC article

Abstract

We present a case of a 47-year-old woman with a history of asthma and mononeuritis who presented with shortness of breath and fatigue. Heart failure was diagnosed and echocardiography revealed large floating thrombi attached to the left ventricular walls. Cardiac magnetic resonance imaging showed evidence of myocarditis and angiitis. Blood count revealed eosinophilia. She was diagnosed with eosinophilic granulomatosis with polyangiitis or Churg-Strauss syndrome (CSS) according to recently updated criteria. Medical management with specific aetiology (anticoagulation or immunosuppression) and heart failure treatment resulted in clinical improvement. We further discuss the diagnostic approach of CSS with cardiovascular complications and therapeutic management.

Keywords: Churg-Strauss syndrome; Eosinophilic granulomatosis with polyangiitis; Heart failure; Left ventricular thrombus; Myocarditis.

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Conflict of interest statement

None declared.

- [14 references](#)
- [6 figures](#)

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

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Ann Allergy Asthma Immunol

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. 2023 Jun;130(6):776-783.e3.

doi: 10.1016/j.anai.2023.03.015. Epub 2023 Mar 21.

Sputum inflammatory, neural, and remodeling mediators in eosinophilic and noneosinophilic asthma

[Hajar Ali](#)¹, [Jeroen Douwes](#)², [Jeroen Burmanje](#)², [Prachee Gokhale](#)², [Julian Crane](#)³, [Philip Pattermore](#)⁴, [Thorsten Stanley](#)⁵, [Jacqueline Keenan](#)⁶, [Collin Brooks](#)²

Affiliations expand

- PMID: 36958472
- DOI: [10.1016/j.anai.2023.03.015](https://doi.org/10.1016/j.anai.2023.03.015)

Abstract

Background: Neural and remodeling mechanisms may play a role in asthma, particularly noneosinophilic asthma (NEA).

Objective: To assess sputum mediators associated with neural, remodeling, and inflammatory mechanisms in eosinophilic asthma (EA), NEA, and participants without asthma.

Methods: A total of 111 participants with and 62 without asthma (14-21 years old) underwent sputum induction, exhaled nitric oxide, atopy, and spirometry tests. There were 24 mediators measured in sputum using enzyme-linked immunosorbent assay or bead array. Eosinophilic asthma (n = 52) and NEA (n = 59) were defined using a sputum eosinophil level cut-point of greater than or equal to 2.5%.

Results: Elevated levels of nociceptin (median: 39.1 vs 22.4 ng/mL, $P = .03$), periostin (33.8 vs 9.4 ng/mL, $P = .01$), and ECP; (220.1 vs 83.7 ng/mL, $P = .03$) were found in patients with asthma compared with those without asthma. Nociceptin was elevated in EA (54.8 vs 22.4 ng/mL, $P = .02$) compared with participants without asthma. Eosinophilic asthma had higher levels of inflammatory mediators (ECP: 495.5 vs 100.3 ng/mL, $P \leq .01$; interleukin-1 β : 285.3 vs 209.3 pg/mL, $P = .03$; histamine: 5805.0 vs 3172.5 pg/mL, $P < .01$) and remodeling mediators (VEGF-A); 3.3 vs 2.5 ng/mL, $P = .03$; periostin: 47.7 vs 22.1 ng/mL, $P = .04$) than NEA. Whereas macrophages were associated with neural mediators, for example, neurokinin A ($r = 0.27$, $P = .01$) and nociceptin ($r = 0.30$, $P = .02$), granulocytes were associated with inflammatory and remodeling mediators (eg, ECP and VEGF-A correlated with neutrophils ($r = 0.53$ and $r = 0.33$, respectively, $P < .01$) and eosinophils ($r = 0.53$ and $r = 0.29$ respectively, $P \leq .01$).

Conclusion: Elevated levels of nociceptin and inflammatory and remodeling markers were found in EA, but no evidence for neural and remodeling pathways was found in NEA. Neural and remodeling mechanisms seem to coexist with inflammation.

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[Review](#)

Pediatr Pulmonol

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. 2023 Jun;58(6):1640-1650.

doi: 10.1002/ppul.26387. Epub 2023 Mar 17.

[Severe asthma guidelines in children and adolescents: A practical document for physicians](#)

[Federica Porcaro](#)¹, [Nicola Ullmann](#)¹, [Antonio Di Marco](#)¹, [Annalisa Allegorico](#)¹, [Claudio Cherchi](#)¹, [Maria Giovanna Paglietti](#)¹, [Renato Cutrera](#)¹

Affiliations expand

- PMID: 36929867
- DOI: [10.1002/ppul.26387](https://doi.org/10.1002/ppul.26387)

Abstract

Asthma is a common disease in childhood with a minority of affected children suffering from severe asthma. Patients with severe asthma require high dose inhaled glucocorticoids plus a second controller and/or systemic corticosteroids to be well-controlled or remain uncontrolled despite such treatment. Although only a small subset of children and adolescents falls in this category, the management of affected patients represents a major concern for pediatricians. Guidelines and recommendations have been designed to guide the management of this group of patients. Though the terms "recommendations" and "guidelines" are often used interchangeably, it should be noted that the first one should be used more narrowly to identify specific actions and the second one to broadly refer to the umbrella under which multiple recommendations for a specific condition are provided. Moreover, the availability of several and sometimes-conflicting documents on severe asthma management both in adult and pediatric age could generate confusion among health care professionals. The manuscript analyses seven papers addressing severe asthma, comparing any key aspects and differences. Finally, we tried to create a more practical document for physicians to simplify the interpretation of the several available documents on severe asthma management focusing the pediatric age.

Keywords: asthma; children; guidelines; recommendations; severe asthma.

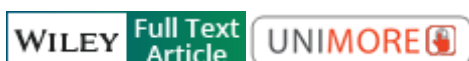
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38

Clinical Trial

Pediatr Pulmonol

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. 2023 Jun;58(6):1719-1727.

doi: 10.1002/ppul.26386. Epub 2023 Mar 17.

Dexamethasone versus methylprednisolone for critical asthma: A single center, open-label, parallel-group clinical trial

[Meghan R Roddy](#)¹, [Austin R Sellers](#)², [Kristina K Darville](#)³, [Beatriz Teppa-Sanchez](#)³, [Scott D McKinley](#)⁴, [Meghan Martin](#)⁵, [Neil A Goldenberg](#)^{2,6,7}, [Thomas A Nakagawa](#)⁸, [Anthony A Sochet](#)^{2,3,9}

Affiliations expand

- PMID: 36929864
- DOI: [10.1002/ppul.26386](https://doi.org/10.1002/ppul.26386)

Abstract

Background: Evidence for the use of dexamethasone for pediatric critical asthma is limited. We sought to compare the clinical efficacy and safety of dexamethasone versus methylprednisolone among children hospitalized in the pediatric intensive care unit (PICU) for critical asthma.

Methods: A prospective, single center, open-label, two-arm, parallel-group, nonrandomized trial among children ages 5-17 years hospitalized within the PICU from April 2019 to December 2021 for critical asthma consented to receive methylprednisolone (standard care) or dexamethasone (intervention) at a 2:1 allocation ratio, respectively. The intervention arm received intravenous dexamethasone 0.25 mg/kg/dose (max: 15 mg/dose) every 6 h for 48 h and the standard care arm intravenous methylprednisolone 1

mg/kg/dose every 6 h (max dose: 60 mg/dose) for 5 days. Study endpoints were clinical efficacy (i.e., length of stay [LOS], continuous albuterol duration, and a composite of adjunctive asthma interventions) and safety (i.e., corticosteroid-related adverse events).

Results: Ninety-two participants were analyzed of whom 31 were allocated to the intervention arm and 61 the standard care arm. No differences in demographics, clinical characteristics, or acute/chronic asthma severity indices were observed. Regarding efficacy and safety endpoints, no differences in hospital LOS, continuous albuterol duration, adjunctive asthma intervention rates, or corticosteroid-related adverse events were noted. Compared to the intervention arm, participants in the standard care arm more frequently were prescribed corticosteroids at discharge (72% vs. 13%, $p < 0.001$).

Conclusions: Among children hospitalized for critical asthma, dexamethasone appears safe and warrants further investigation to fully assess clinical efficacy and potential advantages over commonly applied agents such as methylprednisolone.

Keywords: corticosteroids; glucocorticoids; pediatric critical care medicine; pediatric intensive care unit; status asthmaticus.

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Ann Allergy Asthma Immunol

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. 2023 Jun;130(6):797-804.e2.

doi: 10.1016/j.anai.2023.03.006. Epub 2023 Mar 15.

House dust mite sublingual immunotherapy tablet safety in adolescents with allergic rhinoconjunctivitis: Worldwide clinical trial results

[Andreas Horn](#)¹, [David I Bernstein](#)², [Kimihiro Okubo](#)³, [Terrie Dalgaard](#)⁴, [Ole Hels](#)⁴, [Helle Frobøse Sørensen](#)⁴, [Marianne Henriksen](#)⁴, [Ryuji Azuma](#)⁵, [Jan Mikler](#)⁶, [Hendrik Nolte](#)⁷

Affiliations expand

- PMID: 36924936
- DOI: [10.1016/j.anai.2023.03.006](https://doi.org/10.1016/j.anai.2023.03.006)

Free article

Abstract

Background: The house dust mite (HDM) sublingual immunotherapy (SLIT)-tablet is a treatment option for allergic rhinitis with/without conjunctivitis (AR/C) approved in adults worldwide and in adolescents in some countries.

Objective: To supplement existing adolescent HDM SLIT-tablet safety data by conducting the MT-18 trial in adolescents.

Methods: MT-18 (EudraCT:2020-000446-34) was a phase 3, open-label, single-arm, 28-day safety trial of daily HDM SLIT-tablet (12 SQ-HDM dose) in European adolescents (12-17 years) with HDM AR/C, with or without asthma. The primary end point was at least 1 treatment-emergent adverse event (TEAE). MT-18 results were compared with 12 SQ-HDM adolescent subpopulation data from previously described 1-year phase 3 trials conducted in North America (P001; [clinicaltrials.gov:NCT01700192](https://clinicaltrials.gov/NCT01700192)) or Japan (TO-203-3-2; JapicCTI:121848).

Results: No treatment-related anaphylaxis, epinephrine administrations, severe local swellings, severe mouth or throat edema, or eosinophilic esophagitis occurred in the trials. For MT-18 (N = 253), P001 (N adolescents = 189), and TO-203-3-2 (N adolescents = 206), the percentage of adolescents treated with 12 SQ-HDM reporting any TEAE was 88%, 95%, and 93%, respectively, and the percentage reporting any treatment-related AE (TRAЕ) was 86%, 93%, and 66%, respectively. The most common TRAЕs were local application site

reactions. Most TRAEs were mild in intensity and were typically experienced the first 1 to 2 days of treatment. There were no asthma-related TEAEs with the HDM SLIT-tablet. The safety profile appears similar between adolescents with or without asthma at baseline.

Conclusion: The HDM SLIT-tablet was well tolerated in European, North American, and Japanese adolescents with HDM AR/C, indicating safety of the HDM SLIT-tablet is insensitive to age or geographic region.

Trial registration: ClinicalTrials.gov Identifier: (P001: [NCT01700192](https://clinicaltrials.gov/ct2/show/study/NCT01700192)); EudraCT: (MT-18; 2020-000446-34); JapicCTI: (TO-203-3-2; 121848).

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. 2023 May 30;BJGPO.2023.0020.

doi: 10.3399/BJGPO.2023.0020. Online ahead of print.

[Characteristics of patients with asthma overprescribed short-acting beta-agonist \(SABA\) reliever inhalers stratified by blood eosinophil count in North East London: a cross-sectional observational study](#)

[Paul Pfeffer](#)¹, [Hajar Hajmohammadi](#)², [James Cole](#)², [Chris Griffiths](#)², [Sally Hull](#)², [Anna De Simoni](#)²

Affiliations expand

- PMID: 36921995
- DOI: [10.3399/BJGPO.2023.0020](https://doi.org/10.3399/BJGPO.2023.0020)

Free article

Abstract

Background: Overprescription of short-acting beta-agonist (SABA) inhalers and blood eosinophil count have strong associations with exacerbation risk in asthma. However, in the authors' recent publication only a minority of patients overprescribed SABA (≥ 6 inhalers in 12 months) were eosinophilic ($\geq 0.3 \times 10^9$ cells/l).

Aim: To compare the characteristics of eosinophilic and non-eosinophilic patients with asthma overprescribed SABA inhalers, and identify latent classes using clinical variables available in primary care.

Design & setting: Cross-sectional analysis of patients with asthma in North East London, England, using primary care electronic health record data.

Method: Unadjusted and adjusted multi-variate regression models and latent class analysis.

Results: Eosinophilia was significantly less likely in female patients ($P = 0.004$), those with multiple mental health comorbidities ($P < 0.001$), and those with SABA on repeat prescription ($P < 0.001$). Latent class analysis identified the following three classes of patients overprescribed SABA: class 1, which represents classical uncontrolled asthma (oral steroids required for exacerbations, step 2-3 asthma medications, high probability of being eosinophilic); class 2, which represents mild asthma (low exacerbation frequency, low asthma medication step, low probability of being eosinophilic); and class 3, which represents difficult asthma (high exacerbation frequency despite high-strength preventer inhalers, low probability of being eosinophilic). The mild asthma class was the largest.

Conclusion: Many patients being overprescribed SABA were non-eosinophilic with a low exacerbation frequency, suggesting disproportionately high SABA prescription compared with other asthma control markers. Potential reasons for high SABA prescription in these patients included repeat prescription (being dispensed but not taken) and use of SABA for non-asthma breathlessness (for example, breathing pattern disorders with anxiety). Further

research is needed into management of SABA overuse in patients without other markers of uncontrolled asthma.

Keywords: albuterol; asthma; general practice; primary health care; short-acting beta-agonist.

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Ann Am Thorac Soc

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. 2023 Jun;20(6):815-824.

doi: 10.1513/AnnalsATS.202207-578OC.

[Vaping and Health Service Use: A Canadian Health Survey and Health Administrative Data Study](#)

[Teresa To](#)^{1,2}, [Cornelia M Borkhoff](#)^{1,2}, [Chung-Wai Chow](#)^{2,3}, [Theo J Moraes](#)⁴, [Robert Schwartz](#)², [Nick Vozoris](#)⁵, [Anne Van Dam](#)⁶, [Chris Langlois](#)⁷, [Kimball Zhang](#)¹, [Emilie Terebessy](#)¹, [Jingqin Zhu](#)¹

Affiliations expand

- PMID: 36920751
- DOI: [10.1513/AnnalsATS.202207-578OC](https://doi.org/10.1513/AnnalsATS.202207-578OC)

Abstract

Rationale: Emerging research suggests that e-cigarette (EC) use may have detrimental health effects, increasing the burden on healthcare systems. **Objectives:** To determine

whether young EC users had increased asthma, asthma attacks, and health services use (HSU). **Methods:** This cohort study used the linked Canadian Community Health Survey (cycles 2015-16 and 2017-18) and health administrative data (January 2015-March 2018). A propensity score method matched self-reported EC users to up to five control subjects. Matched multivariable logistic and negative binomial regressions were used to calculate odds ratios, rate ratios (RRs), and 95% confidence intervals (CIs) with EC use as the exposure and asthma, asthma attacks, and all-cause HSU as the outcomes. **Results:** Analyses included 2,700 matched Canadian Community Health Survey participants (15-30 yr), 505 (2.4% of 20,725 participants) EC users matched to 2,195 nonusers. After adjusting for confounders, EC users with asthma had over twofold higher odds of having an asthma attack in the last 12 months (odds ratio, 2.30; 95% CI, 1.29-4.12). Dual EC and conventional tobacco users had a twofold increased all-cause HSU rate compared with nonusers who never smoked tobacco (RR, 2.13; 95% CI, 1.53-2.98). This rate was greater than that for EC users who never smoked tobacco (RR, 1.73; 95% CI, 1.00-3.00) and non-EC users who regularly smoke tobacco (RR, 1.72; 95% CI, 1.29-2.29). Compared with male nonusers, female EC users had the highest increased all-cause HSU (RR, 1.94; 95% CI, 1.39-2.69) over male EC users and female nonusers (RR, 1.13; 95% CI, 0.86-1.48; RR, 1.41; 95% CI, 1.16-1.71, respectively). **Conclusions:** Current EC use is associated with significantly increased odds of having an asthma attack. Furthermore, concurrent EC use and conventional cigarette smoking are associated with a higher rate of all-cause HSU. The odds of asthma attack and all-cause HSU were highest among women. Thus, EC use may be an epidemiological biomarker for youth and young adults with increased health morbidity.

Keywords: asthma; e-cigarette; health services use; smoking; vaping.

SUPPLEMENTARY INFO

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Environ Res

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. 2023 Jun 1;226:115679.

doi: 10.1016/j.envres.2023.115679. Epub 2023 Mar 11.

Effect of extreme temperatures on asthma hospital visits: Modification by event characteristics and healthy behaviors

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Affiliations expand

- PMID: 36913996
- DOI: [10.1016/j.envres.2023.115679](https://doi.org/10.1016/j.envres.2023.115679)

Abstract

Although ambient temperature has been linked to asthma exacerbation, impacts associated with extreme temperature events remain unclear. This study aims to identify the events characteristics that elevate risk of asthma hospital visits, and to assess whether healthy behavior changes due to the COVID-19 prevention and control policy may modify the relationships. Data of asthma hospital visits from all medical facilities in Shenzhen, China during 2016-2020 were assessed in relation to extreme temperature events using a distributed lag model. Stratified analysis was conducted by gender, age and hospital department to identify susceptible populations. Through events defined by various duration days and temperature thresholds, we explored the modification by events intensity, length, occurrence time and healthy behaviors. The cumulative relative risk of asthma during heat waves compared to other days was 1.06 (95%CI: 1.00-1.13) and for cold spells was 1.17 (95%CI: 1.05-1.30), and that of males and school-aged children were generally higher than other sub-groups. There were significant effects of heat waves and cold spells on asthma hospital visits when the mean temperature was above 90th percentile (30 °C) and below 10th percentile (14 °C) respectively, and the relative risks were higher when events lasted longer, became stronger, occurred in daytime and in early summer or winter. During the healthy behaviors maintaining period, the risk of heat waves increased whilst the risk of cold spells reduced. Extreme temperatures may pose considerable impact on asthma and the health effect can be modified by the event characteristics and anti-epidemic healthy behaviors. Strategies of asthma control should consider the heightened threats of the intense and frequent extreme temperature events in the context of climate change.

Keywords: Asthma; Effect modification; Extreme temperature; Healthy behaviors; Hospital visits.

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Conflict of interest statement

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

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

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Am J Ind Med

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. 2023 Jun;66(6):529-539.

doi: 10.1002/ajim.23472. Epub 2023 Mar 12.

Work-related asthma consequences on socioeconomic, asthma control, quality of life, and psychological status compared with non-work-related asthma: A cross-sectional study in an upper-middle-income country

[Lavinia Clara Del Roio](#)¹, [Rafael Stelmach](#)¹, [Rafael F Mizutani](#)¹, [Mario Terra-Filho](#)¹, [Ubiratan D P Santos](#)¹

Affiliations expand

- PMID: 36906884
- DOI: [10.1002/ajim.23472](https://doi.org/10.1002/ajim.23472)

Abstract

Background: Work-related asthma (WRA) is the most prevalent occupational respiratory disease, and it has negative effects on socioeconomic standing, asthma control, quality of life, and mental health status. Most of the studies on WRA consequences are from high-income countries; there is a lack of information on these effects in Latin America and in middle-income countries.

Methods: This study compared socioeconomic, asthma control, quality of life, and psychological outcomes among individuals diagnosed with WRA and non-work-related asthma (NWRA) in a middle-income country. Patients with asthma, related and not related to work, were interviewed using a structured questionnaire to assess their occupational history and socioeconomic conditions, and with questionnaires to assess asthma control (Asthma Control Test and Asthma Control Questionnaire-6), quality of life (Juniper's Asthma Quality of Life Questionnaire), and presence of anxiety and depression symptoms (Hospital Anxiety and Depression Scale). Each patient's medical record was reviewed for exams and use of medication, and comparisons were made between individuals with WRA and NWRA.

Results: The study included 132 patients with WRA and 130 with NWRA. Individuals with WRA had worse socioeconomic outcomes, worse asthma control, more quality-of-life impairment, and a higher prevalence of anxiety and depression than individuals with NWRA. Among individuals with WRA, those who had been removed from occupational exposure had a worse socioeconomic impact.

Conclusions: Consequences on socioeconomic, asthma control, quality of life, and psychological status are worse for WRA individuals when compared with NWRA.

Keywords: occupational asthma; quality of life; socioeconomic; work-exacerbated asthma; work-related asthma.

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44

J Asthma

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. 2023 May 31;1-8.

doi: 10.1080/02770903.2023.2185895. Online ahead of print.

[Dupilumab long-term efficacy in patients with non-OCS-dependent asthma with and without evidence of allergic asthma](#)

[Lawrence D Sher](#)¹, [Jonathan Corren](#)², [Ian D Pavord](#)³, [Nadia Daizadeh](#)⁴, [Arman Altincatal](#)⁴, [Xavier Soler](#)⁵, [Michel Djandji](#)⁴, [Amr Radwan](#)⁵, [Juby A Jacob-Nara](#)⁶, [Yamo Deniz](#)⁵, [Paul J Rowe](#)⁶

Affiliations expand

- PMID: 36876957
- DOI: [10.1080/02770903.2023.2185895](https://doi.org/10.1080/02770903.2023.2185895)

Abstract

Objective: The open-label extension TRAVERSE study ([NCT02134028](#)) assessed dupilumab long-term safety and efficacy in patients who completed Phase 2/3 dupilumab asthma studies. This post hoc analysis evaluated long-term efficacy in type 2 patients with and without evidence of allergic asthma who enrolled in TRAVERSE from Phase 3 QUEST ([NCT02414854](#)) and Phase 2b ([NCT01854047](#)) studies. Non-type 2 patients with evidence of allergic asthma were also assessed.

Methods: Unadjusted annualized exacerbation rates during parent study and TRAVERSE treatment period, and changes from parent study baseline in pre-bronchodilator forced expiratory volume in 1 s (FEV₁) and in 5-item Asthma Control Questionnaire (ACQ-5) scores were assessed in patients from QUEST and Phase 2b; change from parent study baseline in total IgE level was assessed in patients enrolled from Phase 2b.

Results: 2062 patients from Phase 2b and QUEST enrolled in TRAVERSE. Of these, 969 were type 2 with evidence of allergic asthma; 710 were type 2 without evidence of allergic asthma; and 194 were non-type 2 with evidence of allergic asthma at parent study baseline. In these populations, reductions in exacerbation rates observed during parent studies were sustained during TRAVERSE. Type 2 patients who switched from placebo arm to dupilumab in TRAVERSE experienced similar reductions in severe exacerbation rates, and improvements in lung function and asthma control to those patients who already received dupilumab during the parent study.

Conclusion: Dupilumab efficacy was sustained for up to 3 years in patients with uncontrolled, moderate-to-severe type 2 inflammatory asthma, with or without evidence of allergic asthma. ClinicalTrials.gov identifier: [NCT02134028](https://clinicaltrials.gov/ct2/show/study/NCT02134028).

Keywords: ACQ-5; IgE; exacerbation; long-term; lung function; pre-bronchodilator FEV₁; type 2.

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Associated dataexpand

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Curr Opin Endocrinol Diabetes Obes

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. 2023 Jun 1;30(3):167-174.

doi: 10.1097/MED.0000000000000804. Epub 2023 Mar 6.

Glucocorticoid withdrawal syndrome: what to expect and how to manage

[Verena Theiler-Schwetz](#)^{1,2}, [Alessandro Prete](#)^{1,3,4,5}

Affiliations expand

- PMID: 36876715
- DOI: [10.1097/MED.0000000000000804](https://doi.org/10.1097/MED.0000000000000804)

Abstract

Purpose of review: Glucocorticoid withdrawal syndrome (GWS) can develop after withdrawing exposure to supraphysiological levels of endogenous or exogenous glucocorticoids due to an established physical dependence. It is characterised by symptoms similar to adrenal insufficiency but needs to be regarded as a separate entity. GWS is often under-recognised in clinical practice and affected patients can experience significant impairment in their quality of life.

Recent findings: A cornerstone in GWS management is adequate patient education and reassurance that symptoms are expected and typically temporary. Patients with endogenous Cushing's syndrome need to be aware that psychopathology may persist into the postoperative period. GWS is more likely to develop in severe Cushing's syndrome and in patients with very low levels of cortisol after surgery. Postoperatively, glucocorticoid replacement should be initiated and tapered in an individualised approach but there is currently no consensus on the best tapering strategy. If symptoms of GWS develop, glucocorticoid replacement ought to be temporarily increased to the previous, well tolerated dose. No randomised studies have thus far compared regimens for withdrawing glucocorticoids after treatment for anti-inflammatory or immunosuppressive causes to determine the best and safest tapering strategy. One open-label, single-arm trial in patients with asthma has recently proposed a personalised glucocorticoid tapering regimen which included the systematic assessment of adrenal function.

Summary: Awareness of GWS by treating physicians and patient education are essential. Evidence on optimal GWS management after Cushing's syndrome treatment is scarce, but new data are emerging for tapering after long-term glucocorticoid treatment.

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- [Cited by 1 article](#)
- [45 references](#)

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Curr Opin Pediatr

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. 2023 Jun 1;35(3):337-343.

doi: 10.1097/MOP.0000000000001235. Epub 2023 Mar 2.

Socioeconomic determinants of asthma health

[Tregony Simoneau](#)¹, [Jonathan M Gaffin](#)

Affiliations expand

- PMID: 36861771
- PMCID: PMC10160003 (available on 2024-06-01)
- DOI: [10.1097/MOP.0000000000001235](https://doi.org/10.1097/MOP.0000000000001235)

Abstract

Purpose of review: The current review provides an assessment of the recent pediatric literature evaluating socioeconomic drivers of asthma incidence and morbidity. The review addresses the specific social determinants of health related to housing, indoor and

outdoor environmental exposures, healthcare access and quality, and the impact of systematic racism.

Recent findings: Many social risk factors are associated with adverse asthma outcomes. Children living in low-income, urban neighborhoods have greater exposure to both indoor and outdoor hazards, including molds, mice, second-hand smoke, chemicals, and air pollutants, all of which are associated with adverse asthma outcomes. Providing asthma education in the community - via telehealth, school-based health centers, or peer mentors - are all effective methods for improving medication adherence and asthma outcomes. The racially segregated neighborhoods created by the racist 'redlining' policies implemented decades ago, persist today as hotspots of poverty, poor housing conditions, and adverse asthma outcomes.

Summary: Routine screening for social determinants of health in clinical settings is important to identify the social risk factors of pediatric patients with asthma. Interventions targeting social risk factors can improve pediatric asthma outcomes, but more studies are needed related to social risk interventions.

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Conflict of interest statement

Dr. Gaffin received consulting fees from Syneos Health in the past 18 months. Dr. Gaffin receives research funding from NIH and Vertex pharmaceuticals. Dr. Simoneau does not report any conflicts of interest.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances, Grant supportexpand

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[Review](#)

World J Pediatr

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. 2023 Jun;19(6):549-556.
doi: 10.1007/s12519-023-00701-1. Epub 2023 Mar 1.

Risk of asthma in preterm infants with bronchopulmonary dysplasia: a systematic review and meta-analysis

[Tong Sun](#)¹, [Hai-Yang Yu](#)², [Miao Yang](#)¹, [Yi-Fan Song](#)¹, [Jian-Hua Fu](#)²

Affiliations expand

- PMID: 36857022
- PMCID: [PMC10198915](#)
- DOI: [10.1007/s12519-023-00701-1](#)

Free PMC article

Abstract

Background: This study aimed to systematically review and meta-analyze the available literature on the association between preterm infant bronchopulmonary dysplasia (BPD) and pre-adulthood asthma.

Methods: Studies examining the association between BPD and asthma in children and adolescents were systematically reviewed, and a meta-analysis was conducted. We searched Scopus, Embase, Web of Science, PubMed, and Cochrane Library from the database inception to March 26, 2022. The pooled odds ratio (OR) estimate was used in our meta-analysis to calculate the correlation between BPD and the probability of developing asthma before adulthood. Stata 12.0 was used to conduct the statistical analysis.

Results: The correlation between asthma and BPD in preterm newborns was examined in nine studies. We used a random effect model to pool the OR estimate. Our results indicated a marked increase in the risk of subsequent asthma in preterm infants with BPD [OR = 1.73, 95% confidence interval (CI) = 1.43-2.09]. Moreover, there was no obvious heterogeneity across the studies ($P = 0.617$, $I^2 = 0\%$). The pooled OR remained stable and ranged from 1.65 (95% CI = 1.35-2.01) to 1.78 (95% CI = 1.43-2.21). Regarding publication bias, the funnel plot for asthma risk did not reveal any noticeable asymmetry. We further

performed Begg's and Egger's tests to quantitatively evaluate publication bias. There was no evidence of a publication bias for asthma risk ($P > |Z| = 0.602$ for Begg's test, and $P > |t| = 0.991$ for Egger's test).

Conclusions: Our findings indicate that preterm infants with BPD have a much higher risk of developing asthma in the future (OR = 1.73, 95% CI = 1.43-2.09). Preterm infants with BPD may benefit from long-term follow-up.

Keywords: Asthma; Bronchopulmonary dysplasia; Preterm infants.

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Conflict of interest statement

No financial or non-financial benefits have been received or will be received from any party related directly or indirectly to the subject of this article. The authors have no conflict of interest to declare.

- [36 references](#)
- [4 figures](#)

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[Review](#)

Pediatr Pulmonol

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. 2023 Jun;58(6):1631-1639.

doi: 10.1002/ppul.26370. Epub 2023 Mar 3.

RSV through the COVID-19 pandemic: Burden, shifting epidemiology, and implications for the future

[Renato T Stein](#)¹, [Heather J Zar](#)^{2,3}

Affiliations expand

- PMID: 36811330
- DOI: [10.1002/ppul.26370](https://doi.org/10.1002/ppul.26370)

Abstract

Respiratory syncytial virus (RSV) represents a major global healthcare burden, particularly in those under 5 years of age. There is no available vaccine, with treatment limited to supportive care or palivizumab for high-risk children. Additionally, although a causal relationship has not been established, RSV has been associated with the development of asthma or wheezing in some children. The COVID-19 pandemic and the introduction of nonpharmaceutical interventions (NPIs) have caused substantial changes to RSV seasonality and epidemiology. Many countries have experienced an absence of RSV during the time of a typical season, followed by an out-of-season surge upon relaxation of NPI use. These dynamics have disrupted traditional RSV disease patterns and assumptions, but also provide a unique opportunity to learn more about the transmission of RSV and other respiratory viruses, as well as inform future approaches to RSV preventive strategies. Here, we review the RSV burden and epidemiology through the COVID-19 pandemic and discuss how new data may affect future decisions regarding RSV prevention.

Keywords: COVID-19 pandemic; RSV; children; epidemiology; human respiratory syncytial virus.

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- [97 references](#)

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances, Grant supportexpand

FULL TEXT LINKS

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. 2023 Jun 1;96(1146):20220630.

doi: 10.1259/bjr.20220630. Epub 2023 Mar 3.

MR imaging of the airways

[Juergen Biederer](#) ^{1 2 3 4}

Affiliations [expand](#)

- PMID: 36752590
- PMCID: [PMC10230378](#)
- DOI: [10.1259/bjr.20220630](#)

Free PMC article

Abstract

The need for airway imaging is defined by the limited sensitivity of common clinical tests like spirometry, lung diffusion (DLCO) and blood gas analysis to early changes of peripheral airways and to inhomogeneous regional distribution of lung function deficits. Therefore, X-ray and computed tomography (CT) are frequently used to complement the standard tests. As an alternative, magnetic resonance imaging (MRI) offers radiation-free lung imaging, but at lower spatial resolution. Non-contrast enhanced MRI shows healthy airways down to the first subsegmental level/4th order (CT: eighth). Bronchiectasis can be identified by wall thickening and fluid accumulation. Smaller airways become visible, when altered by peribronchiolar inflammation or mucus retention (tree-in-bud sign). The strength of MRI is functional imaging. Dynamic, time-resolved MRI directly visualizes expiratory

airway collapse down to the lobar level (CT: segmental level). Obstruction of even smaller airways becomes visible as air trapping on the expiratory scans. MRI with hyperpolarized noble gases (^3He , ^{129}Xe) directly shows the large airways and peripheral lung ventilation. Dynamic contrast-enhanced MRI (DCE MRI) indirectly shows airway dysfunction as perfusion deficits resulting from hypoxic vasoconstriction of the dependent lung volumes. Further promising scientific approaches such as non-contrast enhanced, ventilation-/perfusion-weighted MRI from periodic signal changes of respiration and blood flow are in development. In summary, MRI of the lungs and airways excels with its unique combination of morphologic and functional imaging capacities for research (e.g., in chronic obstructive lung disease or asthma) as well as for clinical imaging (e.g., in cystic fibrosis).

Conflict of interest statement

Funding Open Access funding enabled and organized by Projekt DEAL.

- [64 references](#)
- [6 figures](#)

SUPPLEMENTARY INFO

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J Community Health

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. 2023 Jun;48(3):508-512.

doi: 10.1007/s10900-023-01192-x. Epub 2023 Jan 31.

[Disparities in Asthma Rates Amongst Black Residents of New York City](#)

[Rachelle Monteau](#)¹, [Rose Calixte](#)²

Affiliations [expand](#)

- PMID: 36719534
- DOI: [10.1007/s10900-023-01192-x](https://doi.org/10.1007/s10900-023-01192-x)

Abstract

Asthma is a chronic respiratory condition affecting around 300 million people worldwide. In the United States, Black individuals have a higher burden of asthma than White individuals. The goal of this study was to differentiate the burden of asthma between US-born and foreign-born Black residents of New York City (NYC). We use a multivariable Cox proportional hazard model with a robust variance estimate. The results indicate that foreign-born Black NYC residents have a significantly lower asthma prevalence than US-born (PR = 0.40, 95% CI = 0.21-0.76). Additionally, those 65 years and older have a lower prevalence of asthma compared to those 18-34 years old. This study shows that asthma prevalence is higher amongst US-born Black NYC residents than foreign-born, which may indicate that the healthcare needs of the foreign-born may be different from that of the native-born. Further studies are needed to elucidate this result fully.

Keywords: Asthma; Black/African American; Disparities; Immigrant; Prevalence.

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- [13 references](#)

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[Review](#)

Lancet Respir Med

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. 2023 Jun;11(6):573-576.

doi: 10.1016/S2213-2600(22)00490-8. Epub 2023 Jan 27.

A²BCD: a concise guide for asthma management

[Marek Lommatzsch](#)¹, [Guy G Brusselle](#)², [Mark L Levy](#)³, [G Walter Canonica](#)⁴, [Ian D Pavord](#)⁵, [Michael Schatz](#)⁶, [Johann Christian Virchow](#)⁷

Affiliations expand

- PMID: 36716752
- DOI: [10.1016/S2213-2600\(22\)00490-8](https://doi.org/10.1016/S2213-2600(22)00490-8)

Abstract

The management of asthma has changed fundamentally during the past two decades. Precise assessment and phenotyping are now required to establish individually targeted treatment with disease-modifying anti-asthmatic drugs (DMAADs). Patients with asthma are often managed by primary care doctors or non-respiratory specialists in secondary care. However, the implementation of complex asthma guidelines in non-specialised care remains a challenge. There is a need for easy-to-understand, concise guides for general practice. In this Viewpoint, we propose a one-page practical guide for asthma management, titled A²BCD, with four components: dual assessment (A²) of asthma (ie, diagnosis and phenotype, plus asthma control and future risks); basic measures (B; eg, education, self-management skills, regular physical activity, and avoidance of asthma triggers); identification and treatment of comorbidities (C) of asthma (eg, chronic rhinosinusitis, obesity, or sleep apnoea); and phenotype-specific, individually targeted treatment with DMAADs (D), including individual inhalation schemes based on inhaled corticosteroids, leukotriene modifiers, biologics, and allergen immunotherapy.

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Conflict of interest statement

Declaration of interests ML has received grants for research or clinical trials, paid to his institution, from AstraZeneca, Deutsche Forschungsgemeinschaft, and GlaxoSmithKline. He has received consulting fees or honoraria for lectures from ALK; Allergopharma; AstraZeneca; Berlin-Chemie; Boehringer Ingelheim; Chiesi; GlaxoSmithKline; HAL Allergy; Leti; Novartis; Merck, Sharp & Dohme; Sanofi; and Teva. He has received travel expenses

from AstraZeneca and Novartis. GGB has received research funding, paid to his institution, from Merck, Sharp & Dohme and fees for advisory board membership and lectures from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Novartis, and Sanofi. MLL has received consultancy fees from Chiesi, Clement Clarke International, Respi (Australia), SmartRespiratory, and Teva; fees for advisory board participation from AstraZeneca, Chiesi, GlaxoSmithKline, Novartis, Orion Pharmaceuticals, and Trudel Pharmaceuticals; fees from Chiesi for data safety monitoring board participation; lecture fees from AstraZeneca, Chiesi, Menarini, Novartis, Orion Pharmaceuticals, Soar Beyond, and Teva; conference sponsorship from Chiesi, Orion Pharmaceuticals, and Napp; travel expenses and accommodation support from Orion and the Global Initiative for Asthma; an educational grant from Consorzio Futuro in Ricerca for work as a member of the ADMIT group; accommodation support from NAPP and Chiesi; fees for clinical leadership and mentorship and for assessment and reporting of outcomes from the National Services for Health Improvement; and fees as lead for asthma in developing dashboards for clinical care from Whole Systems Integrated Care, North West London. GWC has received consulting fees from AstraZeneca, Chiesi, GlaxoSmithKline, HAL Allergy, Menarini, Novartis, Regeneron, Sanofi, and Stallergenes; and honoraria for lectures from AstraZeneca, Chiesi, GlaxoSmithKline, HAL Allergy Menarini, Novartis, and Stallergens. IDP has received a research grant from Chiesi. He has received consultancy fees from Almirall; AstraZeneca; Boehringer Ingelheim; Chiesi; Circassia; Dey Pharma; Genentech; GlaxoSmithKline; Knopp Biosciences; Merck; Merck, Sharp & Dohme; Napp Pharmaceuticals; Novartis; Regeneron; RespiVert; Sanofi; Schering-Plough; and Teva. He has received payments to support US Food and Drug Administration approval meetings from GlaxoSmithKline; speaker's fees from Aerocrine, Almirall, AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Novartis, Regeneron, Sanofi, and Teva; scientific meeting sponsorship from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Napp Pharmaceuticals, Regeneron, Sanofi, and Teva; and payment for the organisation of educational events from AstraZeneca, GlaxoSmithKline, Regeneron, Sanofi, and Teva. MS has received research funding, paid to his institution, from ALK; and royalties for educational contributions from UpToDate. MS is Editor-in-Chief of the Journal of Allergy and Clinical Immunology: In Practice and Principal Investigator for the Vaccines and Medications in Pregnancy Surveillance System. JCV has received grants for research from Deutsche Forschungsgemeinschaft; GlaxoSmithKline; and Merck, Sharp & Dohme. He has received consulting fees from Avontec; Boehringer Ingelheim; Chiesi; Essex, Schering-Plough; GlaxoSmithKline; Janssen-Cilag; MEDA; Merck, Sharp & Dohme; Mundipharma; Novartis; Regeneron; Revotar; Roche; Sandoz-Hexal; Sanofi-Aventis; Teva; and UCB, Schwarz-Pharma. He has received honoraria for lectures from AstraZeneca; Avontec; Bayer; Bencard; Bionorica; Boehringer Ingelheim; Chiesi; Essex, Schering-Plough; GlaxoSmithKline; Janssen-Cilag; Leti; MEDA; Merck; Merck, Sharp & Dohme; Mundipharma; Novartis; Nycomed, Altana; Pfizer; Revotar; Sandoz-Hexal; Stallergens; Teva; UCB, Schwarz-Pharma; and Zydus, Cadila. He has received fees for data safety monitoring board participation from Chiesi; and travel support from Sanofi and Boehringer Ingelheim.

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Allergy

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. 2023 Jun;78(6):1628-1638.

doi: 10.1111/all.15645. Epub 2023 Jan 24.

Fatal and near-fatal anaphylaxis: The Allergy-Vigilance® Network data (2002–2020)

[Guillaume Pouessel](#)^{1,2}, [Sabrina Alonzo](#)¹, [Amandine Divaret-Chauveau](#)³, [Pascale Dumond](#)³, [Eléna Bradatan](#)⁴, [Valérie Liabeuf](#)⁵, [Pascale Beaumont](#)⁶, [Sélina Tscheiller](#)⁷, [Rémy Diesnis](#)⁸, [Jean-Marie Renaudin](#)⁹, [Dominique Sabouraud-Leclerc](#)¹⁰, [Allergy-Vigilance® Network](#)

Affiliations expand

- PMID: 36645170
- DOI: [10.1111/all.15645](https://doi.org/10.1111/all.15645)

Abstract

Background: Having a better understanding of the risk factors of severe anaphylaxis is a crucial challenge for physicians.

Methods: To retrospectively analyse fatal/near-fatal anaphylaxis cases recorded by the Allergy-Vigilance® Network (2002-2020) and evaluate the characteristics associated with survival, age and allergens.

Results: Among the 3510 anaphylaxis cases documented in the network, 70 (2%) patients (males: 57%; mean age: 35.4 y) presented grade 4 (Ring-Messmer) anaphylaxis and 25 died (19 food-related); 33% had a history of asthma. The main allergens were food (60%; peanut, 20%; milks, 11%) involved in 25/26 cases in children and in 17/44 (39%) cases in adults. Non-food anaphylaxis was related to drugs/latex (24%; neuromuscular blocking agents, 10%; betalactamins, 6%), Hymenoptera (16%). Three food-related cases (one death) occurred during oral food challenge in children. Patients with a food allergy were younger (22.2 years vs. 55 years, $p < .001$), had more likely a history of asthma (50% vs. 7%; $p < .001$), a pre-existing allergy (62% vs. 18%; $p < .001$) compared with other allergies. A cofactor was identified in 35 cases (50%) but predominantly in adults as opposed to children (64% vs. 27%; $p = .01$). The patients who died were younger (25.6 vs. 40.8 years; $p = .01$) than the survivors and mostly presented bronchospasm (56% vs. 29%; $p = .05$). Gaps in the prevention and management of anaphylaxis were noted in 15 cases (21%).

Conclusions: Severe food anaphylaxis has specific features compared with other causes such as young age, asthma history and exercise. Food is also involved in severe anaphylaxis in adults that should not be underestimated.

Keywords: adrenaline; anaphylaxis; death; food; mortality.

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- [30 references](#)

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[Randomized Controlled Trial](#)

Am J Prev Med

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. 2023 Jun;64(6):893-897.

Air Quality Index and Childhood Asthma: A Pilot Randomized Clinical Trial Intervention

[Franziska J Rosser](#)¹, [Scott D Rothenberger](#)², [Yueh-Ying Han](#)³, [Erick Forno](#)³, [Juan C Celedón](#)³

Affiliations expand

- PMID: 36642643
- PMCID: PMC10200724 (available on 2024-06-01)
- DOI: [10.1016/j.amepre.2022.12.010](https://doi.org/10.1016/j.amepre.2022.12.010)

Abstract

Introduction: To reduce air pollution exposure, the U.S. asthma guidelines recommend that children check the Air Quality Index before outdoor activity. Whether adding the Air Quality Index and recommendations to asthma action plans reduces exacerbations and improves control and quality of life in children with asthma is unknown.

Methods: A pilot, unblinded, randomized clinical trial of 40 children with persistent asthma, stratified by age and randomized 1:1, recruited from the University of Pittsburgh Medical Center Children's Hospital of Pittsburgh (Pittsburgh, PA) was conducted. All participants received asthma action plans and Air Quality Index education. The intervention group received printed Air Quality Index information and showed the ability to use AirNow. Asthma exacerbations were assessed through a questionnaire, asthma control was assessed with the Asthma Control Test and Childhood Asthma Control Test, and quality of life was assessed with the Pediatric Asthma Quality of Life Questionnaire. After randomization (July-October 2020), participants were followed monthly for 6 months (exit January-March 2021). Outcome differences between groups were evaluated at the exit visit and over time (analysis was in 2021).

Results: At randomization, there were no significant differences in age, sex, race, or asthma severity. At exit, more intervention participants checked the Air Quality Index (63% vs 15%) with no differences in the proportion of asthma exacerbations or mean Childhood Asthma Control Test or Pediatric Asthma Quality of Life Questionnaire scores. The mean change in Asthma Control Test score was higher in the intervention group (change in Asthma Control

Test=2.00 vs 0.15 for the control), which was modified by time ($\beta=1.85$, CI=0.09, 3.61). Physical activity was decreased overall and showed modification by treatment and time.

Conclusions: Addition of the Air Quality Index to asthma action plans led to improved asthma control by Asthma Control Test scores but may decrease outdoor activity.

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[Meta-Analysis](#)

Thorax

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. 2023 Jun;78(6):596-605.

doi: 10.1136/thorax-2022-218675. Epub 2023 Jan 12.

[COPD in Africa: risk factors, hospitalisation, readmission and associated outcomes—a systematic review and meta-analysis](#)

[Chidiamara Maria Njoku](#)¹, [John R Hurst](#)², [Leigh Kinsman](#)³, [Saliu Balogun](#)^{#4}, [Kehinde Obamiro](#)^{#5}

[Affiliations expand](#)

- PMID: 36635039
- DOI: [10.1136/thorax-2022-218675](https://doi.org/10.1136/thorax-2022-218675)

Abstract

Background: This review aims to synthesise available evidence on the prevalence of chronic obstructive pulmonary disease (COPD), associated risk factors, hospitalisations and COPD readmissions in Africa.

Method: Using the Met-Analyses and Systematic Reviews of Observational Studies guideline, electronic databases were searched from inception to 1 October 2021. The quality of studies was assessed using the Newcastle-Ottawa Scale. Evidence from retrieved articles was synthesised, and a random-effect model meta-analysis was conducted. The protocol was registered on PROSPERO.

Results: Thirty-nine studies met the inclusion criteria, with 13 included in the meta-analysis. The prevalence of COPD varied between the Global Initiative for Chronic Obstructive Lung Disease (2%-24%), American Thoracic Society/European Respiratory Society (1%-17%) and Medical Research Council chronic bronchitis (2%-11%) criteria, respectively. Increasing age, wheezing and asthma were consistent risk factors for COPD from studies included in the narrative synthesis. Our meta-analysis indicated that prior tuberculosis (OR 5.98, 95% CI 4.18 to 8.56), smoking (OR 2.80, 95% CI: 2.19 to 3.59) and use of biomass fuel (OR 1.52, 95% CI: 1.39 to 1.67) were significant risk factors for COPD. Long-term oxygen therapy (HR 4.97, 95% CI (1.04 to 23.74)) and frequent hospitalisation (≥ 3 per year) (HR 11.48, 95% CI (1.31 to 100.79)) were risk factors associated with 30-day COPD readmission.

Conclusion: This study not only highlights specific risk factors for COPD risk in Africa but also demonstrates the paucity and absence of research in several countries in a continent with substantial COPD-related mortality. Our findings contribute towards the development of evidence-based clinical guidelines for COPD in Africa. PROSPERO registration number CRD42020210581.

Keywords: COPD epidemiology; COPD exacerbations; long term oxygen therapy (LTOT); tuberculosis.

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Conflict of interest statement

Competing interests: None declared.

- [Cited by 1 article](#)

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1

Editorial

Arch Bronconeumol

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. 2023 Jun;59(6):354-355.

doi: 10.1016/j.arbres.2022.12.006. Epub 2022 Dec 23.

[Beta-agonist Use and Increased Asthma Mortality: Reality or Fiction?](#)

[Article in English, Spanish]

[Nan Zhao](#)¹, [Samy Suissa](#)², [Pierre Ernst](#)³

Affiliations [expand](#)

- PMID: 36609110
- DOI: [10.1016/j.arbres.2022.12.006](https://doi.org/10.1016/j.arbres.2022.12.006)

No abstract available

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[Review](#)

J Clin Periodontol

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. 2023 Jun;50(6):842-887.

doi: 10.1111/jcpe.13767. Epub 2023 Feb 5.

The association between respiratory diseases and periodontitis: A systematic review and meta-analysis

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Affiliations [expand](#)

- PMID: 36606394
- DOI: [10.1111/jcpe.13767](https://doi.org/10.1111/jcpe.13767)

Abstract

Aim: To evaluate (1) whether periodontitis has an influence on the prevalence/incidence of respiratory diseases (chronic obstructive pulmonary disease [COPD], asthma, community-acquired pneumonia [CAP], obstructive sleep apnoea [OSA] and COVID-19), and (2) what is the impact of periodontal therapy on the onset or progression of respiratory diseases.

Materials and methods: An electronic search was performed on Pubmed, Cochrane Library and Scopus databases up to October 2021, to identify studies answering the PECOS and PICOS questions.

Results: Seventy-five articles were selected. Meta-analyses identified statistically significant associations of periodontitis with COPD ($n_{\text{studies}} = 12$, odds ratio [OR] = 1.28, 95% confidence interval [CI] [1.16; 1.42], $p < .001$), and OSA ($n_s = 6$, OR = 1.65, 95% CI [1.21;

2.25], $p = .001$), but not for asthma ($n_s = 9$, OR = 1.53, 95% CI [0.82; 2.86], $p = .181$). For acute conditions, two studies were found for CAP, while for COVID-19, significant associations were found for the need of assisted ventilation ($n_s = 2$, OR = 6.24, 95% CI [2.78; 13.99], $p < .001$) and COVID-related mortality ($n_s = 3$, OR = 2.26, 95% CI [1.36, 3.77], $p = .002$). Only four intervention studies were found, showing positive effects of periodontal treatment on COPD, asthma and CAP.

Conclusions: A positive association between periodontitis and COPD, OSA and COVID-19 complications has been found, while there is a lack of intervention studies.

Keywords: COVID-19; chronic obstructive pulmonary disease; community-acquired pneumonia; obstructive sleep apnoea; periodontitis.

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- [Cited by 2 articles](#)
- [108 references](#)

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS



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Allergy

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. 2023 Jun;78(6):1677-1680.

doi: 10.1111/all.15638. Epub 2023 Jan 19.

Overall and respiratory mortality reduction with physical activity in subjects with and without asthma

[Hyun Lee](#)¹, [Jiin Ryu](#)¹, [Sung Jun Chung](#)¹, [Dong Won Park](#)¹, [Tai Sun Park](#)¹, [Ji-Yong Moon](#)¹, [Tae-Hyung Kim](#)¹, [Jang Won Sohn](#)¹, [Ho Joo Yoon](#)¹, [Sang-Heon Kim](#)¹

Affiliations expand

- PMID: 36602280

- DOI: [10.1111/all.15638](https://doi.org/10.1111/all.15638)

No abstract available

- [6 references](#)

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grant supportexpand

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J Asthma

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. 2023 Jun;60(6):1246-1254.

doi: 10.1080/02770903.2022.2144348. Epub 2022 Nov 15.

[Association between air pollution levels and drug sales for asthma and allergy in 63 million people in metropolitan France](#)

[Marwan El Homs](#)¹, [Stéphane Sclison](#)², [Domitille Huguet](#)², [Boris Dessimond](#)¹, [Luciana Kase Tanno](#)¹, [Julie Prud'homme](#)¹, [Augustin Collette](#)³, [Isabella Annesi-Maesano](#)¹

Affiliations expand

- PMID: 36332169
- DOI: [10.1080/02770903.2022.2144348](https://doi.org/10.1080/02770903.2022.2144348)

Abstract

Introduction: Air pollution is known to have an impact on respiratory health. However, the assessment of this relationship is far from complete and is rarely extended to the country level. We used drug sales data, both Over-The-Counter (OTC) and prescription drugs, to assess exhaustively the impact of air pollution on asthma and allergy at the national level in France.

Methods: The WHO Anatomical Therapeutic Chemical (ATC) classification system was used to describe the distribution of sales of drugs of class R03 (Drugs for obstructive airways diseases, overall for asthma) and R06 (Antihistamines for systemic use). We performed a Quasi-Poisson regression model with a generalized additive model (GAM) to estimate the relationship (Relative Risks and 95% Confidence Interval) between drug sales and air pollutants, that is Particulate Matter with a diameter less than 2.5 micrometers (PM_{2.5}) and less than 10 micrometers (PM₁₀) and Nitrogen dioxide (NO₂), as assessed using the high-resolution CHIMERE dispersion model. We designed unadjusted and adjusted single-pollutant models as well as two-pollutant models.

Results: PM_{2.5}, PM₁₀, and NO₂ were significantly and positively associated with sales of R03 and R06 class drugs, after adjustment for potential confounders. Results were confirmed in the two-pollutant model for PM₁₀ and NO₂ but not for PM_{2.5}.

Conclusions: Our study confirms the presence of an association between major air pollutants and the sales of drugs against asthma and allergies. Further studies on larger databases and over several years are necessary to confirm and better understand these results.

Keywords: Air pollution; asthma; drug; epidemiology.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS



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J Asthma

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. 2023 Jun;60(6):1210-1220.

doi: 10.1080/02770903.2022.2139718. Epub 2022 Nov 15.

Cost-effectiveness of benralizumab versus mepolizumab and dupilumab in patients with severe uncontrolled eosinophilic asthma in Spain

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Affiliations expand

- PMID: 36322679
- DOI: [10.1080/02770903.2022.2139718](https://doi.org/10.1080/02770903.2022.2139718)

Abstract

Objective: To assess the cost-effectiveness of benralizumab (benra) vs. mepolizumab (mepo) and dupilumab (dupi) for the treatment of patients with severe uncontrolled asthma from the Spanish Health System perspective.

Methods: Exacerbations avoided, quality-adjusted life years (QALYs) gained and costs in a 5-year period were estimated with a Markov model for a cohort of 1,000 patients in which, based on published evidence, 31% of the patients received biologics + oral corticosteroids (OCS) and 69% received only biologics. Efficacy data (exacerbation reduction and OCS elimination) were derived from a matching-adjusted indirect comparison. Published EQ-5D utilities per health state (biologic alone, biologic + OCS, standard of care + OCS, exacerbations, and post-exacerbations) were used for QALY estimation. Utility decrements associated with exacerbation management [-0.1 (OCS or emergency visits), -0.2 (hospitalization)] derived from the literature were applied. Costs (€, 2022) included drug acquisition (ex-factory price), administration and disease management. An expert panel (2 pneumologists and 1 pharmacist) validated all inputs.

Results: Benra was more effective (52.21 QALYs) than mepo (51.39 QALYs) and dupi (51.30 QALYs). Benra avoided more exacerbations (2.87 exacerbations) compared to mepo (4.70 exacerbations) and dupi (5.11 exacerbations) for the 5-year horizon. Total costs/patient were €56,093.77 (benra), €59,280.45 (mepo) and €62,991.76 (dupi), resulting in benra dominating (more QALYs with lower costs) vs. mepo and dupi.

Conclusions: Benralizumab can be considered as a dominant treatment alternative vs. other biologic drugs for the treatment of uncontrolled severe eosinophilic asthma patients in Spain.

Keywords: Economics; treatment.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

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J Asthma

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. 2023 Jun;60(6):1237-1245.

doi: 10.1080/02770903.2022.2142134. Epub 2022 Nov 14.

Factors associated with frequent physical activity among United States adults with asthma

[Ziyad Almatruk](#)^{1,2}, [David R Axon](#)^{2,3}

Affiliations expand

- PMID: 36316286

- DOI: [10.1080/02770903.2022.2142134](https://doi.org/10.1080/02770903.2022.2142134)

Abstract

Objective: This study investigated factors associated with frequent moderate-to-vigorous intensity physical activity among United States (US) adults with asthma. **Methods:** This retrospective cross-sectional study included US adults (≥ 18 years) with asthma in the 2019 Medical Expenditure Panel Survey data. Logistic regression models that added sequential groups of variables were used to assess associations between predisposing (age, gender, race), enabling (marital status, poverty level, education level, insurance coverage, employment status), and need (smoking status, co-morbidities, mental health, physical health, functional limitations) factors and doing ≥ 30 min moderate-to-vigorous intensity physical activity \geq five times per week. The alpha level was 0.05. **Results:** The study included 2,410 individuals, of which 46.9% (95% confidence interval [CI] = 44.2-49.6) reported doing frequent moderate-to-vigorous intensity physical activity. In fully adjusted analyses, the following variables were associated with a greater odds of reporting frequent moderate-to-vigorous intensity physical activity: men vs. women (adjusted odds ratio [AOR] = 1.4, 95% CI = 1.1-1.7), white vs. other races (AOR = 1.3, 95% CI = 1.0-1.6), excellent/very good/good vs. fair/poor physical health (AOR = 2.3, 95% CI = 1.7-3.0), and functional limitations no vs. yes (AOR = 1.7, 95% CI = 1.3-2.2). **Conclusions:** The factors identified in this study (gender, race, health status, and limitation status) may be helpful to target interventions to raise awareness and increase physical activity among US adults with asthma. Studies that can demonstrate a temporal relationship are needed to further our understanding of this topic.

Keywords: Respiratory; exercise; medical expenditure panel survey.

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS



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☐ 7

[Observational Study](#)

J Asthma

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. 2023 Jun;60(6):1162-1170.

doi: 10.1080/02770903.2022.2136526. Epub 2022 Nov 15.

Use of FeNO to predict anti-IL-5 and IL-5R biologics efficacy in a real-world cohort of adults with severe eosinophilic asthma

[C Menigoz](#)¹, [S Dirou](#)¹, [A Chambellan](#)², [D Hassoun](#)³, [A Moui](#)¹, [A Magnan](#)⁴, [F X Blanc](#)¹

Affiliations expand

- PMID: 36301080

- DOI: [10.1080/02770903.2022.2136526](https://doi.org/10.1080/02770903.2022.2136526)

Abstract

Introduction: Severe eosinophilic asthma (SEA) is associated with multiple exacerbations. Fractional exhaled nitric oxide (FeNO), a biomarker of airway T2 inflammation, is known to be correlated with the risk of exacerbations. While the use of FeNO is well established to predict the therapeutic response to dupilumab (anti-IL-4/IL-13), it remains uncertain for biologics targeting the IL-5 pathway.

Methods: We conducted an observational, retrospective, monocentric analysis of adults with SEA who started mepolizumab (anti-IL-5) or benralizumab (anti-IL-5R) between January 1, 2016 and December 31, 2020.

Results: Data were collected for 109 patients. All participants reported uncontrolled asthma with a median of 3 annual exacerbations and a median *Asthma Control Test* score of 12. They all had an initial blood eosinophilia $>300/\text{mm}^3$, with a median at $610/\text{mm}^3$ (IQR 420-856). Patients with a baseline FeNO ≥ 50 ppb reported more exacerbations in the previous year than those with a FeNO <50 ppb ($p = 0.02$). After initiation of treatment, change in FeNO was not associated with therapeutic response. However, decrease in the annual number of exacerbations was significantly greater in patients with a baseline FeNO ≥ 50 ppb than in those with a baseline FeNO <50 ppb (-3.3 ± 2.7 vs -0.9 ± 2.4 , respectively; $p = 0.01$). There was no association between baseline FeNO values and subsequent lung function, asthma control or reduction of oral corticosteroids use.

Conclusion: In this real-world cohort, adults with SEA who had a baseline FeNO ≥ 50 ppb experienced a greater decrease in exacerbations after 12 months of anti-IL-5 or IL-5R biologics than those with a FeNO < 50 ppb.

Keywords: Exhaled nitric oxide; benralizumab; exacerbation; interleukin-5; mepolizumab; severe asthma.

- [Cited by 1 article](#)

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Publication types, MeSH terms, Substances [expand](#)

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J Asthma

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. 2023 Jun;60(6):1227-1236.

doi: 10.1080/02770903.2022.2140435. Epub 2022 Nov 14.

[Primary antibody deficiencies represent an underestimated comorbidity in asthma patients: efficacy of immunoglobulin replacement therapy in asthma control](#)

[Emanuele Vivarelli](#)¹, [Andrea Matucci](#)¹, [Paola Parronchi](#)², [Francesco Liotta](#)², [Lorenzo Cosmi](#)², [Oliviero Rossi](#)¹, [Edoardo Cavigli](#)³, [Alessandra Vultaggio](#)¹

Affiliations [expand](#)

- PMID: 36282045

- DOI: [10.1080/02770903.2022.2140435](https://doi.org/10.1080/02770903.2022.2140435)

Abstract

Objective: Primary antibody deficiencies (PAD) are an underestimated comorbidity in asthma and its treatment could improve disease control.

Methods: a retrospective cohort of asthmatics, affected by IgG subclass deficiency or unclassified antibody deficiency and treated with low-dose intravenous immunoglobulin replacement therapy (IRT) was recruited. Demographic and clinical data, chest CT scan, blood eosinophils, atopy, chronic oral corticosteroid (OCS) therapy were evaluated at baseline. Asthma exacerbations, lower respiratory tract infections (LRTI), upper respiratory tract infections (URTI) and asthma-related hospitalizations were assessed after one and two years of IRT.

Results: 57 moderate-to-severe asthmatics were enrolled, mostly affected by T2 low asthma (39/57, 68.4%). After one year, IRT was effective in improving, irrespective of bronchiectasis, atopy, eosinophils and PAD type: 1) trough IgG (826.9 ± 221.3 vs 942.2 ± 195.1 mg/dl; $p < 0.0001$) and IgG subclasses (IgG1 355.4 ± 88.4 vs 466.7 ± 122.3 , $p < 0.0001$; IgG2 300.1 ± 130.1 vs 347.6 ± 117.3 , $p < 0.0005$) serum levels. 2) asthma exacerbations (6.4 ± 4.1 vs 2.4 ± 1.9 , $p < 0.0001$), LRTI (4.3 ± 3.9 vs 1.3 ± 1.5 , $p < 0.0001$) and hospitalization rate (0.26 ± 0.7 vs 0.05 ± 0.2 , $p < 0.01$). These results persisted after 2 years of therapy. Estimated mean cumulative OCS exposure was reduced by 4500 mg over the 2-year period.

Conclusions: low-dose IRT is effective in improving asthma control and lessening OCS burden in asthmatics affected by PAD.

Keywords: Asthma; OCS sparing; bronchiectasis; immunoglobulin replacement therapy; primary antibody deficiencies.

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MeSH terms, Substancesexpand

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Bronchodilator reversibility testing in long-term cough and dyspnea after Covid-19 viral infection: a trigger for asthma?

[Aysegul Gencer](#)¹, [Buket Caliskaner Ozturk](#)², [Sermin Borekci](#)², [Bilun Gemicioglu](#)²

Affiliations expand

- PMID: 36279253
- DOI: [10.1080/02770903.2022.2139719](https://doi.org/10.1080/02770903.2022.2139719)

Abstract

Objective: This study aims to investigate the presence of underlying chronic airway disease in individuals with chronic cough and dyspnea lasting longer than eight weeks and who had previously Coronavirus disease 2019 (COVID-19) and had no known lung disease. **Methods:** A total of 151 patients admitted to the respiratory diseases outpatient room with the complaint of cough and/or dyspnea that persisted for at least eight weeks following COVID-19 infection were accrued to the study. Demographic characteristics, smoking history, the severity of lung involvement on chest computed tomography in the acute phase of Covid-19 infection, and bronchodilator reversibility test results were recorded. Smoking history and forced expiratory volume in the first second (FEV1) were compared. **Results:** FEV1 increase ≥ 200 ml was observed in 40 (26.5%) patients. In 24 (15.9%) patients, an increase in FEV1 was found to be 200 ml and above, and the percentage of FEV1 was 12% or more. While 14 (9.3%) patients were diagnosed with asthma, 13 (8.6%) patients were diagnosed with nonreversible airflow obstruction (NRAO), and 1 (0.7%) patient was diagnosed with chronic obstructive pulmonary disease (COPD). **Conclusions:** COVID-19 infection may play a vital role in initiating asthma pathogenesis. It should be kept in mind that viral infection-related asthma may be the underlying cause of prolonged cough and dyspnea after COVID-19 infection.

Keywords: Post-COVID-19; airway reversibility; bronchial hyperresponsiveness; post-COVID cough; viral infection related-asthma.

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

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J Asthma

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. 2023 Jun;60(6):1202-1209.

doi: 10.1080/02770903.2022.2139717. Epub 2022 Nov 14.

Factors associated with medication adherence among adults with asthma

[Kudret C Özdemir](#)^{1,2}, [Ramune Jacobsen](#)¹, [Morten Dahl](#)^{2,3}, [Eskild Landt](#)²

Affiliations expand

- PMID: 36278848
- DOI: [10.1080/02770903.2022.2139717](https://doi.org/10.1080/02770903.2022.2139717)

Abstract

Objective: Asthma medication adherence is of crucial importance for successful disease management. The aim of this study was to identify and rank factors associated with medication adherence among adults with asthma in the general population.

Methods: We used data on physician-diagnosed asthma, medication adherence, and factors associated with asthma medication adherence from the Danish General Suburban Population Study using a cross-sectional study design. We ranked factors associated with

asthma medication adherence based on the magnitude of odds ratios, and the population attributable fractions.

Results: Among 20,032 individuals from the general population, 1,128 (6%) suffered from asthma and 822 (73%) of these were adherent to asthma medications. Based on odds ratios, the three top-ranked factors associated with asthma medication adherence were asthma attacks within the past year (4.0; 95% CI: 2.9-5.5), allergy medication use (3.8; 2.6-5.6), and age above median (3.4; 2.4-4.7), followed by asthma severity markers like airway obstruction, and coughing with mucus. Based on population attributable fractions, the three top-ranked factors associated with adherence to asthma medications were asthma attacks within the past year (70%), age above median (57%), and use of allergy medication (49%).

Conclusions: The study showed that in the general population recent asthma attacks, higher age, and taking allergy medication were the three most important factors associated with asthma medication adherence. The importance of maintaining adherence to asthma medications even in the absence of severe disease or expressed asthma symptoms should be better communicated to the general population.

Keywords: Disease management; asthma symptoms; bronchodilator; epidemiology; inhalation.

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS



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J Asthma

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. 2023 Jun;60(6):1057-1060.

doi: 10.1080/02770903.2022.2137036. Epub 2022 Oct 25.

Achieving zero asthma-related hospitalisations in the world's first SABA-free Asthma Center in Argentina

[Luis J Nannini](#)^{1,2}, [Nadia Brandan](#)¹, [Octavio M Fernandez](#)¹

Affiliations expand

- PMID: 36250947
- DOI: [10.1080/02770903.2022.2137036](https://doi.org/10.1080/02770903.2022.2137036)

No abstract available

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J Asthma

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. 2023 Jun;60(6):1183-1190.

doi: 10.1080/02770903.2022.2137038. Epub 2022 Nov 8.

The relationship between general and abdominal obesity, nutrition and respiratory functions in adult asthmatics

- PMID: 36239386
- DOI: [10.1080/02770903.2022.2137038](https://doi.org/10.1080/02770903.2022.2137038)

Abstract

Objective: Although obesity is known to have adverse effects on asthma, it is not fully known whether general or abdominal obesity affects asthma symptoms more. In this study, the effects of diet and general/abdominal obesity on respiratory functions were evaluated.

Methods: A total of 204 adult asthmatic individuals participated in the study. Anthropometric measurements, respiratory functions, asthma control test (ACT) scores, and 24-hour food consumption were recorded. The results were compared according to body mass index (BMI), waist circumference (WC), and waist-hip ratio (WHR) classification.

Results: FEV₁, FVC, MEF₂₅₋₇₅, MEF₅₀, and MEF₂₅ decreased with the increase in BMI, WC, and WHR. FEV₁ showed a negative linear relationship with BMI, WC and WHR and these results were more significant in WC and WHR than BMI. Similarly, the ACT score also showed a negative correlation with BMI ($r = -0.372$; $p = 0.023$), WC ($r = -0.402$; $p = 0.001$) and WHR ($r = -0.387$; $p = 0.011$), and the results were more significant in WC and WHR than BMI. Individuals whose WC (OR: 2.170 CI (1.325-3.182)) and WHR (OR: 2.119 CI (1.246-3.338)) were at risk had higher odds of uncontrolled asthma than those with normal WC and WHR. Each 100-kcal increase in total energy consumption increased the odds of uncontrolled asthma (OR: 1.125 CI (1.086-2.217)) ($p < 0.05$).

Conclusions: The effects of WC and WHR, which are indicators of abdominal obesity, on respiratory functions and ACT score, were found to be higher than BMI. Obese individuals should be referred to diet clinics to improve their asthma symptoms.

Keywords: Asthma; central obesity; general obesity; nutrition.

SUPPLEMENTARY INFO

MeSH termsexpand

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Allergy

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. 2023 Jun;78(6):1473-1488.

doi: 10.1111/all.15551. Epub 2022 Oct 26.

Effect of Haemophilus influenzae, Streptococcus pneumoniae and influenza vaccinations on infections, immune response and asthma control in preschool children with asthma

[Ya-Dong Gao](#)^{1,2}, [Paraskevi Xepapadaki](#)³, [Yan-Wen Cui](#)¹, [Barbara Stanic](#)², [Debbie J Maurer](#)^{2,4,5}, [Claus Bachert](#)⁶, [Nan Zhang](#)⁶, [Susetta Finotto](#)⁷, [Maciej Chalubinski](#)⁸, [Heikki Lukkarinen](#)⁹, [Maria Passioli](#)³, [Anna Graser](#)⁷, [Tuomas Jartti](#)^{9,10,11}, [Marek Kowalski](#)⁸, [Ismail Ogulur](#)², [Zi-Wei Shi](#)¹², [Mübeccel Akdis](#)², [Nikolaos G Papadopoulos](#)^{3,13}, [Cezmi A Akdis](#)²

Affiliations expand

- PMID: 36229409
- DOI: [10.1111/all.15551](https://doi.org/10.1111/all.15551)

Abstract

Background: Haemophilus influenzae (H. influenzae), Streptococcus pneumoniae (pneumococcus) and influenza vaccines are administered in children to prevent infections caused by these pathogens. The benefits of vaccination for asthma control in children and the elicited immune response are not fully understood. This study aimed to investigate the impact of these vaccinations on respiratory infections, asthma symptoms, asthma severity and control status, pathogen colonization and in vitro immune responses to different stimulants mimicking infections in asthmatic children.

Methods: Children aged 4-6 years were recruited into the multicentre prospective PreDicta study conducted across five European countries. Information about vaccination history,

infections, antibiotic use, inhaled corticosteroid (ICS) use and asthma symptoms in the last 12 months were obtained from questionnaires of the study. Nasopharyngeal samples were collected at the first visit to assess bacterial and viral colonization, and venous blood for isolation of peripheral blood mononuclear cells (PBMCs). The PBMCs were stimulated with phytohemagglutinin, R848, Poly I:C and zymosan. The levels of 22 cytokines and chemokines were measured in cell culture supernatants using a luminometric multiplex assay.

Results: One-hundred and forty asthmatic preschool children (5.3 ± 0.7 years) and 53 healthy children (5.0 ± 0.8 years) from the PreDicta cohort were included in the current study. Asthmatic children were associated with more frequent upper and lower respiratory infections, and more frequent and longer duration of antibiotic use compared with healthy children. In asthmatic children, sufficient H. influenzae vaccination was associated with a shorter duration of upper respiratory infection (URI) and overall use and average dose of ICS. The airway colonization was characterized by less pneumococcus and more rhinovirus. Pneumococcal vaccination was associated with a reduction in the use rate and average dose of ICS, improved asthma control, and less human enterovirus and more H. influenzae and rhinovirus (RV) airway colonization. Influenza vaccination in the last 12 months was associated with a longer duration of URI, but with a decrease in the occurrence of lower respiratory infection (LRI) and the duration of gastrointestinal (GI) infection and antibiotic use. Asthmatic preschoolers vaccinated with H. influenzae, pneumococcus or influenza presented higher levels of Th1-, Th2-, Th17- and regulatory T cells (Treg)-related cytokines in unstimulated PBMCs. Under stimulation, PBMCs from asthmatic preschoolers with pneumococcal vaccination displayed a predominant anti-inflammatory immune response, whereas PBMCs from asthmatic children with sufficient H. influenzae or influenza vaccination were associated with both pro- and anti-inflammatory immune responses.

Conclusion: In asthmatic preschoolers, the standard childhood vaccinations to common respiratory pathogens have beneficial effects on asthma control and may modulate immune responses relevant to asthma pathogenesis.

Keywords: Haemophilus influenzae; asthma; immune response; influenza; pneumococcus.

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- [62 references](#)

SUPPLEMENTARY INFO

MeSH terms, Substances, Grant supportexpand

FULL TEXT LINKS



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 14

Observational Study

J Asthma

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. 2023 Jun;60(6):1072-1079.

doi: 10.1080/02770903.2022.2130800. Epub 2022 Oct 20.

Impact of exacerbations on lung function, resource utilization, and productivity: results from an observational, prospective study in adults with uncontrolled asthma

[Juan Wisnivesky](#)^{1,2}, [Emily Federmann](#)¹, [Laurent Eckert](#)³, [Erin West](#)⁴, [Caroline Amand](#)³, [Driss Kamar](#)⁵, [Ariel Teper](#)⁶, [Asif H Khan](#)³

Affiliations expand

- PMID: 36218309
- DOI: [10.1080/02770903.2022.2130800](https://doi.org/10.1080/02770903.2022.2130800)

Abstract

Background: Exacerbations have a major impact on the well-being of patients with uncontrolled asthma. This study evaluated lung function, healthcare resource utilization (HCRU), and productivity loss following asthma exacerbations. **Methods:** This single-center, observational, prospective cohort study recruited US patients presenting clinically with an acute asthma exacerbation; a reference group without exacerbations was included for comparison. Lung function (forced expiratory volume in 1 second [FEV₁]) was collected at baseline, daily during Month 1, and monthly for Months 2-5, and reported as FEV₁ percent predicted (FEV₁pp). HCRU (outpatient visits to a healthcare practitioner, emergency room

[ER] visits, and hospitalizations for asthma), oral corticosteroid (OCS) use, and asthma-related work/school absence were collected monthly for 6 months. **Results:** Overall, 150 patients were recruited (exacerbation: $n=102$; reference: $n=48$; mean [SD] age: 42.7 [15.2] and 49.6 [12.4] years; female: 73% and 71%). In both groups, similar trends were observed in FEV₁, with significant improvement from baseline to Week 1 ($p<0.05$), followed by a continuous decline. FEV₁p was 7.7% lower at baseline and 8.6% lower at Month 5 in the exacerbation group versus the reference group. The exacerbation group had significantly higher rates of OCS prescription during follow-up versus reference group ($p=0.04$). Over half (52.9%) of patients in the exacerbation group had a recurrent exacerbation during follow-up, increased HCRU (outpatient visits, ER visits, and hospitalizations), and impaired productivity. **Conclusion:** Although patients with exacerbations had rapid recovery of lung function, this was not maintained and declined faster than in patients without exacerbations. Additionally, patients experienced increased HCRU after exacerbations.

Keywords: Forced expiratory volume; airway disease; asthma exacerbations; healthcare resource utilization; symptom exacerbation.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS



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. 2023 Jun;60(6):1153-1161.

doi: 10.1080/02770903.2022.2134795. Epub 2022 Nov 8.

[Airwave oscillometry and spirometry in children with asthma or wheeze](#)

[Shannon Gunawardana](#)¹, [Mark Tuazon](#)², [Lorna Wheatley](#)², [James Cook](#)³, [Christopher Harris](#)⁴, [Anne Greenough](#)^{1,5}

Affiliations expand

- PMID: 36218195
- PMCID: [PMC9612926](#)
- DOI: [10.1080/02770903.2022.2134795](#)

Free PMC article

Abstract

Objective: Lung function testing is used in diagnosing asthma and assessing asthma control. Spirometry is most commonly used, but younger children can find performing this test challenging. Non-volitional tests such as airwave oscillometry (AOS) may be helpful in that population. We compared the success of spirometry and AOS in assessing bronchodilator responsiveness in children.

Methods: AOS was conducted alongside routine lung function testing. Resistance at 5 Hz (R5), the difference between the resistance at 5 and 20 Hz (R5-20) and the area under the reactance curve (AX) were assessed. Patients between 5 and 16 years old attending clinic with wheeze or asthma were assessed. Patients performed AOS, followed by spirometry and were then given 400 µg salbutamol; the tests were repeated 15 minutes later.

Results: Lung function testing was performed in 47 children of whom 46 (98%) and 32 (68%) performed acceptable baseline oscillometry and spirometry, respectively ($p < 0.001$). Children unable to perform acceptable spirometry were younger (7.35, range: 5.4-10.3 years) than those who could (10.4, range: 5.5-16.9 years), $p < 0.001$. The baseline z-scores of AOS R5 correlated with FEV₁ ($r = 0.499$, $p = 0.004$), FEF₇₅ ($r = 0.617$, $p < 0.001$), and FEV₁/FVC ($r = 0.618$, $p < 0.001$). There was a positive bronchodilator response assessed by spirometry (change in FEV₁ $\geq 12\%$) in eight children which corresponded to a change in R5 of 36% (range: 30%-50%) and a change in X5 of 39% (range: 15%-54%).

Conclusions: Oscillometry is a useful adjunct to spirometry in assessing young asthmatic children's lung function. The degree of airway obstruction, however, might affect the comparability of the results of the two techniques.

Keywords: Lung function; bronchodilator responsiveness; forced expiratory volume in 1 second (FEV₁); pediatrics; resistance at 5Hz (R5).

- [1 figure](#)

Publication types, MeSH terms, Substances, Grant supportexpand

FULL TEXT LINKS



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J Asthma

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. 2023 Jun;60(6):1115-1122.

doi: 10.1080/02770903.2022.2132959. Epub 2022 Oct 20.

[Association between asthma and work absence in working adults in the United States](#)

[Louis Jacob](#)^{1,2,3}, [Jae Il Shin](#)⁴, [Guillermo F López-Sánchez](#)⁵, [Josep Maria Haro](#)^{1,2}, [Ai Koyanagi](#)^{1,2,6}, [Karel Kostev](#)⁷, [Laurie Butler](#)⁸, [Yvonne Barnett](#)⁸, [Hans Oh](#)⁹, [Lee Smith](#)¹⁰

Affiliations expand

- PMID: 36214492
- DOI: [10.1080/02770903.2022.2132959](https://doi.org/10.1080/02770903.2022.2132959)

Abstract

Objectives: The present study aimed to investigate the association between asthma and work absence in a large sample of US working adults, while controlling for several sociodemographic and health characteristics. **Methods:** This study used data from the 2019 Health and Functional Capacity Survey of the RAND American Life Panel (ALP). Work absence corresponded to the number of days of absence from work for health-related reasons in the past 12 months. Current asthma was self-reported and was included in the analyses as a dichotomous variable. Control variables included sex, age, ethnicity, marital status, education, occupation, annual family income, health insurance, and number of chronic physical or psychiatric conditions. Finally, the association between asthma and

work absence was analyzed using logistic regression models. **Results:** This study included 1,323 adults aged 22-65 years (53.1% males; mean [SD] age 43.1 [11.7] years). Individuals with asthma were more likely to report at least one (81.5% versus 56.8%, p -value<0.001) or three days of absence (56.9% versus 31.3%, p -value=0.003) from work in the past 12 months than those without asthma. These findings were corroborated in the regression analyses, as asthma was positively and significantly associated with work absence after adjusting for all control variables (at least one day of absence: OR=3.24, 95% CI=1.44-7.29; at least three days of absence: OR=2.61, 95% CI=1.26-5.40). **Conclusions:** This US study of working adults showed that asthma was a risk factor for work absence. Further research is warranted to better understand the factors predisposing to work absence in the asthma population.

Keywords: Asthma; United States; cross-sectional study; epidemiology; work absence.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS



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J Asthma

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. 2023 Jun;60(6):1141-1152.

doi: 10.1080/02770903.2022.2134794. Epub 2022 Oct 25.

[The impact of obesity and uncontrolled asthma during pregnancy on metabolic and inflammatory pathways](#)

[Sreeparna Bhaumik](#)¹, [Jack Lockett](#)^{1,2}, [Zarqa Saif](#)¹, [Andrew Lai](#)³, [Carlos Salomon](#)³, [Jonathan P Whitehead](#)⁴, [Vicki L Clifton](#)¹

Affiliations expand

- PMID: 36214455

- DOI: [10.1080/02770903.2022.2134794](https://doi.org/10.1080/02770903.2022.2134794)

Abstract

Objective: Asthma and obesity are both inflammatory complications of pregnancy and when combined contribute to an increased risk of uncontrolled asthma during pregnancy and poor perinatal outcomes. Our previous work has identified the presence of maternal asthma is associated with a proinflammatory milieu in the placenta and reduced fetal growth. The current study was designed to determine the relationships between immunomodulatory metabolic pathways and inflammation and establish whether these pathways are associated with uncontrolled asthma in obese pregnant women.

Methods: Fifty-three obese (BMI >30) pregnant women were recruited prospectively. Participants were classified as having no asthma, controlled asthma, and uncontrolled asthma based on a doctor diagnosis and assessment using the Asthma Control Questionnaire (ACQ). Circulating plasma concentrations of metabolic hormones leptin, adiponectin, insulin, glucose, and extracellular vesicle (EVs) associated cytokines were measured at 18- and 36-weeks gestation.

Results: Concentrations of metabolic and inflammatory markers among obese participants with or without asthma were not significantly different throughout gestation. However total adiponectin concentrations increased as gestation progressed in obese, non-asthmatic women but did not increase in women with asthma. Plasma adiponectin and leptin levels in women with uncontrolled asthma were positively correlated with EV inflammatory markers including GM-CSF, IL-6, TNF α and IFN γ protein.

Conclusions: This study demonstrated that most metabolic markers remain unchanged with the presence and severity of asthma in obese pregnant women. However, differences in the associations between metabolic and inflammatory pathways were observed in women with asthma and may be one of the mechanisms contributing to uncontrolled asthma in obese pregnant women.

Keywords: Uncontrolled asthma; cytokines; inflammation; obesity; pregnancy.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS



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Observational Study

J Asthma

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. 2023 Jun;60(6):1104-1114.

doi: 10.1080/02770903.2022.2132957. Epub 2022 Oct 17.

Effectiveness and quality of life in asthmatic patients treated with budesonide/formoterol via Elpenhaler® device in primary care. The "SKIRON" real world study

[Paschalis Steiropoulos¹](#), [Konstantinos Exarchos²](#), [Maria Bertoli³](#), [Foteini Karakontaki⁴](#), [Georgios Antonogiannakis⁵](#), [Vlassios Polychronopoulos⁴](#), [Athena Gogali²](#), [Konstantinos Kostikas²](#)

Affiliations expand

- PMID: 36199217
- DOI: [10.1080/02770903.2022.2132957](https://doi.org/10.1080/02770903.2022.2132957)

Abstract

Aim: Inhaled corticosteroid (ICS)/long-acting β_2 agonist (LABA) combination therapy is used for the effective control of asthma. Aim of this study was to collect data on the effectiveness, safety, quality of life, and patient satisfaction from a fixed dose combination of budesonide/formoterol administered with the Elpenhaler® device following 3-months' treatment. **Methods:** A 3-month real-life, multicentre, one-arm, prospective observational study (SKIRON study-[NCT03055793](#)) was conducted, using the following questionnaires: Asthma Control Questionnaire (ACQ-6) for asthma control assessment, MiniAQLQ questionnaire for QoL assessment, and Feeling of Satisfaction with Inhaler questionnaire

(FSI-10) for patients' satisfaction with the inhaler device. Comorbidities and safety data were also recorded during the study. **Results:** We enrolled 1,174 asthmatic patients following standard clinical practice in primary care from 126 sites in urban and rural areas of Greece. The majority of patients (71.5%) had at least one comorbidity. A statistically significant improvement in the ACQ-6 score was noted at 3 months compared to the baseline evaluation (mean \pm SD 2.19 ± 0.97 at baseline vs. 0.55 ± 0.56 at 3 months; mean change -1.64 (95%CI $-1.69, -1.57$), $p < 0.0001$). MiniAQLQ score was statistically and clinically significantly improved, compared to baseline, (4.55 ± 1.04 at baseline vs. 6.37 ± 0.64 at 3 months; mean change 1.82 (95%CI $1.75, 1.87$), $p < 0.0001$). The mean FSI-10 score of 44.2 ± 5.4 indicated patient satisfaction and ease-of-use of the Elpenhaler® device. **Conclusions:** In this large real-world study of inadequately-controlled asthma patients in primary care settings, the treatment with budesonide/formoterol FDC with the Elpenhaler® device was associated with significant improvement in patients' asthma control and quality of life.

Keywords: Asthma; Elpenhaler® device; asthma control; dry powder inhaler; feeling of satisfaction with inhaler; fixed-dose budesonide/formoterol; observational; primary care; quality of life.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

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J Asthma

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. 2023 Jun;60(6):1088-1096.

doi: 10.1080/02770903.2022.2132955. Epub 2022 Oct 13.

Outcome expectancies and resistance self-efficacy mediate the relationship between asthma diagnosis and e-

cigarette use among youth and young adults

[Abdullah M M Alanazi](#)^{1,2}, [Mohammed M Alqahtani](#)^{1,3}, [J Michael Wells](#)⁴, [Donald H Lein Jr](#)⁵, [Peter S Hendricks](#)⁶

Affiliations expand

- PMID: 36197727
- DOI: [10.1080/02770903.2022.2132955](https://doi.org/10.1080/02770903.2022.2132955)

Abstract

Introduction: The use of electronic cigarettes (e-cigarettes) may exacerbate pulmonary complications in youth and young adults with asthma. We sought to identify the cognitive mechanisms that might explain e-cigarette use in this population. We hypothesized that e-cigarette outcome expectancies and e-cigarette resistance self-efficacy would mediate the relationship between asthma diagnosis and e-cigarette use in youth and young adults.

Methods: We enrolled youth and young adults (15-25 years old) in Alabama with a clinical diagnosis of asthma ($n = 130$) or without a diagnosis of any chronic pulmonary disease ($n = 115$; reference group). Author-constructed and validated questionnaires (young adult e-cigarette use outcome expectancies and modified Self-efficacy Scale for Adolescent Smoking) were administered to collect demographic data and assess susceptibility to e-cigarette use as well as current use of e-cigarettes, e-cigarette outcome expectancies, and e-cigarette resistance self-efficacy. We then conducted structural equation modeling to test whether e-cigarette expectancies and e-cigarette resistance self-efficacy mediate the relationship between asthma and susceptibility to e-cigarette use as well as current e-cigarette use.

Results: The frequency of the susceptibility to e-cigarette use and current e-cigarette use was lower among those with clinically diagnosed asthma than among those without asthma (35.8% vs. 59.8% for susceptibility and 6.0% vs. 18.2% for current use). Individuals with asthma reported weaker expectancies that e-cigarettes would make them feel relaxed which, in turn, was a significant predictor of lower susceptibility to e-cigarette use and current e-cigarette use, suggesting mediation. Finally, individuals with asthma demonstrated greater e-cigarette resistance self-efficacy in the context of social opportunities and friends' influence to use e-cigarettes. This self-efficacy was associated with lower susceptibility to e-cigarette use as well as current e-cigarette use.

Conclusion: Although longitudinal studies are needed to determine relationships prospectively, targeted interventions that reduce outcome expectancies and increase resistance self-efficacy to e-cigarette use may further reduce e-cigarette use among youth and young adults with asthma.

Keywords: E-cigarette; asthma; expectancy; self-efficacy.

SUPPLEMENTARY INFO

MeSH termsexpand

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J Asthma

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. 2023 Jun;60(6):1061-1071.

doi: 10.1080/02770903.2022.2129063. Epub 2022 Oct 13.

CHECK – multilevel real-world pediatric asthma care coordination: results and lessons learned

[A A Pappalardo](#)^{1,2}, [T Wang](#)³, [M A Martin](#)^{1,3}

Affiliations expand

- PMID: 36151882
- DOI: [10.1080/02770903.2022.2129063](https://doi.org/10.1080/02770903.2022.2129063)

Abstract

Objective: Because asthma health disparities in children remain common, innovative approaches to obtain asthma health equity are essential. Comprehensive care coordination programs may address the social determinants of health that influence these disparities. This analysis aims to ascertain if receipt of Coordination of Healthcare for Complex Kids (CHECK) program services was associated with changes in school absence, cost, healthcare utilization, and controller prescription in children with asthma.

Methods: The CHECK program ran from December 1, 2014 through August 31, 2017. Engagement with community health workers was rolling and targeted based on risk level (low, medium, or high determined by healthcare utilization). This analysis included school-aged children with asthma ($n = 2,629$) and sufficient Chicago Public Schools attendance data ($n = 430$).

Results: Children engaged in CHECK were more likely to be female ($p = .046$) and to identify as Black and/or Hispanic/Latino than enrolled-only children. School absence was not different between the groups. Average total cost for engaged children was 21.3% more than enrolled-only children the first year ($p = .027$) but did not differ by the second year ($p = .948$). At baseline, 68.1% of the cohort had at least one ED visit 12 months prior to CHECK, this reduced to 49.5% post-1 and 41.9% post-2. Engaged children were 21% more likely to visit an ED ($p = .010$) and 40% more likely to have a controller.

Conclusions: CHECK program receipt was associated with improved healthcare utilization and controller prescriptions. School attendance did not change. The CHECK model offers potential pathways to support low-income children with asthma.

Keywords: Health disparities; community health workers; health services research; multilevel interventions; patient navigators.

- [Cited by 1 article](#)

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS



[Proceed to details](#)

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Cult Med Psychiatry

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. 2023 Jun;47(2):301-328.

doi: 10.1007/s11013-022-09766-5. Epub 2022 Feb 7.

Breathing Together: Children Co-constructing Asthma Self-Management in the United States

[Julie Spray](#)^{1,2}, [Jean Hunleth](#)³

Affiliations expand

- PMID: 35132504
- PMCID: [PMC8821853](#)
- DOI: [10.1007/s11013-022-09766-5](#)

Free PMC article

Abstract

Pediatric asthma management in the U.S. is primarily oriented around caregivers. As evident in policy, clinical literature and provider practices, this caregiver-centric approach assumes unidirectional transfer of practices and knowledge within particular relational configurations of physicians, caregivers, and children. Reflecting broader societal values and hierarchies, children are positioned as passive recipients of care, as apprentices for future citizenship, and as the responsibility of parents who will train them in the knowledge and labor of asthma management. These ideas, though sometimes contradictory, contribute to a systemic marginalization of children as participants in their health care, leaving a conceptual gap regarding children's inclusion in chronic illness management: what children's roles in their health care are or should be. We address this conceptual gap by asking, what does pediatric asthma management look like when we center children, rather than caregivers in our lens? We draw data from a study of asthma management in St. Louis, Missouri, and Gainesville, Florida, which included 41 caregivers, 24 children, and 12 health-care providers. By asking children to show us how they manage asthma, we find that children actively co-construct health practices within broader interdependencies of care and the structural constraints of childhoods.

Keywords: Asthma; Care; Childhood; Responsibility; Self-management.

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Conflict of interest statement

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

- [Cited by 2 articles](#)
- [71 references](#)
- [2 figures](#)

SUPPLEMENTARY INFO

MeSH terms, Grant support[expand](#)

FULL TEXT LINKS



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

1

Laryngoscope

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. 2023 Jun 2.

doi: 10.1002/lary.30801. Online ahead of print.

[Using Ipratropium Bromide Nasal Spray Response as a Screening Tool in the Diagnostic Workup of Cerebrospinal Fluid Rhinorrhea](#)

[Phillip Nulty](#)¹, [William Mason](#)¹, [Edward L Peterson](#)², [Bernard Cook](#)³, [Jack Rock](#)⁴, [Jacob Eide](#)¹, [John R Craig](#)¹

Affiliations [expand](#)

- PMID: 37265206
- DOI: [10.1002/lary.30801](https://doi.org/10.1002/lary.30801)

Abstract

Objectives: Unilateral clear thin rhinorrhea (UCTR) can be concerning for a nasal cerebrospinal fluid (CSF) leak. Beta-2 transferrin electrophoresis has been the gold standard for initial non-invasive confirmatory testing for CSF rhinorrhea, but there can be issues with fluid collection and testing errors. Ipratropium bromide nasal spray (IBNS) is highly effective at reducing rhinitis-related rhinorrhea, and should presumably not resolve CSF rhinorrhea. This study assessed whether different clinical features and IBNS response helped predict presence or absence of CSF rhinorrhea.

Methods: A prospective cohort study was conducted where all patients with UCTR had nasal fluid tested for beta-2 transferrin, and were prescribed 0.06% IBNS. Patients were diagnosed with CSF rhinorrhea or other rhinologic conditions. Clinical variables like IBNS response (rhinorrhea reduction), positional worsening, salty taste, postoperative state, female gender, and body-mass index were assessed for their ability to predict CSF rhinorrhea. Sensitivity, specificity, and predictive values and odds ratios were calculated for all clinical variables.

Results: Twenty patients had CSF rhinorrhea, and 53 had non-CSF etiologies. Amongst clinical variables assessed for predicting CSF absence or presence, significant associations were shown for IBNS response (OR = 844.66, $p = 0.001$), positional rhinorrhea worsening (OR = 8.22, $p = 0.049$), and body-mass index ≥ 30 (OR = 2.92, $p = 0.048$). IBNS response demonstrated 96% sensitivity and 100% specificity, and 100% positive and 91% negative predictive values for predicting CSF rhinorrhea.

Conclusions: In patients with UCTR, 0.06% IBNS response is an excellent screening tool for excluding CSF rhinorrhea, and should be considered in the diagnostic workup of CSF rhinorrhea.

Level of evidence: 2 Laryngoscope, 2023.

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- [37 references](#)

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J Rheumatol

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. 2023 Jun 1;jrheum.2022-1117.

doi: 10.3899/jrheum.2022-1117. Online ahead of print.

Sex differences in clinical manifestations of hospitalized patients with eosinophilic granulomatosis with polyangiitis: a retrospective cohort study

[Suying Liu](#)¹, [Linna Han](#)², [Mengtao Li](#)³, [Xinping Tian](#)⁴, [Xiaofeng Zeng](#)⁵, [Yuewu Lu](#)⁶, [Li Wang](#)⁷, [Fengchun Zhang](#)⁸

Affiliations expand

- PMID: 37263648
- DOI: [10.3899/jrheum.2022-1117](https://doi.org/10.3899/jrheum.2022-1117)

Abstract

Objective: To investigate the impact of sex on the clinical characteristics, prognoses, and therapeutic selection of eosinophilic granulomatosis with polyangiitis (EGPA).

Methods: We retrospectively enrolled 170 hospitalized patients with EGPA who were managed at our hospital between 2007 and 2020. Detailed clinical data were reviewed. Manifestations, prognoses, treatments, and outcomes were compared between female and male patients. Cumulative survival rates were calculated using Kaplan-Meier curves.

Results: In this cohort, the male-to-female ratio was 1.4:1. Renal involvement was more frequent in male patients, including serum creatinine elevation, and proteinuria > 1 g/24h. Severe gastrointestinal involvement occurred more commonly in male patients. Female

patients had longer allergy duration and higher ratios of allergic rhinitis and asthma. Sex differences in proteinuria > 1 g/24 h, serum creatinine > 150 mmol/L, severe gastrointestinal involvement, and weight loss were more significant in patients aged ≤ 55 years than those in patients aged > 55 years. Overall, male patients had a higher Birmingham Vasculitis Activity Score and a worse prognosis that were assessed at diagnosis, with a lower proportion of 1996 Five Factor Score = 0, than females. Regarding treatment selection, methylprednisolone pulse and cyclophosphamide were administered more frequently to male patients. All-cause mortality and cumulative survival rates were comparable between the sexes.

Conclusion: In this Chinese EGPA cohort, male and female patients showed distinct disease phenotypes. Male patients with EGPA had a higher disease activity at diagnosis and required more aggressive treatment for remission induction.

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J Midwifery Womens Health

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. 2023 May 30.

doi: 10.1111/jmwh.13522. Online ahead of print.

Effects of Climate Change and Air Pollution on Perinatal Health

[Bethany Sanders](#)¹, [Melissa Davis](#)¹

Affiliations expand

- PMID: 37254462
- DOI: [10.1111/jmwh.13522](https://doi.org/10.1111/jmwh.13522)

Abstract

Climate change is often framed as an environmental concern; however, the burning of fossil fuels both directly and indirectly impacts air quality and, thus, human health. Gas byproducts of combustion lead to increased levels of atmospheric ozone and carbon dioxide, which in turn elevate surface temperatures of the earth. This process exposes individuals to respiratory irritants and contributes to increased frequency of natural disasters such as wildfires, negatively impacting respiratory health. Normal physiologic changes in the respiratory system make pregnant people particularly vulnerable to the effects of air pollution. Asthma and allergic rhinitis are 2 common respiratory diseases that can be triggered by poor air quality. Solutions to limit the impact of climate change on respiratory disease include risk mitigation and reduction of fossil fuel consumption on individual, organization, and community levels. Midwives are well positioned as clinicians to educate people about individual strategies to reduce environmental exposure to respiratory irritants and advocate for policy changes to limit future health effects of climate change.

Keywords: antepartum care; climate/environmental health; primary care; public health.

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- [48 references](#)

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J Asthma

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. 2023 May 31;1-7.

doi: 10.1080/02770903.2023.2209175. Online ahead of print.

[Efficacy and safety of fixed-dose combination of Bilastine–Montelukast in adult patients with allergic rhinitis: a phase III, randomized, multi-center,](#)

double-blind, active controlled clinical study

[Shubhadeep D Sinha](#)¹, [Sridevi Perapogu](#)², [Sreenivasa Chary S](#)¹, [S Ramesh](#)³, [Jaimanti Bakshi](#)⁴, [Ajit Singh](#)⁵, [Abdul Khabeer Ahmed](#)⁶, [B Mohan Reddy](#)¹, [Muralidhar Panapakam](#)¹, [Leela Talluri](#)¹, [Ramya Vattipalli](#)¹

Affiliations expand

- PMID: 37140964
- DOI: [10.1080/02770903.2023.2209175](https://doi.org/10.1080/02770903.2023.2209175)

Abstract

Background: Histamine and cysteinyl leukotrienes (CysLTs) are potent inflammatory mediators in allergic rhinitis (AR). Studies involving other combinations of antihistaminics (Levocetirizine) and highly selective leukotriene receptor antagonist (LTA) (Montelukast) combination have shown additive benefits and are widely prescribed for AR.

Objective: Evaluate the efficacy and safety of Bilastine 20 mg and Montelukast 10 mg fixed-dose combination (FDC) therapy in patients with AR.

Methods: A randomized, double-blind, comparative, parallel, phase III study was conducted to evaluate efficacy and safety of Bilastine 20 mg and Montelukast 10 mg FDC at 16 tertiary care otolaryngology centres in India. Adult patients with AR for one year with IgE antibody positive and 12-h NSS score >36 in 3 days were randomized to receive either Bilastine 20 mg and Montelukast 10 mg or Montelukast 10 mg & Levocetirizine 5 mg tablets for 4 weeks. The change in total symptom score (nasal symptom scores (NSS) & non-nasal symptom scores (NNSS)) from baseline to week 4 was assessed as primary endpoint. Secondary endpoints included changes in TSS, NSS, NNSS, individual symptom scores (ISS), Rhinoconjunctivitis Quality of Life (RQLQ), discomfort due to rhinitis (VAS), and clinical global impression (CGI) scores.

Results: The change in mean TSS from baseline to week 4 in Test group (16.6 units) was comparable to reference group (17 units) ($p=0.8876$). The difference in change in mean NSS, NNSS and ISS from baseline to day 7, 14, 28 were comparable. RQLQ improved from baseline to Day 28. Significant improvements were observed in discomfort due to AR measured by VAS and CGI scores from baseline to day 14 and 28. The safety and tolerability of patients were comparable between the groups. All adverse events (AEs) were mild to moderate in severity. No patient discontinued due to AEs.

Conclusions: The FDC of Bilastine 20 mg and Montelukast 10 mg was efficacious and well tolerated in Indian patients with AR.

Keywords: Second-generation antihistamine; allergic rhinitis; clinical trial; fixed-dose combination; leukotriene receptor antagonist; safety; total symptom score.

FULL TEXT LINKS



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[Review](#)

Mol Immunol

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. 2023 Jun;158:54-67.

doi: 10.1016/j.molimm.2023.04.008. Epub 2023 Apr 27.

[House dust mite allergy: The importance of house dust mite allergens for diagnosis and immunotherapy](#)

[Huey-Jy Huang](#)¹, [Eszter Sarzsinszky](#)¹, [Susanne Vrtala](#)²

Affiliations [expand](#)

- PMID: 37119758
- DOI: [10.1016/j.molimm.2023.04.008](https://doi.org/10.1016/j.molimm.2023.04.008)

Free article

Abstract

House dust mite (HDM) allergy belongs to the most important allergies and affects approximately 65-130 million people worldwide. Additionally, untreated HDM allergy may lead to the development of severe disease manifestations such as atopic dermatitis or asthma. Diagnosis and immunotherapy of HDM allergic patients are well established but are often hampered by the use of mite extracts that are of bad quality and lack important allergens. The use of individual allergens seems to be a promising alternative to natural allergen extracts, since they represent well-defined components that can easily be produced and quantified. However, a thorough characterization of the individual allergens is required to determine their clinical relevance and to identify those allergens that are required for correct diagnosis of HDM allergy and for successful immunotherapy. This review gives an update on the individual HDM allergens and their benefits for diagnosis and immunotherapy of HDM allergic patients.

Keywords: Component-resolved diagnosis; House dust mite; Immunotherapy; Recombinant allergen.

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SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

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[Review](#)

Prim Care

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. 2023 Jun;50(2):159-178.

doi: 10.1016/j.pop.2023.01.003. Epub 2023 Mar 8.

Allergic Rhinitis

[Eric J Czech](#)¹, [Andrew Overholser](#)², [Paul Schultz](#)³

Affiliations expand

- PMID: 37105599
- DOI: [10.1016/j.pop.2023.01.003](https://doi.org/10.1016/j.pop.2023.01.003)

Abstract

Allergic rhinitis is a common ailment in primary and acute care settings. Diagnosis is clinical, by means of history and physical examination. Referral to an allergist is considered when symptoms are difficult to manage and/or confirmation by means of further testing is desired. Management of allergic rhinitis should not be considered trivial, as multiple secondary effects can present as the course progresses. Several treatment modalities exist but should begin with glucocorticoid nasal sprays and systemic second- or third-generation antihistamines.

Keywords: Allergen; Allergic rhinitis; Antihistamine; Decongestant; Histamine; Immunotherapy; Intranasal corticosteroids; Seasonal allergies.

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[Review](#)

Expert Rev Clin Immunol

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. 2023 Jun;19(6):575-584.

doi: 10.1080/1744666X.2023.2200165. Epub 2023 Apr 19.

Intranasal corticosteroid and antihistamine combinations in the treatment of allergic rhinitis: the role of the novel formulation olopatadine/mometasone furoate

[Erminia Ridolo](#)¹, [Alessandro Barone](#)¹, [Francesca Nicoletta](#)¹, [Giovanni Paoletti](#)^{2,3}, [Enrico Heffler](#)^{2,3}, [Luca Malvezzi](#)⁴, [Giorgio Walter Canonica](#)^{2,3}

Affiliations expand

- PMID: 37038974
- DOI: [10.1080/1744666X.2023.2200165](https://doi.org/10.1080/1744666X.2023.2200165)

Abstract

Introduction: Allergic rhinitis (AR) is a common disease with an important impact on the quality of life and very high management costs. In many patients, the poor control of rhinitis symptoms often requires the use of different drugs, and polytherapy tends to reduce therapeutic adherence. According to the latest version of ARIA guidelines, the currently recommended drugs for the treatment of moderate-to-severe AR are second-generation antihistamines, intranasal corticosteroids, and their combination, even in a single nasal spray device. A single medication with a rapid onset of action, acting on breakthrough symptoms too, would be advantageous, also in terms of patient compliance.

Areas covered: GSP301 (olopatadine 600 µg - mometasone furoate 25 µg) is a novel intranasal formulation, combining the second-generation antihistamine olopatadine hydrochloride with mometasone furoate. Here, we review the evidence for GSP301, especially concerning the efficacy and safety profile of this intranasal combination in the treatment of AR.

Expert opinion: The evidence provided in the current review clearly supports the use of GSP301 as a novel intranasal corticosteroid/antihistamine combination with a well-documented efficacy and safety profile in terms of rapid symptom relief and good tolerability.

Keywords: Allergic rhinitis; anti-histamine; corticosteroid; intranasal combinations; mometasone furoate; olopatadine hydrochloride.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

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[Review](#)

Allergy

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. 2023 Jun;78(6):1425-1440.

doi: 10.1111/all.15729. Epub 2023 Apr 1.

Immunomodulatory properties of mesenchymal stem cells: A potential therapeutic strategy for allergic rhinitis

[Ming Wang](#)^{1,2}, [Ning Zhao](#)³, [Chengshuo Wang](#)^{1,2}, [Zi-Bing Jin](#)³, [Luo Zhang](#)^{1,2,4}

Affiliations expand

- PMID: 36975714

- DOI: [10.1111/all.15729](https://doi.org/10.1111/all.15729)

Abstract

Allergic rhinitis is a highly prevalent chronic inflammatory disorder of the nasal mucosa that poses a significant burden on patients' health and quality of life. Current therapies for allergic rhinitis are unable to reinstate immune homeostasis or are restricted by specific allergens. Potential therapeutic strategies for allergic rhinitis are urgently needed. Mesenchymal stem cells (MSCs) are immune-privileged, have strong immunomodulatory effects, and can be easily isolated from various sources. Thus, MSC-based therapies

demonstrate potential for treating inflammatory diseases. Recently, numerous studies have investigated the therapeutic effects of MSCs in animal models of allergic rhinitis. Here, we review the immunomodulatory effects and mechanisms of MSCs on allergic airway inflammation, especially allergic rhinitis, highlight the recent research regarding MSCs in the modulation of immune cells, and discuss the clinical potential of MSC-based therapy for allergic rhinitis.

Keywords: allergic rhinitis; extracellular vesicles; immunomodulation; mesenchymal stem cells.

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- [198 references](#)

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Ann Allergy Asthma Immunol

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. 2023 Jun;130(6):797-804.e2.

doi: 10.1016/j.anai.2023.03.006. Epub 2023 Mar 15.

[House dust mite sublingual immunotherapy tablet safety in adolescents with allergic rhinoconjunctivitis: Worldwide clinical trial results](#)

[Andreas Horn](#)¹, [David I Bernstein](#)², [Kimihiro Okubo](#)³, [Terrie Dalgaard](#)⁴, [Ole Hels](#)⁴, [Helle Frobøse Sørensen](#)⁴, [Marianne Henriksen](#)⁴, [Ryuji Azuma](#)⁵, [Jan Mikler](#)⁶, [Hendrik Nolte](#)⁷

Affiliations expand

- PMID: 36924936
- DOI: [10.1016/j.anai.2023.03.006](https://doi.org/10.1016/j.anai.2023.03.006)

Free article

Abstract

Background: The house dust mite (HDM) sublingual immunotherapy (SLIT)-tablet is a treatment option for allergic rhinitis with/without conjunctivitis (AR/C) approved in adults worldwide and in adolescents in some countries.

Objective: To supplement existing adolescent HDM SLIT-tablet safety data by conducting the MT-18 trial in adolescents.

Methods: MT-18 (EudraCT:2020-000446-34) was a phase 3, open-label, single-arm, 28-day safety trial of daily HDM SLIT-tablet (12 SQ-HDM dose) in European adolescents (12-17 years) with HDM AR/C, with or without asthma. The primary end point was at least 1 treatment-emergent adverse event (TEAE). MT-18 results were compared with 12 SQ-HDM adolescent subpopulation data from previously described 1-year phase 3 trials conducted in North America (P001; [clinicaltrials.gov:NCT01700192](https://clinicaltrials.gov/ct2/show/study/NCT01700192)) or Japan (TO-203-3-2; JapicCTI:121848).

Results: No treatment-related anaphylaxis, epinephrine administrations, severe local swellings, severe mouth or throat edema, or eosinophilic esophagitis occurred in the trials. For MT-18 (N = 253), P001 (N adolescents = 189), and TO-203-3-2 (N adolescents = 206), the percentage of adolescents treated with 12 SQ-HDM reporting any TEAE was 88%, 95%, and 93%, respectively, and the percentage reporting any treatment-related AE (TRAE) was 86%, 93%, and 66%, respectively. The most common TRAEs were local application site reactions. Most TRAEs were mild in intensity and were typically experienced the first 1 to 2 days of treatment. There were no asthma-related TEAEs with the HDM SLIT-tablet. The safety profile appears similar between adolescents with or without asthma at baseline.

Conclusion: The HDM SLIT-tablet was well tolerated in European, North American, and Japanese adolescents with HDM AR/C, indicating safety of the HDM SLIT-tablet is insensitive to age or geographic region.

Trial registration: ClinicalTrials.gov Identifier: (P001: [NCT01700192](https://clinicaltrials.gov/ct2/show/study/NCT01700192)); EudraCT: (MT-18; 2020-000446-34); JapicCTI: (TO-203-3-2; 121848).

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Allergy

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. 2023 Jun;78(6):1703-1706.

doi: 10.1111/all.15706. Epub 2023 Mar 20.

[PM_{2.5} chemical constituents and allergic rhinitis: Findings from a prospective cohort study in China](#)

[Peng Jia](#)^{1,2,3,4}, [Chuanteng Feng](#)^{5,6}, [Tingting Ye](#)⁵, [Ying Shao](#)⁷, [Shujuan Yang](#)^{4,5,8}

Affiliations expand

- PMID: 36905295

- DOI: [10.1111/all.15706](https://doi.org/10.1111/all.15706)

No abstract available

- [6 references](#)

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[Allergy](#)

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. 2023 Jun;78(6):1687-1691.

doi: 10.1111/all.15653. Epub 2023 Feb 3.

[Dupilumab reduces symptom burden in allergic rhinitis and suppresses allergen-specific IgE production](#)

[Nicholas James Campion](#)¹, [Anna Doralt](#)¹, [Christian Lupinek](#)², [Markus Berger](#)³, [Katharina Poglitsch](#)⁴, [Jonas Brugger](#)⁵, [Tamara Quint](#)⁴, [Katharina Gangl](#)¹, [Christoph Sinz](#)⁴, [Tina Bartosik](#)¹, [David Tianxiang Liu](#)¹, [Lukas David Landegger](#)¹, [Aldine Tu](#)¹, [Victoria Stanek](#)¹, [Uwe Berger](#)¹, [Christine Bangert](#)⁴, [Sven Schneider](#)¹, [Julia Eckl-Dorna](#)¹

[Affiliations expand](#)

- PMID: 36691369
- DOI: [10.1111/all.15653](#)

No abstract available

Keywords: allergen-specific; allergy; birch pollen; dupilumab; grass pollen.

- [12 references](#)

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Allergy

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. 2023 Jun;78(6):1680-1682.

doi: 10.1111/all.15649. Epub 2023 Jan 27.

Varying effects of greenness in the spring and summer on the development of allergic rhinitis up to 27 years of age: The Espoo Cohort Study

[Inês Paciência^{1,2}](#), [Aino K Rantala^{1,2}](#), [Harri Antikainen³](#), [Timo T Hugg^{1,2}](#), [Maritta S Jaakkola^{1,2}](#), [Jouni J K Jaakkola^{1,2,4}](#)

Affiliations expand

- PMID: 36661482
- DOI: [10.1111/all.15649](https://doi.org/10.1111/all.15649)

No abstract available

Keywords: allergic rhinitis; early life; greenspaces; population-based cohort study; season.

- [Cited by 1 article](#)
- [10 references](#)

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Int Forum Allergy Rhinol

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. 2023 Jun;13(6):1042-1045.

doi: 10.1002/alr.23125. Epub 2023 Jan 26.

Long-term particulate matter exposure is associated with the development of nonallergic rhinitis: A case-control study

[Zechariah G Franks¹](#), [Nyall R London¹](#), [Stella E Lee²](#), [Shyam Biswal³](#), [Murugappan Ramanathan Jr¹](#), [Zhenyu Zhang^{4,5}](#)

Affiliations expand

- PMID: 36541720
- DOI: [10.1002/alr.23125](https://doi.org/10.1002/alr.23125)

No abstract available

Keywords: nonallergic rhinitis; particulate matter; pollution.

- [10 references](#)

SUPPLEMENTARY INFO

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Allergy

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. 2023 Jun;78(6):1663-1665.

doi: 10.1111/all.15588. Epub 2022 Nov 28.

[GALTectomy increases the risk of allergic rhinitis: A nationwide population-based cohort study](#)

[Tzu-Min Lin](#)^{1,2}, [Hui-Ching Hsu](#)^{1,3}, [Yu-Chuan Shen](#)³, [Yu-Sheng Chang](#)^{1,4}, [Wei-Sheng Chen](#)⁵, [Hsiang-Yen Lee](#)², [Ching-Kuei Chang](#)², [Tzu-Tung Kuo](#)⁶, [Shu-Chuan Chen](#)⁷, [Jin-Hua Chen](#)^{6,8}, [Chi-Ching Chang](#)^{1,2}

Affiliations expand

- PMID: 36412075
- DOI: [10.1111/all.15588](https://doi.org/10.1111/all.15588)

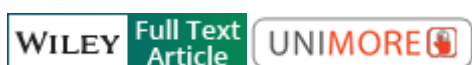
No abstract available

- [6 references](#)

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. 2023 Jun;13(6):1007-1016.

doi: 10.1002/alr.23098. Epub 2022 Nov 8.

Rhinitis symptom in patients with self-reported allergic rhinitis is influenced by sensitization pattern: A cross-sectional study of China

[Liting Wu](#)¹, [Teng Zhang](#)^{2,3}, [Wenting Luo](#)¹, [Xianhui Zheng](#)¹, [Hong Zhang](#)⁴, [Huali Ren](#)⁵, [Dongming Huang](#)⁶, [Guoping Li](#)⁷, [Chunhua Wei](#)⁸, [Linghua Dong](#)⁹, [Xin Sun](#)¹⁰, [Rongfang Zhang](#)¹¹, [Yi Wang](#)¹², [Peicun Hu](#)¹³, [Yuemin Chen](#)¹, [Qi Zhao](#)^{2,3}, [Chuangli Hao](#)¹⁴, [Baoqing Sun](#)¹

Affiliations expand

- PMID: 36278833

- DOI: [10.1002/alr.23098](https://doi.org/10.1002/alr.23098)

Abstract

Background: Allergic rhinitis (AR) is characterized by distinct clinical heterogeneity and allergic sensitization patterns. We aimed to quantify rhinitis symptoms in patients with self-reported allergic rhinitis according to the potential sensitization patterns for relevant allergens in China.

Methods: We used latent class analysis (LCA; a subset of structural equation modeling) to independently cluster patients into different patterns of atopic sensitization in an unsupervised manner, based on specific immunoglobulin E tests. AR symptom severity was assessed by the visual analogue scale. We evaluated the association between the severity of AR and the allergen sensitization patterns.

Results: LCA revealed four phenotypes of atopic sensitization among 967 patients with self-report AR. We labeled latent classes as: Class 1, weed pollens and indoor sensitization (n = 74 [7.7%]); Class 2, weed pollen with low indoor sensitization (n = 275 [28.4%]); Class 3, low or no sensitization (n = 350 [36.2%]); and Class 4, house dust mite-dominated

sensitization (n = 268 [27.7%]). AR was more severe in Class 2 compared to the other 3 classes, indicating that upper respiratory symptoms are more severe among patients with isolated seasonal rhinitis.

Conclusion: We have identified four sensitization patterns in patients with self-reported AR, which were associated with different clinical symptoms and comorbidities.

Keywords: allergen sensitization; allergic rhinitis; atopy; latent class analysis.

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- [24 references](#)

SUPPLEMENTARY INFO

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J Asthma

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. 2023 Jun;60(6):1131-1140.

doi: 10.1080/02770903.2022.2134793. Epub 2022 Oct 25.

[Aspirin desensitization following endoscopic sinus surgery is effective in patients with nonsteroidal antiinflammatory drug exacerbated respiratory disease](#)

[Ömür Aydın¹](#), [Esin Özlem Atmış²](#), [Yücel Anadolu²](#), [İrfan Yorulmaz²](#), [Gülfem Elif Çelik¹](#)

Affiliations expand

- PMID: 36218308
- DOI: [10.1080/02770903.2022.2134793](https://doi.org/10.1080/02770903.2022.2134793)

Abstract

Introduction: Aspirin desensitization (AD) is effective in relieving asthma and sinonasal outcomes in patients with non-steroidal anti-inflammatory drug (NSAID)-exacerbated respiratory disease (N-ERD). So far, only a limited number of studies evaluated the effect of AD prospectively in a controlled manner in N-ERD. It is also a current approach to recommend endoscopic sinus surgery (ESS) before AD. This study aimed to prospectively document the clinical effects of AD for 1 year in patients with N-ERD who underwent ESS in the presence of a control group.

Methods: The study included patients with N-ERD who underwent AD (group 1, $n = 22$) and patients with N-ERD in whom desensitization was indicated but was not performed (group 2, $n = 21$). All patients had ESS before enrollment in the study. Asthma and rhinosinusitis outcomes were assessed at baseline and after 1 year.

Results: The study included a total of 43 subjects (F/M:28/15, mean age: 44.7 ± 2.8 years). Fewer patients had nasal polyp recurrency in group 1 (5/22, 22.7%) than in group 2 (11/21, 52.3%) at the end of the first year ($p = 0.035$). Smell-test scores were preserved only in group 1 after 1 year. There were significant decreases in the use of both asthma and nasal medications only in group 1.

Conclusion: Our results strongly support the use of AD for the improvement of both nasal and asthmatic outcomes in patients with N-ERD for 1 year. We also recommend patients undergo ESS before AD. Further controlled studies are necessary to evaluate whether this effect lasts longer.

Keywords: NERD; aspirin hypersensitivity; asthma; desensitization; nasal polyps.

SUPPLEMENTARY INFO

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Allergy

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. 2023 Jun;78(6):1656-1659.

doi: 10.1111/all.15469. Epub 2022 Aug 9.

Impact of air pollution and meteorological factors on incidence of allergic rhinitis: A low-latitude multi-city study in China

[Xin Luo](#)^{1,2}, [Haiyu Hong](#)³, [Yongtian Lu](#)⁴, [Shumin Deng](#)⁵, [Naigeng Wu](#)⁶, [Qilin Zhou](#)², [Zhuanggui Chen](#)^{2,7}, [Peiying Feng](#)^{2,8}, [Yuqi Zhou](#)^{2,9}, [Jin Tao](#)^{2,10}, [Min Dai](#)^{2,11}, [Kun Zhang](#)^{2,11}, [Pingping Zhang](#)^{2,7}, [Yating Li](#)^{2,7}, [Guowei Xiong](#)², [Yun Cheng](#)², [Jing Su](#)², [Tingyuan Li](#)⁶, [Jingyang Chen](#)⁶, [Manhou Chao](#)^{1,2}, [Guixian Liang](#)^{1,2}, [Qingwu Wu](#)^{1,2}, [Min Zhou](#)², [Rui Zheng](#)^{1,2}, [Shuo Wu](#)^{1,2}, [Yana Zhang](#)^{1,2}, [Xuekun Huang](#)^{1,2}, [Lin Yin](#)^{1,2}, [Zifeng Liu](#)³, [Huanping Lu](#)⁶, [Qintai Yang](#)^{1,2}

Affiliations expand

- PMID: 35924735
- DOI: [10.1111/all.15469](https://doi.org/10.1111/all.15469)

No abstract available

Keywords: air pollutants; allergic rhinitis; distributed non-linear lag model; generalized additive model; meteorological factors.

- [Cited by 1 article](#)
- [6 references](#)

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances expand

FULL TEXT LINKS

Allergic Rhinitis Seasonality, Severity, and Disease Control Influence Anxiety and Depression

[Jorge Rodrigues](#)^{1,2,3}, [João V Pinto](#)^{1,3,4}, [Pedro L Alexandre](#)^{1,4}, [Bernardo Sousa-Pinto](#)^{3,5}, [Ana M Pereira](#)^{3,5,6}, [Kristof Raemdonck](#)^{2,3,7}, [Ricardo P Vaz](#)^{1,2,3}

Affiliations expand

- PMID: 35912902

- DOI: [10.1002/lary.30318](https://doi.org/10.1002/lary.30318)

Abstract

Objectives: Allergic rhinitis (AR) has been associated with anxiety and depression. A possible influence of frequency and intensity of the AR symptoms has remained unclear. Therefore, we evaluated the association between AR, as well as its control, seasonality and severity, and the presence of anxiety and depression.

Methods: Participants were selected from a preexistent national database and consecutively contacted by phone. AR was classified according to Allergic Rhinitis and its Impact on Asthma. Presence of anxiety and depression was identified by Hospital Anxiety and Depression Scale (HADS), Beck Anxiety Inventory (BAI), and Beck Depression Inventory-II (BDI-II). We built linear regression models assessing the association between any of the assessed anxiety or depression scores and the occurrence, degree of control, seasonality or severity of AR.

Results: We analyzed 115 participants with AR and 38 participants with no respiratory symptoms. Patients with AR presented higher scores of anxiety (HADS: 3.1; 95% confidence interval [CI] = 1.9; 4.3; $p < 0.001$) and depression (HADS: 3.8; 95% CI = 2.5; 5.0; $p < 0.001$). Poorer AR control was positively associated with higher prevalence and scores of anxiety (HADS: 3.0; 95% CI = 1.5; 4.5; $p < 0.001$) and depression (HADS: 1.8; 95% CI = 0.2; 3.4; $p = 0.031$). Similar results were obtained with BAI and BDI-II scales. A moderate/severe presentation of AR were also related with higher scores of anxiety (HADS: 1.7; 95% CI = 0.1; 3.2; $p = 0.040$) and depression (HADS: 1.7; 95% CI = 0.1; 3.3; $p = 0.037$).

Conclusion: The presence of AR, a poorer control, and a moderate/severe presentation of the disease were significantly associated with higher scores of anxiety and depression. Thus, it is important to alert to this association to allow a quick diagnosis of AR-associated pathologies. *Laryngoscope*, 133:1321-1327, 2023.

Keywords: allergic rhinitis; allergy; anxiety; depression; mental health.

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- [Cited by 2 articles](#)
- [36 references](#)

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MeSH termsexpand

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Ann Otol Rhinol Laryngol

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. 2023 Jun;132(6):698-704.

doi: 10.1177/00034894221111256. Epub 2022 Jul 14.

[Individual SNOT-22 Items Aid in Differentiating Between Spontaneous](#)

Cerebrospinal Fluid Rhinorrhea and Chronic Rhinosinusitis Without Nasal Polyps

[Matthew Y Liu](#)^{1,2}, [James Reed Gardner](#)³, [Bradford A Woodworth](#)⁴, [David W Jang](#)⁵, [Alissa Kanaan](#)³, [Jeffrey Paul Radabaugh](#)⁶, [William C Yao](#)⁶, [Martin Goros](#)⁷, [Megana Challa](#)², [Jessica W Grayson](#)⁴, [Zhu Wang](#)⁷, [Philip G Chen](#)²

Affiliations expand

- PMID: 35833241
- DOI: [10.1177/00034894221111256](https://doi.org/10.1177/00034894221111256)

Abstract

Objectives: Spontaneous cerebrospinal fluid (CSF) rhinorrhea is a diagnostic challenge due to its overlapping symptomatology with other sinonasal diseases. The objective of this study was to investigate whether items on the sinonasal outcome test (SNOT)-22 could suggest a diagnosis of spontaneous CSF rhinorrhea versus chronic rhinosinusitis without nasal polyps (CRSsNP).

Methods: A multi-institutional retrospective chart review of patients with spontaneous CSF rhinorrhea and a control group of CRSsNP patients was performed. Individual SNOT-22 scores and domain scores were compared.

Results: One hundred fifteen patients were included in both cohorts. Of the patients in the CSF rhinorrhea group, 48% were misdiagnosed as chronic rhinosinusitis (CRS) prior to the correct identification of a CSF leak. On bivariate analysis, the CSF rhinorrhea group scored significantly higher on the SNOT-22 for runny nose ($P < .001$) and was more likely to designate this symptom as most important ($P < .001$). The CRSsNP group scored significantly higher in nasal blockage ($P < .001$), thick nasal discharge ($P < .001$), facial pain/pressure ($P < .001$), and in the ear/facial ($P < .001$) and rhinologic ($P = .003$) domains. Multivariable logistic regression revealed that runny nose ($P < .001$) was most predictive of spontaneous CSF rhinorrhea while nasal blockage ($P < .001$), thick nasal discharge ($P < .001$), and facial pain/pressure ($P = .001$) were predictive of CRSsNP after adjusting for relevant confounders. No significant difference was observed in total SNOT-22 scores between groups ($P = .676$).

Conclusions: Spontaneous CSF rhinorrhea is commonly misdiagnosed as other sinonasal pathologies. However, individual SNOT-22 items can help aid in suggesting a CSF leak.

Spontaneous CSF rhinorrhea should be suspected in patients who have high SNOT-22 scores for runny nose and report this symptom as most important, but have lower scores related to the other cardinal symptoms of CRS.

Keywords: SNOT-22; patient reported outcome measure; quality of life; sinusitis; spontaneous CSF leak.

SUPPLEMENTARY INFO

MeSH termsexpand

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

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Eur Respir J

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. 2023 Jun 1;2300186.

doi: 10.1183/13993003.00186-2023. Online ahead of print.

The effect of beclomethasone-formoterol versus placebo on chronic cough in patients with non-CF bronchiectasis: the FORZA randomised-controlled trial

[T van der Veer](#)^{1,2,3}, [J M de Koning Gans](#)^{4,5,3}, [G J Braunstahl](#)^{4,2}, [Alp Pieters](#)⁶, [Jmw van den Berg](#)⁷, [Ras Hoek](#)^{4,8}, [Lsj Kamphuis](#)⁴, [M Bakker](#)⁴, [Avf Dubois](#)⁹, [Jgfv Aerts](#)⁴, [M M van der Eerden](#)⁴

Affiliations expand

- PMID: 37263749

- DOI: [10.1183/13993003.00186-2023](https://doi.org/10.1183/13993003.00186-2023)

No abstract available

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. 2023 Jun 1;1-12.

doi: 10.1007/s00408-023-00621-x. Online ahead of print.

[Efficacy and Safety of Eliapixant in Refractory Chronic Cough: The Randomized, Placebo-Controlled Phase 2b PAGANINI Study](#)

[Peter V Dicpinigaitis](#)¹, [Alyn H Morice](#)², [Jaclyn A Smith](#)³, [Mandel R Sher](#)⁴, [Michael Vaezi](#)⁵, [Laurent Guilleminault](#)^{6,7}, [Akio Niimi](#)⁸, [Kerstin Gude](#)⁹, [Ulrike Krahn](#)¹⁰, [Riitta Saarinen](#)¹¹, [Philippe Vieira Pires](#)¹⁰, [Melanie Wosnitza](#)¹⁰, [Lorcan McGarvey](#)¹², [PAGANINI Investigators](#)

[Affiliations expand](#)

- PMID: 37261531

- PMCID: [PMC10234230](#)

- DOI: [10.1007/s00408-023-00621-x](https://doi.org/10.1007/s00408-023-00621-x)

Free PMC article

Abstract

Introduction: The PAGANINI study evaluated the efficacy and safety of the selective P2X3 antagonist eliapixant in patients with refractory chronic cough (RCC).

Methods: PAGANINI was a randomized, double-blind, parallel-group, placebo-controlled, multicenter, dose-finding, phase 2b study. Adults with RCC lasting ≥ 12 months and cough severity ≥ 40 mm on a visual analog scale at screening were enrolled. Participants were randomized 1:1:1:1 to twice-daily 25 mg, 75 mg, or 150 mg oral eliapixant or placebo for 12 weeks. The primary endpoint was change from baseline in 24-h cough count after 12 weeks of intervention.

Results: Overall, 310 participants were randomized to twice-daily eliapixant 25 mg (n = 75), 75 mg (n = 78), 150 mg (n = 80), or placebo (n = 77). A statistically significant dose-response signal with eliapixant was detected for the primary endpoint (all dose-response models, adjusted $p < 0.1$; one-sided). Adverse events (AEs) were reported in 39 (51%) participants with placebo and 43–51 (57–65%) participants receiving eliapixant. The most common AE was dysgeusia, occurring in 1% (n = 1) of the placebo group and 1–16% (n = 1–13) of the eliapixant groups in a dose-related manner. One case of a moderate drug-induced liver injury occurred in a participant receiving 150 mg twice-daily eliapixant.

Conclusion: Eliapixant demonstrated efficacy and a favorable taste tolerability profile in RCC. However, a drug-induced liver injury contributed to intensified liver monitoring in clinical trials with eliapixant and discontinuation of the entire development program in all indications by Bayer AG.

Trial registration: ClinicalTrials.gov identifier [NCT04562155](https://clinicaltrials.gov/ct2/show/study/NCT04562155); registered September 18, 2020.

Keywords: Chronic cough; Eliapixant; P2X3 receptor antagonist; Phase 2b clinical trial.

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Conflict of interest statement

PVD reports remuneration for consultancy from Bayer AG, Bellus Health, Chiesi, Merck, and Shionogi. AHM reports remuneration for consultancy from Bayer AG, Bellus Health, Boehringer Ingelheim, Merck, Pfizer, Procter & Gamble, and Shionogi, lecture fees from AstraZeneca and Boehringer Ingelheim, and grant support from Afferent Pharmaceuticals, Infirst, Merck, and Procter & Gamble. JAS reports research grants and remuneration for

consultancy from Algernon, AstraZeneca, Axalbion, Bayer AG, Bellus Health, Boehringer Ingelheim, Chiesi, Merck, Nocion Therapeutics, Shionogi, and Trevi, and non-financial support and royalties from Vitalograph paid to Manchester University NHS Foundation Trust that may be shared with the department in which JAS works. JAS is funded by the Manchester NIHR Biomedical Research Centre and an NIHR Senior Investigator Award. MRS reports research grants from Afferent Pharmaceuticals, Bayer AG, Bellus Health, Merck, NeRRe Therapeutics, and Shionogi, remuneration for lectures from Merck, and has served on advisory committees for Afferent Pharmaceuticals, AstraZeneca, Bayer AG, Bellus Health, Merck, NeRRe Therapeutics, Nocion Therapeutics, and Shionogi and on a Data and Safety Monitoring Board for Nocion Therapeutics. MV reports remuneration for consultancy in litigation relating to acid suppressive therapy, has served on an advisory committee for Bayer AG, Diversatek, Ironwood, ISOThrive, Medtronic, Phathom, and Sanofi, and holds a patent with Diversatek. LG reports a research grant from AstraZeneca, remuneration for lectures from AstraZeneca, Bayer AG, GlaxoSmithKline, MSD, Novartis, and Sanofi, and remuneration for consultancy from AstraZeneca, Bayer AG, Chiesi, GlaxoSmithKline, Merck, MSD, Novartis, and Sanofi. AN reports research grants from Kyorin Pharmaceutical and Novartis and remuneration for lectures from AstraZeneca, GlaxoSmithKline, Kyorin Pharmaceutical, MSD, and Novartis. KG, UK, RS, and MW are employees of Bayer AG. PVP was an employee of Bayer AG at the time of the study and is now an employee of the Janssen Pharmaceutical Companies of Johnson & Johnson. LMG reports research grants from Bayer AG, Bellus Health, Chiesi, Merck, and Shionogi, remuneration for lectures from Bayer AG, Bellus Health, Chiesi, GlaxoSmithKline, Merck, and Shionogi, remuneration for consultancy from Bayer AG, Bellus Health, Chiesi, Merck, NeRRe Therapeutics, Nocion Therapeutics, and Shionogi, and has served on advisory committees for Applied Clinical Intelligence, Bayer AG, Bellus Health, Chiesi, Merck, NeRRe Therapeutics, Nocion Therapeutics, and Shionogi and on a Data and Safety Monitoring Board for Bayer AG.

- [30 references](#)
- [3 figures](#)

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Respir Care

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. 2023 Jun;68(6):821-837.
doi: 10.4187/respcare.11069.

Respiratory Care Management of COPD Exacerbations

[Dean R Hess](#)¹

Affiliations expand

- PMID: 37225653
- PMCID: PMC10208989 (available on 2024-06-01)
- DOI: [10.4187/respcare.11069](https://doi.org/10.4187/respcare.11069)

Abstract

A COPD exacerbation is characterized by an increase in symptoms such as dyspnea, cough, and sputum production that worsens over a period of 2 weeks. Exacerbations are common. Respiratory therapists and physicians in an acute care setting often treat these patients. Targeted O₂ therapy improves outcomes and should be titrated to an S_{pO₂} of 88-92%. Arterial blood gases remain the standard approach to assessing gas exchange in patients with COPD exacerbation. The limitations of arterial blood gas surrogates (pulse oximetry, capnography, transcutaneous monitoring, peripheral venous blood gases) should be appreciated so that they can be used wisely. Inhaled short-acting bronchodilators can be provided by nebulizer (jet or mesh), pressurized metered-dose inhaler (pMDI), pMDI with spacer or valved holding chamber, soft mist inhaler, or dry powder inhaler. The available evidence for the use of heliox for COPD exacerbation is weak. Noninvasive ventilation (NIV) is standard therapy for patients who present with COPD exacerbation and is supported by clinical practice guidelines. Robust high-level evidence with patient important outcomes is lacking for the use of high-flow nasal cannula in patients with COPD exacerbation. Management of auto-PEEP is the priority in mechanically ventilated patients with COPD. This is achieved by reducing airway resistance and decreasing minute ventilation. Trigger asynchrony and cycle asynchrony are addressed to improve patient-ventilator interaction. Patients with COPD should be extubated to NIV. Additional high-level evidence is needed before widespread use of extracorporeal CO₂ removal. Care coordination can improve the

effectiveness of care for patients with COPD exacerbation. Evidence-based practices improve outcomes in patients with COPD exacerbation.

Keywords: COPD; aerosol therapy; auto-PEEP; care coordination; exacerbation; extracorporeal CO₂ removal; high-flow nasal cannula; noninvasive ventilation; oxygen therapy.

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Conflict of interest statement

Dr Hess discloses relationships with Daedalus Enterprises, American Association for Respiratory Care, American Respiratory Care Foundation, Lungpacer, University of Pittsburgh, Jones and Bartlett, McGraw Hill, and UpToDate. Dr Hess is managing editor of Respiratory Care.

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

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Am J Respir Crit Care Med

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. 2023 Jun 1;207(11):1539-1542.

doi: 10.1164/rccm.202211-2128LE.

Efficacy and Safety of Gefapixant for Refractory or Unexplained Chronic Cough over 52 Weeks

[Surinder S Birring](#)¹, [Peter V Dicpinigaitis](#)², [Jaclyn A Smith](#)³, [Alyn H Morice](#)⁴, [Lorcan P McGarvey](#)⁵, [Ian D Pavord](#)⁶, [Allison Martin Nguyen](#)⁷, [Jonathan Schelfhout](#)⁷, [Qing Li](#)⁷, [Beata Iskold](#)⁷, [Stuart A Green](#)⁷, [George Philip](#)⁷, [David R Muccino](#)⁷, [Carmen La Rosa](#)⁷

Affiliations expand

- PMID: 36996347
- DOI: [10.1164/rccm.202211-2128LE](https://doi.org/10.1164/rccm.202211-2128LE)

No abstract available

SUPPLEMENTARY INFO

Publication types, Grant supportexpand

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Ann Allergy Asthma Immunol

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. 2023 Jun;130(6):808-809.

doi: 10.1016/j.anai.2023.03.018. Epub 2023 Mar 25.

Habit cough is a cause of chronic cough in adults

[Miles Weinberger](#)¹, [Dennis Buettner](#)²

Affiliations expand

- PMID: 36972761
- DOI: [10.1016/j.anai.2023.03.018](https://doi.org/10.1016/j.anai.2023.03.018)

No abstract available

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Nurs Open

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. 2023 Jun;10(6):4055-4063.

doi: 10.1002/nop2.1665. Epub 2023 Feb 23.

Health-related experiences of adults with chronic cough: Empirical research mixed methods

[Michael Weiner](#)^{1,2,3}, [Jessica Weaver](#)⁴, [Tayler Gowan](#)¹, [Sean A Baird](#)¹, [Monica Huffman](#)¹, [Paul Dexter](#)^{1,2,5}, [Vishal Bali](#)⁴, [Jonathan Schelfhout](#)⁴, [Ashley Griffith](#)¹, [Jacob Pell](#)², [Ishita Doshi](#)⁴, [Tasneem Talib](#)^{1,2}

Affiliations [expand](#)

- PMID: 36815576
- PMCID: [PMC10170930](#)
- DOI: [10.1002/nop2.1665](#)

Free PMC article

Abstract

Aim: To describe adults' health-related experiences with chronic cough.

Design: Survey and interviews.

Methods: Participants completed questionnaires and interviews, to explore chronic cough's impact and management.

Data sources: Patients aged 18-85 years with at least three cough-related encounters within 56-120 days.

Results: Forty-one patients were surveyed. Mean cough severity was 4.5 (scale 0-9). Chronic cough-related problems included embarrassment (66%), fatigue (56%), and anxiety or depression (49%). Testing was judged insufficient by 44%. Only 28% were satisfied with treatment; 20% reported abandoning treatment due to ineffectiveness. Interview themes (N = 30) included frustration with diagnostic uncertainty, and feelings of therapeutic futility. Some reported psychological distress. Work and socializing were commonly disrupted.

Conclusion: Diagnostic uncertainty, perceived limitations of testing, and treatment failures suggest needs for better approaches to evaluating and treating chronic cough. Special attention to identifying and addressing mental health issues appears warranted.

Keywords: chronic; cough; illness beliefs; patient experiences; patient survey.

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Conflict of interest statement

Jessica Weaver, Vishal Bali, and Jonathan Schelfhout are employees of, and have stock ownership of, Merck & Co., Inc. Ishita Doshi was an employee and stock holder of Merck & Co., Inc. Michael Weiner's potentially relevant stock holdings are as follows: Abbvie, Inc., Accuray Inc., Allscripts Healthcare Solutions, Amgen, Inc., Boston Scientific Corp., Bristol Myers Squibb, Crispr Therapeutics Ag Com, Express Scripts Hldg Co., General Electric Co., Globus Med, Inc., Integer Hldgs Corp Com, Integra Lifesciences Holdings Corp., Intl Business Mach, Johnson & Johnson, Mallinckrodt PLC, Mead Johnson Nutrition, Medtronic PLC, Metlife Inc Com, Mylan N V SHS Euro, Novo-Nordisk A S ADR, Nuvasive, Inc., Orthofix Intl N.V., Perspecta Inc Com, Pfizer, Inc., Resmed, Inc., Roche Hldg Ltd., Seaspine Hldgs Corp., Senseonics Hldgs, Inc., Stryker Corp., Teva Pharmaceutical Industries, Varex Imaging Corp., Varian Med Sys, Inc., Walgreens Boots Alliance, Inc., Zimmer Biomet Hldgs, Inc., Zoetis, Inc. The following co-authors received funding for their work through Merck, Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, NJ, USA: Michael Weiner, Tayler Gowan, Sean A. Baird, Monica Huffman, Paul Dexter, Ashley Griffith, Jacob Pell, and Tasneem Talib.

- [30 references](#)

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Publication types, MeSH termsexpand

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[Review](#)

Pulm Ther

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. 2023 Jun;9(2):177-193.

doi: 10.1007/s41030-023-00216-0. Epub 2023 Feb 11.

Early Diagnosis and Treatment of Idiopathic Pulmonary Fibrosis: A Narrative Review

[Hana Alsomali](#)¹, [Evelyn Palmer](#)², [Avinash Aujayeb](#)³, [Wendy Funston](#)^{1,4}

Affiliations [expand](#)

- PMID: 36773130
- PMCID: [PMC10203082](#)
- DOI: [10.1007/s41030-023-00216-0](#)

Free PMC article

Abstract

Idiopathic pulmonary fibrosis (IPF) is a chronic, progressive fibrosing interstitial lung disease of unknown aetiology. Patients typically present with symptoms of chronic dyspnoea and cough over a period of months to years. IPF has a poor prognosis, with an average life expectancy of 3-5 years from diagnosis if left untreated. Two anti-fibrotic

medications (nintedanib and pirfenidone) have been approved for the treatment of IPF. These drugs slow disease progression by reducing decline in lung function. Early diagnosis is crucial to ensure timely treatment selection and improve outcomes. High-resolution computed tomography (HRCT) plays a major role in the diagnosis of IPF. In this narrative review, we discuss the importance of early diagnosis, awareness among primary care physicians, lung cancer screening programmes and early IPF detection, and barriers to accessing anti-fibrotic medications.

Keywords: Anti-fibrotic medications; Early diagnosis; Idiopathic pulmonary fibrosis.

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Conflict of interest statement

Hana Alsomali, Evelyn Palmer, Avinash Aujayeb and Wendy Funston have nothing to disclose.

- [101 references](#)

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J Asthma

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. 2023 Jun;60(6):1221-1226.

doi: 10.1080/02770903.2022.2139719. Epub 2022 Nov 14.

Bronchodilator reversibility testing in long-term cough and dyspnea after

Covid-19 viral infection: a trigger for asthma?

[Aysegul Gencer](#)¹, [Buket Caliskaner Ozturk](#)², [Sermin Borekci](#)², [Bilun Gemicioglu](#)²

Affiliations expand

- PMID: 36279253
- DOI: [10.1080/02770903.2022.2139719](https://doi.org/10.1080/02770903.2022.2139719)

Abstract

Objective: This study aims to investigate the presence of underlying chronic airway disease in individuals with chronic cough and dyspnea lasting longer than eight weeks and who had previously Coronavirus disease 2019 (COVID-19) and had no known lung disease. **Methods:** A total of 151 patients admitted to the respiratory diseases outpatient room with the complaint of cough and/or dyspnea that persisted for at least eight weeks following COVID-19 infection were accrued to the study. Demographic characteristics, smoking history, the severity of lung involvement on chest computed tomography in the acute phase of Covid-19 infection, and bronchodilator reversibility test results were recorded. Smoking history and forced expiratory volume in the first second (FEV1) were compared. **Results:** FEV1 increase ≥ 200 ml was observed in 40 (26.5%) patients. In 24 (15.9%) patients, an increase in FEV1 was found to be 200 ml and above, and the percentage of FEV1 was 12% or more. While 14 (9.3%) patients were diagnosed with asthma, 13 (8.6%) patients were diagnosed with nonreversible airflow obstruction (NRAO), and 1 (0.7%) patient was diagnosed with chronic obstructive pulmonary disease (COPD). **Conclusions:** COVID-19 infection may play a vital role in initiating asthma pathogenesis. It should be kept in mind that viral infection-related asthma may be the underlying cause of prolonged cough and dyspnea after COVID-19 infection.

Keywords: Post-COVID-19; airway reversibility; bronchial hyperresponsiveness; post-COVID cough; viral infection related-asthma.

SUPPLEMENTARY INFO

MeSH terms, Substances expand

FULL TEXT LINKS



[Proceed to details](#)

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Ann Otol Rhinol Laryngol

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. 2023 Jun;132(6):705-708.

doi: 10.1177/00034894221112517. Epub 2022 Jul 14.

Normative Values for the Leicester Cough Questionnaire in Healthy Individuals

[Jane E Reynolds](#)¹, [Marie E Jetté](#)², [Miranda L Wright](#)³, [Krishna M Sundar](#)⁴, [Amanda I Gillespie](#)⁵, [Laurie J Slovarp](#)¹

Affiliations expand

- PMID: 35833581
- DOI: [10.1177/00034894221112517](https://doi.org/10.1177/00034894221112517)

Abstract

Introduction: The primary self-assessment questionnaire used for patients with chronic cough is the Leicester Cough Questionnaire (LCQ). The LCQ is a validated questionnaire that ranges in total score from 3 to 21. While it is known that a higher score on the LCQ reflects a better quality of life, normative data have not been reported for this questionnaire.

Objective: The purpose of this study was to determine normative LCQ scores on a healthy population without cough.

Methods: The LCQ was distributed via electronic survey to the authors' universities, professional affiliation email lists, and personal contacts. Participants were included if they were at least 18, nonsmokers, and without abnormal cough, without pulmonary disease, and without neurological disease. Participants answered questions regarding age, gender, and race/ethnicity, and completed the 19 LCQ questions.

Results: One hundred forty-three (118 women) LCQ responses were analyzed. Average participant age was 47 years (SD = 13) and 133 (93%) were Caucasian. The mean LCQ Total score was 20.23 (SD = 0.85) with scores ranging from 17.05 to 21.

Conclusions: This study determined the following LCQ scores should be considered normal threshold scores: Total score - 17.68, Physical domain - 5.36, Psychological domain - 5.81, and Social domain - 6.06. The findings of this study will assist clinicians in determining severity of cough impact on quality of life using the LCQ. Further research is needed to ensure more complete participant demographic representation.

Keywords: LCQ; cough; normative values.

- [Cited by 2 articles](#)

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

Sage Journals 

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

1

Eur Respir J

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. 2023 Jun 1;2300186.

doi: 10.1183/13993003.00186-2023. Online ahead of print.

[The effect of beclomethasone-formoterol versus placebo on chronic cough in patients with non-CF bronchiectasis: the FORZA randomised-controlled trial](#)

[T van der Veer](#)^{1,2,3}, [J M de Koning Gans](#)^{4,5,3}, [G J Braunstahl](#)^{4,2}, [Alp Pieters](#)⁶, [Jmw van den Berg](#)⁷, [Ras Hoek](#)^{4,8}, [Lsj Kamphuis](#)⁴, [M Bakker](#)⁴, [Avf Dubois](#)⁹, [JgJv Aerts](#)⁴, [M M van der Eerden](#)⁴

Affiliations expand

- PMID: 37263749
- DOI: [10.1183/13993003.00186-2023](https://doi.org/10.1183/13993003.00186-2023)

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Anatol J Cardiol

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. 2023 Jun;27(6):319-327.

doi: 10.14744/AnatolJCardiol.2023.2864.

[The Impact of Cystic Fibrosis- and Noncystic Fibrosis- Bronchiectasis on Pulmonary Artery Wall Thickness and Right Heart Functions Assessed by Speckle-Tracking Echocardiography](#)

[Emre Gürel](#)¹, [Duygu Vezir](#)², [Tuba Güçtekin](#)¹, [Zekeriya Doğan](#)¹, [Derya Kocakaya](#)², [Sehnaz Olgun](#)², [Murat Sünbül](#)¹, [Altuğ Çinçin](#)¹, [Beste Özben](#)¹, [Nurten Sayar](#)¹, [Mustafa Kürşat Tigen](#)¹, [Berrin Ceyhan](#)²

Affiliations expand

- PMID: 37257004
- DOI: [10.14744/AnatolJCardiol.2023.2864](https://doi.org/10.14744/AnatolJCardiol.2023.2864)

Free article

Abstract

Background: Right heart functions are affected in patients with bronchiectasis as a result of pulmonary hypertension induced by chronic hypoxemia. Pulmonary artery wall thickness has recently been introduced as a sign of intensive and prolonged inflammation. The aim of this study was to analyze right ventricular and right atrial functions and to measure pulmonary artery wall thickness in patients with cystic fibrosis-bronchiectasis in comparison to those with noncystic fibrosis-bronchiectasis and healthy individuals.

Methods: We studied 36 patients with cystic fibrosis-bronchiectasis, 34 patients with noncystic fibrosis-bronchiectasis, and 32 age- and sex-matched control subjects. Lung function tests were performed. All subjects underwent comprehensive echocardiographic evaluation including conventional, tissue Doppler, speckle-tracking, and pulmonary artery wall thickness measurements.

Results: Right ventricular global longitudinal strain and global longitudinal right atrial strain during ventricular systole decreased in cystic fibrosis-bronchiectasis group compared with noncystic fibrosis-bronchiectasis and control groups ($P < .001$, both). Conversely, pulmonary artery wall thickness was increased in cystic fibrosis-bronchiectasis group in comparison to other groups ($P < .001$). Moreover, right ventricular global longitudinal strain was lower and pulmonary artery wall thickness was higher in patients with airflow obstruction ($P < .001$ and $P = .025$, respectively) than in those without. Only right ventricular global longitudinal strain was significantly correlated with pulmonary function test parameters. The negative effect of cystic fibrosis on right ventricular and right atrial functions was independent of age, gender, and disease duration.

Conclusion: Our study showed that right ventricular and right atrial functions were deteriorated and pulmonary artery wall was thickened in cystic fibrosis-bronchiectasis patients more than noncystic fibrosis-bronchiectasis patients. Right ventricular global longitudinal strain detected subclinical right ventricular dysfunction and was associated with the severity of pulmonary disease.

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Respirology

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. 2023 May 30.

doi: 10.1111/resp.14527. Online ahead of print.

[Bronchiectasis is associated with coronary artery calcification even in never smokers](#)

[Lewis Holmes](#)¹, [Isaac Lui](#)², [Paul Lilburn](#)^{1,3}, [Christopher Naoum](#)⁴, [Leonard Kritharides](#)^{4,5}, [Lloyd Ridley](#)^{2,5}, [Lucy Morgan](#)^{1,5}

Affiliations expand

- PMID: 37253637
- DOI: [10.1111/resp.14527](https://doi.org/10.1111/resp.14527)

No abstract available

Keywords: CT chest; atherosclerosis; bronchiectasis; cardiovascular disease; coronary artery calcification.

- [4 references](#)

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[Review](#)

Expert Opin Pharmacother

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. 2023 Jun;24(9):1075-1089.

doi: 10.1080/14656566.2023.2210763. Epub 2023 May 9.

Advances in pharmacotherapy for bronchiectasis in adults

[Xiao-Xian Zhang](#)¹, [Zhao-Ming Chen](#)¹, [Zhen-Feng He](#)¹, [Wei-Jie Guan](#)^{1,2,3}

Affiliations expand

- PMID: 37161410
- DOI: [10.1080/14656566.2023.2210763](https://doi.org/10.1080/14656566.2023.2210763)

Abstract

Introduction: Bronchiectasis has become a growing concern of chronic airway disease because of the enormous socioeconomic burden. Four cardinal interdependent components - impaired airway defense, recurrent airway infections, inflammatory response, and airway damage, in conjunction with the underlying etiology, have collectively played a role in modulating the vicious vortex of the pathogenesis and progression of bronchiectasis. Current pharmacotherapy aims to target at these aspects to break the vicious vortex.

Areas covered: The authors retrieve and review, in MEDLINE, Web of Science and ClinicalTrials.gov registry, the studies about pharmacotherapy for bronchiectasis from

these aspects: antibiotics, mucoactive medications, bronchodilators, anti-inflammatory drug, and etiological treatment.

Expert opinion: Future drug development and clinical trials of bronchiectasis need to pay more attention to the different phenotypes or endotypes of bronchiectasis. There is a need for the development of novel inhaled antibiotics that could reduce bacterial loads, improve quality-of-life, and decrease exacerbation risks. More efforts are needed to explore the next-generation neutrophil-targeted therapeutic drugs that are expected to ameliorate respiratory symptom burden, reduce exacerbation risks, and hinder airway destruction in bronchiectasis.

Keywords: Bronchiectasis; exacerbation; inhaled antibiotics; neutrophil inflammation; pharmacotherapy.

SUPPLEMENTARY INFO

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Case Reports

Arch Bronconeumol

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. 2023 Jun;59(6):401-402.

doi: 10.1016/j.arbres.2023.01.004. Epub 2023 Jan 18.

[Alpha₁-Antitrypsin Inherited Variants in Patients With Bronchiectasis](#)

[Article in English, Spanish]

[Stefano Aliberti](#)¹, [Andrea Gramegna](#)², [Manuela Seia](#)³, [Francesco Malvestiti](#)⁴, [Marco Mantero](#)², [Giovanni Sotgiu](#)⁵, [Edoardo Simonetta](#)¹, [Daniele Prati](#)⁴, [Stefania Paganini](#)³, [Ilaria Ferrarotti](#)⁶, [Elena Benzoni](#)³, [Anna Stainer](#)¹, [Martina Santambrogio](#)⁷, [Laura Saderi](#)⁵, [Alice M Balderacchi](#)⁶, [Luca Valenti](#)⁸, [Angelo G Corsico](#)⁶, [Francesco Amati](#)⁹, [Francesco Blasi](#)²

Affiliations expand

- PMID: 36710175
- DOI: [10.1016/j.arbres.2023.01.004](https://doi.org/10.1016/j.arbres.2023.01.004)

No abstract available

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Eur Radiol

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. 2023 Jun;33(6):4198-4204.

doi: 10.1007/s00330-022-09310-4. Epub 2022 Dec 6.

Prevalence of non-bronchial systemic culprit arteries in patients with hemoptysis with bronchiectasis and chronic pulmonary infection who underwent de novo bronchial artery embolization

[Takashi Nishihara](#)¹, [Hideo Ishikawa](#)², [Naoki Omachi](#)², [Yu Yamaguchi](#)², [Kazushi Kitaguchi](#)², [Tomoaki Hattori](#)²

Affiliations expand

- PMID: 36472693
- DOI: [10.1007/s00330-022-09310-4](https://doi.org/10.1007/s00330-022-09310-4)

Abstract

Objectives: To identify the prevalence of non-bronchial systemic culprit arteries and their relationship to bleeding lobes in patients with hemoptysis with bronchiectasis and chronic pulmonary infection who underwent de novo bronchial artery embolization (BAE).

Methods: Data of 83 consecutive patients with bronchiectasis and chronic pulmonary infection (non-tuberculous mycobacteriosis, aspergillosis, and tuberculosis) who underwent de novo BAE between January 2019 and December 2020 were retrospectively reviewed. The prevalence of culprit arteries was investigated.

Results: Fifty-five patients (66%) had 172 non-bronchial systemic culprit arteries. The bleeding lobes were the right upper, right middle, right lower, left upper, and left lower lobes in 14 (17%), 20 (24%), 7 (8%), 31 (37%), and 11 (13%) patients, respectively. The internal thoracic (49%; n = 41), intercostal (28%; n = 23), and inferior phrenic (28%; n = 23) arteries were the top three non-bronchial systemic culprit arteries, which were involved in all five types of bleeding lobes. The costocervical trunk and thoracoacromial and lateral thoracic arteries were predominant in patients with upper lobe bleeding. Ligament arteries were predominant in patients with left lower lobe bleeding.

Conclusions: These findings will better ensure the identification of non-bronchial systemic culprit arteries in patients with hemoptysis with bronchiectasis and chronic pulmonary infection. All systemic arteries, especially those which are adjacent to the lung lesions, should be evaluated carefully using MDCT; the internal thoracic, intercostal, and inferior phrenic arteries should be proactively assessed using angiography.

Key points: • Non-bronchial systemic culprit arteries were identified in 66% of patients with hemoptysis with bronchiectasis and chronic pulmonary infection who underwent de novo bronchial artery embolization. • The internal thoracic (49%), intercostal (28%), and inferior phrenic (28%) arteries were the top three arteries, which were involved in all five types of bleeding lobes. • The costocervical trunk and thoracoacromial and lateral thoracic arteries were prominent in patients with upper lobe bleeding, and the ligament artery was prominent in patients with left lower lobe bleeding.

Keywords: Bronchiectasis; Culprit arteries; Embolization; Hemoptysis; Respiratory tract infections.

- [Cited by 1 article](#)
- [22 references](#)

SUPPLEMENTARY INFO

MeSH termsexpand

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J Asthma

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. 2023 Jun;60(6):1227-1236.

doi: 10.1080/02770903.2022.2140435. Epub 2022 Nov 14.

Primary antibody deficiencies represent an underestimated comorbidity in asthma patients: efficacy of immunoglobulin replacement therapy in asthma control

[Emanuele Vivarelli](#)¹, [Andrea Matucci](#)¹, [Paola Parronchi](#)², [Francesco Liotta](#)², [Lorenzo Cosmi](#)², [Oliviero Rossi](#)¹, [Edoardo Cavigli](#)³, [Alessandra Vultaggio](#)¹

Affiliations expand

- PMID: 36282045
- DOI: [10.1080/02770903.2022.2140435](https://doi.org/10.1080/02770903.2022.2140435)

Abstract

Objective: Primary antibody deficiencies (PAD) are an underestimated comorbidity in asthma and its treatment could improve disease control.

Methods: a retrospective cohort of asthmatics, affected by IgG subclass deficiency or unclassified antibody deficiency and treated with low-dose intravenous immunoglobulin replacement therapy (IRT) was recruited. Demographic and clinical data, chest CT scan, blood eosinophils, atopy, chronic oral corticosteroid (OCS) therapy were evaluated at baseline. Asthma exacerbations, lower respiratory tract infections (LRTI), upper respiratory tract infections (URTI) and asthma-related hospitalizations were assessed after one and two years of IRT.

Results: 57 moderate-to-severe asthmatics were enrolled, mostly affected by T2 low asthma (39/57, 68.4%). After one year, IRT was effective in improving, irrespective of bronchiectasis, atopy, eosinophils and PAD type: 1) trough IgG (826.9 ± 221.3 vs 942.2 ± 195.1 mg/dl; $p < 0.0001$) and IgG subclasses (IgG1 355.4 ± 88.4 vs 466.7 ± 122.3 , $p < 0.0001$; IgG2 300.1 ± 130.1 vs 347.6 ± 117.3 , $p < 0.0005$) serum levels. 2) asthma exacerbations (6.4 ± 4.1 vs 2.4 ± 1.9 , $p < 0.0001$), LRTI (4.3 ± 3.9 vs 1.3 ± 1.5 , $p < 0.0001$) and hospitalization rate (0.26 ± 0.7 vs 0.05 ± 0.2 , $p < 0.01$). These results persisted after 2 years of therapy. Estimated mean cumulative OCS exposure was reduced by 4500 mg over the 2-year period.

Conclusions: low-dose IRT is effective in improving asthma control and lessening OCS burden in asthmatics affected by PAD.

Keywords: Asthma; OCS sparing; bronchiectasis; immunoglobulin replacement therapy; primary antibody deficiencies.

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

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