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

1

Review

Br J Gen Pract

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. 2024 Jun 20;74(suppl 1):bjgp24X737745.

doi: 10.3399/bjgp24X737745.

[Role of FeNO in predicting the responsiveness of inhaled corticosteroids in COPD: a systematic review](#)

[Reshma Ramesh](#)¹, [Andrea Georgiou](#)¹, [Timothy Harries](#)¹

Affiliations expand

- PMID: 38902064
- DOI: [10.3399/bjgp24X737745](https://doi.org/10.3399/bjgp24X737745)

Abstract

Background: Fractional exhaled nitric oxide (FeNO) as a predictor of inhaled corticosteroid (ICS) response in asthma has been established. However, the same has not been established in chronic obstructive pulmonary disease (COPD). An optimal value of FeNO for prescribing and monitoring ICS response has not been quantified.

Aim: To examine the evidence for this association.

Method: A systematic review was conducted of randomised controlled trials and observational studies examining the association between FeNO level and response to ICS in COPD patients. All studies examining this association were included. Five databases were searched thoroughly. Systematic screening, full-text reviews, and data extraction were carried out based on eligibility criteria.

Results: A total of 8690 studies were identified, 342 texts were screened fully, and six studies were included for the final review. One was a randomised controlled trial and the other five were non-randomised interventional trials. One study was conducted in asthma-COPD overlap (ACO patients). After ICS use, three studies found statistically significant correlations between FeNO and lung function improvement (FEV1), and three studies also found significant correlations between FeNO and COPD quality-of-life scores.

Conclusion: Measurement of FeNO is non-invasive and standardised, with results available at the point of testing. Because of the small sample size and short duration of studies, exacerbation frequencies were not measured. Despite this, the review suggests that FeNO may be a potential biomarker for assessing ICS response in COPD. Further research that stratifies patients by FeNO levels and assesses the impact on acute exacerbations is needed to understand its potential value in routine clinical practice.

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SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

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. 2024 Jun 20.

doi: 10.1097/NJH.0000000000001042. Online ahead of print.

Dyspnea and Palliative Care in Advanced Chronic Obstructive Pulmonary Disease: A Rapid Review

[Sarah N Miller](#), [Elizabeth Higgins](#), [Joan Cain](#), [Patrick Coyne](#), [Robert Peacock](#), [Ayaba Logan](#), [Tracy Fasolino](#), [Kathleen Oare Lindell](#)

- PMID: 38901025
- DOI: [10.1097/NJH.0000000000001042](https://doi.org/10.1097/NJH.0000000000001042)

Abstract

Dyspnea is the most common and activity-limiting symptom for those with chronic obstructive pulmonary disease (COPD). Treatment is complex, palliative care (PC) dyspnea relief interventions are poorly understood, and PC remains underutilized in COPD despite national guidelines and recommendations. The purpose of this rapid review was to explore the concept of dyspnea and role of PC through the lens of providers, caregivers, and patients with COPD. A systematic approach for synthesis was used to identify 13 articles published between January 2018 and October 2023. Team members compared data via visualization and theme clustering to identify key conclusions describing operationalization of dyspnea, management, and PC implications. Dyspnea operationalization was challenging, with inconsistent measurement and terminology. Dyspnea was a significant burden in COPD and contributed to complexity of treatment. Opioids were used most often to treat dyspnea, but provider perspectives and biases can influence treatment decisions and perceptions of opioid therapy by the patient and caregiver. Evidence-based clinical practice guidelines and policies are needed to clarify the use of opioid therapy for dyspnea management to reduce stigmatization and barriers to treatment. Provider education should emphasize a multipronged approach to treatment of dyspnea in COPD with integration of PC early in the care continuum.

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Conflict of interest statement

The authors have no conflicts of interest to disclose.

- [30 references](#)

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Eur Respir J

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. 2024 Jun 20;63(6):2400163.

doi: 10.1183/13993003.00163-2024. Print 2024 Jun.

[ChatGPT versus Bing: a clinician assessment of the accuracy of AI platforms when responding to COPD questions](#)

[Arouba Imtiaz](#)¹, [Joanne King](#)², [Steve Holmes](#)³, [Ayushman Gupta](#)⁴, [Mona Bafadhel](#)⁵, [Marc L Melcher](#)⁶, [John R Hurst](#)⁷, [Daniel Farewell](#)⁸, [Charlotte E Bolton](#)⁹, [Jamie Duckers](#)¹⁰

Affiliations expand

- PMID: 38811043
- DOI: [10.1183/13993003.00163-2024](https://doi.org/10.1183/13993003.00163-2024)

No abstract available

Conflict of interest statement

Conflict of interest: The authors have no potential conflicts of interest to disclose.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

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Chest

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. 2024 Jun 19:S0012-3692(24)00745-1.

doi: 10.1016/j.chest.2024.05.030. Online ahead of print.

[Associations between air pollution and the onset of acute exacerbations of chronic obstructive pulmonary disease: A time-stratified case-crossover study in China](#)

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Affiliations expand

- PMID: 38906462

- DOI: [10.1016/j.chest.2024.05.030](https://doi.org/10.1016/j.chest.2024.05.030)

Abstract

Background: Associations between air pollution and the acute exacerbations of chronic obstructive pulmonary disease (AECOPD) have been established primarily in time-series studies in which exposure and case data were at the aggregate level, limiting the identification of susceptible populations.

Research question: Are air pollutants associated with the onset of AECOPD in China? Who is more susceptible to the effects of air pollutants?

Study design and methods: AECOPD data were obtained from the Acute Exacerbation of Chronic Obstructive Pulmonary Disease Registry study and air pollution data were assigned to individuals based on their residential address. We adopted a time-stratified case-crossover study design combined with conditional logistic regression models to estimate the associations between six air pollutants and AECOPD. Stratified analyses were performed by individual characteristics, disease severity, COPD types, and the season of exacerbations.

Results: A total of 5,746 patients were finally included. At a 2-day lag, for each interquartile range increase in PM_{2.5} and PM₁₀ concentrations, odds ratios for AECOPD were 1.054 (95% CI: 1.012, 1.097) and 1.050 (95% CI: 1.009, 1.092), respectively. The associations were more pronounced in participants who were aged < 65 years, had experienced at least one severe AECOPD in the past year, were first diagnosed with COPD between the ages of 20 and 50, and experienced AECOPD in the cool seasons. By contrast, significant associations for NO₂, SO₂, and CO lost significance when excluding cases collected before 2020 or with larger distance from the monitoring station, and no significant association was observed for O₃.

Interpretation: This study provides robust evidence that short-term exposure to PM_{2.5} and PM₁₀ was associated with higher odds of AECOPD onset. Individuals who are young, have severe COPD or young COPD, and experience an exacerbation during the cooler seasons may be particularly susceptible.

Clinical trial registration number: [NCT2657525](https://clinicaltrials.gov/ct2/show/study/NCT02657525) (ClinicalTrials.gov).

Trial registration: ClinicalTrials.gov [NCT02657525](https://clinicaltrials.gov/ct2/show/study/NCT02657525).

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Review

Chest

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. 2024 Jun 19:S0012-3692(24)00778-5.

doi: 10.1016/j.chest.2024.05.035. Online ahead of print.

'Against Medical Advice' Discharges after Respiratory-related Hospitalizations: Strategies for Respectful Care

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Affiliations expand

- PMID: 38906461
- DOI: [10.1016/j.chest.2024.05.035](https://doi.org/10.1016/j.chest.2024.05.035)

Abstract

Against medical advice (AMA) discharges are practically and emotionally challenging for both patients and clinicians. Moreover, they are common after admissions for respiratory

conditions, such as COPD and asthma, and are associated with poor outcomes. Despite the challenges presented by AMA discharges, clinicians rarely receive formal education and have limited guidance on how to approach these discharges. Often, the approach to AMA discharges prioritizes designating the discharge as 'AMA,' while effective coordination of discharge care receives less attention. Such an approach can lead to stigmatization of patients and low quality care. While evidence for best practices in AMA discharges remains lacking, we propose a set of strategies to improve care in AMA discharges by focusing on respect, where clinicians treat patients as equals and honor differing values. We describe five strategies, including 1) preventing an AMA discharge, 2) conducting a patient-centered and truthful discussion of risk, 3) providing harm-reducing discharge care, 4) minimizing stigma and bias, 5) educating trainees. Through a case of a patient discharging AMA after a COPD exacerbation, we highlight how these strategies can be applied to common issues in respiratory-related hospitalizations, such as prescribing inhalers and managing oxygen requirements. We argue that, by utilizing these strategies, clinicians can deliver respectful and higher-quality care to an often-marginalized population of patients with respiratory disease.

Keywords: AMA; Against medical advice; discharge; respect.

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Gene

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. 2024 Jun 19:148711.

doi: 10.1016/j.gene.2024.148711. Online ahead of print.

Integrated bioinformatic analysis and experimental validation for exploring the key immune checkpoint of COPD

[Junyi Ke](#)¹, [Shu Huang](#)², [Zhixiong He](#)³, [Siyu Lei](#)², [Shiya Lin](#)³, [Minchao Duan](#)⁴

Affiliations expand

- PMID: 38906393
- DOI: [10.1016/j.gene.2024.148711](https://doi.org/10.1016/j.gene.2024.148711)

Abstract

Background: There is growing evidence indicating immune inflammation is a key factor in the progression of chronic obstructive pulmonary disease (COPD). Immune checkpoints (ICs) are crucial targets for modulating the functional activation and differentiation of immune cells, particularly in relation to immune inflammation and the regulation of T cell activation and exhaustion. However, the precise mechanisms of ICs in COPD remain understood.

Methods: COPD datasets were obtained from the Gene Expression Omnibus (GEO) and analyzed using GEO2R and Limma to identify differentially expressed genes. LASSO regression was then applied to screen ICs closely associated with COPD. Finally, target genes were selected based on gene expression profiles. Gene ontology (GO), immune infiltration analysis, and gene set enrichment analysis (GSEA) were utilized to assess the relationship between IC genes (ICGs) and immune cells. Subsequently, tobacco-exposed mice, anti-Tim3-treated mice, and HAVCR2-knockout mice were generated, with flow cytometry being used to confirm the results.

Results: Through the analysis of GSE38974 and LASSO regression, five ICGs were identified. Subsequent validation using GSE20257 and GSE76925 confirmed these findings. Gene expression profiling highlighted HAVCR2 as having the strongest correlation with COPD. Further investigation through immune infiltration analysis, GO, and GSEA indicated a link between HAVCR2 and CD8⁺ T cells in COPD. Flow cytometry experiments demonstrated high Tim3 expression in CD8⁺ T cells of mice exposed to tobacco, promoting Tc1 and inhibiting Tc17, thus affecting CD8⁺ Tem activation and CD8⁺ Tcm formation, leading to an immune imbalance within CD8⁺ T cells.

Conclusion: Prolonged exposure to tobacco upregulates Tim3 in CD8⁺ T cells, triggering its regulatory effects on Tc1/Tc17. Knocking out HAVCR2 further upregulated the

expression of CD8+ Tem while suppressing the expression of CD8+ Tcm, indicating that Tim3 plays a role in the activation and differentiation of CD8+ T cells in the context of tobacco exposure.

Keywords: CD8+T cell; Copd; Flow cytometry; HAVCR2; Immune checkpoint; TIM3.

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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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BMJ Open



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doi: 10.1136/bmjopen-2024-085328.

[Chronic obstructive pulmonary disease exacerbation purulence status and its association with pulmonary embolism: protocol for a systematic review with meta-analysis](#)

[Vicky Mai](#)¹, [Laura Girardi](#)^{1,2}, [Kerstin de Wit](#)³, [Lana Castellucci](#)¹, [Shawn Aaron](#)⁴, [Francis Couturaud](#)⁵, [Dean A Fergusson](#)⁶, [Grégoire Le Gal](#)⁷

Affiliations expand

- PMID: 38904133
- DOI: [10.1136/bmjopen-2024-085328](https://doi.org/10.1136/bmjopen-2024-085328)

Abstract

Introduction: Acute exacerbation of chronic obstructive pulmonary disease (AECOPD) increases the risk of pulmonary embolism (PE). AECOPD and PE have similar symptoms which results in a high proportion of patients with AECOPD undergoing imaging to rule out PE. Finding predictors and explanatory factors of PE in AECOPD, such as purulence status, could help reduce the need for imaging. This systematic review with meta-analysis aims to evaluate if there is an association between purulence status in AECOPD and PE diagnosis.

Methods and analysis: MEDLINE, EMBASE and CENTRAL will be searched from database inception to April 2024. Randomised trials, cohort studies and cross-sectional studies on the prevalence of PE in patients with AECOPD will be included if the prevalence of PE based on the AECOPD purulence status is available. There will be no restriction on language. The primary outcome will be PE at the initial assessment and secondary outcomes will be all venous thromboembolism (deep venous thrombosis (DVT) and PE) and DVT, respectively, diagnosed at the initial assessment. Relative risks with their 95% CI will be calculated by using a Mantel-Haenszel random-effect model to compare the association between the risk of PE and the AECOPD purulence status (purulent vs non-purulent/unknown). Subgroup analyses will be performed based on the type of study, systematic search of PE versus no systematic search of PE and localisation of PE. Risk of bias will be evaluated by the ROBINS-E tool, publication bias will be evaluated with the funnel plot. The manuscript will be drafted based on the Preferred Reporting Items for Systematic Reviews and Meta-Analysis statement.

Ethics and dissemination: This study does not require ethics approval. This work will be submitted for presentation at an international conference and for publication in a peer-reviewed journal.

Prospero registration number: CRD42023459429.

Keywords: Epidemiology; Pulmonary Disease, Chronic Obstructive; Respiratory infections; Thromboembolism.

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Conflict of interest statement

Competing interests: VM, LG, KdW, SA, FC and DAF do not have conflicts of interest. LC's research institution has received honoraria from Bayer, BMS-Pfizer Alliance, The Academy for Continued Advancement in Healthcare Education, Amag Pharmaceutical, LEO Pharma, Sanofi, Valeo Pharma and Servier. GLG is a coinvestigator for a clinical trial from Pfizer and one from Bristol-Myers Squibb and GLG received honoraria from Pfizer, Sanofi and Aspen Pharma.

SUPPLEMENTARY INFO

MeSH termsexpand

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Observational Study

BMJ Open Respir Res

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. 2024 Jun 19;11(1):e002316.

doi: 10.1136/bmjresp-2024-002316.

[Sex differences in asthma control, lung function and exacerbations: the ATLANTIS study](#)

[Tessa M Kole](#)^{#1,2}, [Susan Muiser](#)^{#3,2}, [Monica Kraft](#)⁴, [Salman Siddiqui](#)⁵, [Leonardo M Fabbri](#)⁶, [Klaus F Rabe](#)^{7,8}, [Alberto Papi](#)⁶, [Chris Brightling](#)⁹, [Dave Singh](#)¹⁰, [Thys van der Molen](#)^{2,11}, [Martijn C Nawijn](#)^{2,12}, [Huib A M Kerstjens](#)^{3,2}, [Maarten van den Berge](#)^{3,2}

Affiliations expand

- PMID: 38901877
- DOI: [10.1136/bmjresp-2024-002316](https://doi.org/10.1136/bmjresp-2024-002316)

Free article

Abstract

Background: Asthma is a heterogeneous disease with a prevalence and severity that differs between male and female patients.

Question: What are differences between male and female patients with asthma with regard to asthma control, lung function, inflammation and exacerbations?

Methods: We performed a post hoc analysis in the ATLANTIS (Assessment of Small Airways Involvement in Asthma) study, an observational cohort study including patients with asthma from nine countries with a follow-up of 1 year during which patients were characterised with measures of large and small airway function, questionnaires, inflammation and imaging. We compared differences in baseline characteristics and longitudinal outcomes between male and female patients with asthma.

Results: 773 patients were enrolled; 450 (58%) of these were female. At baseline, female patients with asthma were in higher Global Initiative for Asthma (GINA) steps ($p=0.042$), had higher Asthma Control Questionnaire 6 (F: 0.83; M: 0.66, $p<0.001$) and higher airway resistance as reflected by uncorrected impulse oscillometry outcomes (ie, R_5-R_{20} : F: 0.06; M: 0.04 kPa/L/s, $p=0.002$). Male patients with asthma had more severe airway obstruction (forced expiratory volume in 1 s/forced vital capacity % predicted: F: 91.95; M: 88.33%, $p<0.01$) and more frequently had persistent airflow limitation (F: 27%; M: 39%, $p<0.001$). Blood neutrophils were significantly higher in female patients ($p=0.014$). With Cox regression analysis, female sex was an independent predictor for exacerbations.

Interpretation: We demonstrate that female patients are in higher GINA steps, exhibit worse disease control, experience more exacerbations and demonstrate higher airway resistance compared with male patients. The higher exacerbation risk was independent of GINA step and blood eosinophil level. Male patients, in turn, have a higher prevalence of persistent airflow limitation and more severe airflow obstruction. These findings show sex can affect clinical phenotyping and outcomes in asthma.

Trial registration number: [NCT02123667](#).

Keywords: asthma; asthma epidemiology.

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Conflict of interest statement

Competing interests: SM reports a travel grant from GSK outside of the submitted work. MK reports grants paid to her institution by National Institutes of Health, American Lung Association, Synairgen, Janssen, AstraZeneca and Sanofi; personal consulting fees from AstraZeneca, Sanofi, Chiesi, GSK, Kinaset, Genentech; presentation fees from Chiesi; support for attending the European Respiratory Society annual conference; one issued and two filed patents by RaeSedo; participation in data safety and monitoring board at ALung and past membership of the National Heart, Lung and Blood Advisory Council; current membership of Association of Professor of Medicine; equity ownership in RaeSedo and is a section editor for UptoDate. SS reports consulting fees from CSL Behring, AstraZeneca, GSK, Areteia Therapeutics, Novartis; speaker fees for presenting ATLANTIS data by Chiesi; support from ERS for attending ERS science council meetings and membership of the ALTANTIS scientific steering group. LMF reports being a consultant for Chiesi; consulting fees by Chiesi, GSK, AstraZeneca, Novartis, Alfasigma and participation in a board with Novartis and Chiesi. KFR reports presenter fees by AstraZeneca, Boehringer Ingelheim, Chiesi, Novartis, Sanofi, Regeneron, GSK, Berlin Chemie, Roche Pharma; participation in data safety and monitoring boards for AstraZeneca, Boehringer Ingelheim, Sanofi and Regeneron; leadership of German Center for Lung Research (DZL), German Chest Society (DGP) and American Thoracic Society. AP reports grants or contracts paid to institution by Chiesi, AstraZeneca, GSK, Sanofi, Agenzia Italiana del farmaco (AIFA); consulting fees from Chiesi, AstraZeneca, GSK, Novartis, Sanofi, Avillion, Elpen Pharmaceuticals; speaker fees from Chiesi, AstraZeneca, GSK, Menarini, Novartis, Zambon, Mundipharma, Sanofi, Edmond Pharma, Iqvia, Avillion, Elpen Pharmaceuticals, membership of advisory board for Chiesi, AstraZeneca, GSK, MSD, Novartis, Sanofi, Iqvia, Avillion, Elpen Pharmaceuticals. CEB reports grants paid to institution by GSK, AstraZeneca, Sanofi, Regeneron, Roche, Genentech, Boehringer Ingelheim, Chiesi, Novartis, Mologic, Areteia and consulting fees paid to institution by GSK, AstraZeneca, Sanofi, Regeneron, Roche, Genentech, Boehringer Ingelheim, Chiesi, Novartis, Mologic, Areteia. DS reports consulting fees from Aerogen, AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, CSL Behring, EpiEndo, Genentech, GSK, Glenmark, Gossamer Bio, Kinaset Therapeutics, Menarini, Novartis, Orion, Pulmatrix, Sanofi, Synairgen, Teva, Theravance Biopharma, Verona Pharma. TvdM reports presenter fees paid to institution by Chiesi and GSK. MCN reports unrestricted research grants paid to institution: European Union's H2020 Research and Innovation Programme under grant agreement, the Ministry of Economic Affairs and Climate Policy (the Netherlands) through a PPP allowance from the Top Sector Life Sciences & Health, GSK, Stevenage (UK), Netherlands Lung Foundation, the Chan Zuckerberg Initiative, The Stichting

Astmabestrijding; support of travel costs by the Belgian Respiratory Society and unpaid leadership of the Lung Bionetwork of the Human Cell Atlas consortium. HAMK reports that his institution has received fees per patient for recruitment in trials from GSK, Novartis and FLUIDDA, grants for investigator-initiated studies from GSK, Novartis and Boehringer. Additionally, his institution has received consultancy fees from Novartis, AstraZeneca, Boehringer Ingelheim, Chiesi and GSK. MvdB reports grants paid to the University from GSK, Chiesi, Teva, AstraZeneca, Genentech, outside the submitted work.

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Publication types, MeSH terms, Associated dataexpand

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Observational Study

Respir Res

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. 2024 Jun 19;25(1):249.

doi: 10.1186/s12931-024-02875-2.

[Delineating excess comorbidities in idiopathic pulmonary fibrosis: an observational study](#)

[Burcu Ozaltin](#) ^{#1}, [Robert Chapman](#) ^{#2}, [Muhammad Qummer Ul Arfeen](#) ³, [Natalie Fitzpatrick](#) ³, [Harry Hemingway](#) ³, [Kenan Direk](#) ^{#4}, [Joseph Jacob](#) ^{#5 6}

Affiliations expand

- PMID: 38898447
- PMCID: [PMC11186192](#)
- DOI: [10.1186/s12931-024-02875-2](#)

Abstract

Background: Our study examined whether prevalent and incident comorbidities are increased in idiopathic pulmonary fibrosis (IPF) patients when compared to matched chronic obstructive pulmonary disease (COPD) patients and control subjects without IPF or COPD.

Methods: IPF and age, gender and smoking matched COPD patients, diagnosed between 01/01/1997 and 01/01/2019 were identified from the Clinical Practice Research Datalink GOLD database multiple registrations cohort at the first date an ICD-10 or read code mentioned IPF/COPD. A control cohort comprised age, gender and pack-year smoking matched subjects without IPF or COPD. Prevalent (prior to IPF/COPD diagnosis) and incident (after IPF/COPD diagnosis) comorbidities were examined. Group differences were estimated using a t-test. Mortality relationships were examined using multivariable Cox proportional hazards adjusted for patient age, gender and smoking status.

Results: Across 3055 IPF patients, 38% had 3 or more prevalent comorbidities versus 32% of COPD patients and 21% of matched control subjects. Survival time reduced as the number of comorbidities in an individual increased ($p < 0.0001$). In IPF, prevalent heart failure (Hazard ratio [HR] = 1.62, 95% Confidence Interval [CI]: 1.43-1.84, $p < 0.001$), chronic kidney disease (HR = 1.27, 95%CI: 1.10-1.47, $p = 0.001$), cerebrovascular disease (HR = 1.18, 95%CI: 1.02-1.35, $p = 0.02$), abdominal and peripheral vascular disease (HR = 1.29, 95%CI: 1.09-1.50, $p = 0.003$) independently associated with reduced survival. Key comorbidities showed increased incidence in IPF (versus COPD) 7-10 years prior to IPF diagnosis.

Interpretation: The mortality impact of excessive prevalent comorbidities in IPF versus COPD and smoking matched controls suggests that multiorgan mechanisms of injury need elucidation in patients that develop IPF.

Keywords: Chronic obstructive pulmonary disease; Comorbidities; Idiopathic pulmonary fibrosis.

Conflict of interest statement

The authors declare no competing interests.

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

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Publication types, MeSH terms, Grants and funding [expand](#)

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Review

Chest

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. 2024 Jun 18:S0012-3692(24)00707-4.

doi: 10.1016/j.chest.2024.05.027. Online ahead of print.

[Translating the Interplay of Cognition and Physical Performance in Chronic Obstructive Pulmonary Disease and Interstitial Lung Disease: Meeting Report and Literature Review](#)

[Dmitry Rozenberg](#)¹, [W Darlene Reid](#)², [Pat Camp](#)³, [Jennifer L Campos](#)⁴, [Gail Dechman](#)⁵, [Paul W Davenport](#)⁶, [Helga Egan](#)⁷, [Jolene H Fisher](#)⁸, [Jordan A Guenette](#)⁹, [David Gold](#)¹⁰, [Roger S Goldstein](#)¹¹, [Donna Goodridge](#)¹², [Tania Janaudis-Ferreira](#)¹³, [Alan G Kaplan](#)¹⁴, [Daniel Langer](#)¹⁵, [Darcy D Marciniuk](#)¹⁶, [Barbara Moore](#)⁷, [Ani Orchanian-Cheff](#)¹⁷, [Jessica Otoo-Appiah](#)¹⁸, [Veronique Pepin](#)¹⁹, [Peter Rassam](#)²⁰, [Shlomit Rotenberg](#)²¹, [Chris Ryerson](#)²², [Martijn A Spruit](#)²³, [Matthew B Stanbrook](#)⁸, [Michael K Stickland](#)²⁴, [Jeannie Tom](#)⁷, [Kirsten Wentlandt](#)²⁵

Affiliations expand

- PMID: 38901488
- DOI: [10.1016/j.chest.2024.05.027](https://doi.org/10.1016/j.chest.2024.05.027)

Abstract

Topic importance: Cognitive and physical limitations are common in individuals with chronic lung diseases, but their interactions with physical function and activities of daily living are not well characterized. Understanding these interactions and potential contributors may provide insights on disability and enable more tailored rehabilitation strategies.

Review findings: This review summarizes a 2-day meeting of patient partners, clinicians, researchers, and lung associations to discuss the interplay between cognitive and physical function in people with chronic lung diseases. This report covers four areas: 1) cognitive-physical limitations in patients with chronic lung diseases, 2) cognitive assessments, 3) strategies to optimize cognition and motor control and 4) future research directions. Cognitive and physical impairments have multiple effects on quality of life and daily function. Meeting participants acknowledged the need for a standardized cognitive assessment to complement physical assessments in patients with chronic lung diseases. Dyspnea, fatigue, and age were recognized as important contributors to cognition that can affect motor control and daily physical function. Pulmonary rehabilitation was highlighted as a multidisciplinary strategy that may improve respiratory and limb motor control through neuroplasticity, and has the potential to improve physical function and quality of life.

Summary: There was consensus that cognitive function and the cognitive interference of dyspnea in people with chronic lung diseases contribute to motor control impairments that can negatively impact daily function, which may be improved with pulmonary rehabilitation. The meeting generated several key research questions related to cognitive-physical interactions in individuals with chronic lung diseases.

Keywords: Cognition; Exercise; Interstitial; Lung Disease; Obstructive; Rehabilitation.

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BMJ Open Respir Res

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. 2024 Jun 18;11(1):e002391.

doi: [10.1136/bmjresp-2024-002391](https://doi.org/10.1136/bmjresp-2024-002391).

[National trend in the prevalence and mortality of COPD in South Korea from 2008 to 2017](#)

[Sun-Hyung Kim](#) ^{#1,2}, [Jong Eun Park](#) ^{#3}, [Bumhee Yang](#) ^{1,2}, [So Young Kim](#) ^{3,4}, [Yeon Yong Kim](#) ^{5,6}, [Jong Hyock Park](#) ^{7,4,8}

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- PMID: [38897613](https://pubmed.ncbi.nlm.nih.gov/38897613/)
- DOI: [10.1136/bmjresp-2024-002391](https://doi.org/10.1136/bmjresp-2024-002391)

Free article

Abstract

Background: Existing studies on chronic obstructive pulmonary disease (COPD) in Korea lack full population coverage, relying on small sample sizes. Therefore, this study aims to investigate the prevalence and mortality of COPD in the entire Korean population.

Methods: This serial cross-sectional study used national databases, linking the National Health Information Database (2008–2017) with Causes of Death Statistics. Identification of individuals with COPD used diagnostic codes (International Classification of Diseases-10: J41–J44) or a history of COPD-related hospitalisation, focusing on adults aged 40 and above. Prevalence and mortality rates, calculated for 2008–2017, encompassed both crude and age-standardised and sex-standardised measures. A multivariate Poisson regression model estimated the association between COPD and all-cause and cause-specific mortality, presenting incidence rate ratios (IRRs) and 95% CIs, using data from the year 2017.

Results: Age-adjusted COPD prevalence exhibited a notable increase from 2008 (7.9%) to 2017 (16.7%) in both sexes. The prevalences of diabetes mellitus, hypertension, dyslipidaemia, ischaemic heart disease, cancer, osteoporosis and tuberculosis were higher in the COPD group than in the group without COPD (p for all <0.001). The incidence of stroke and myocardial infarction (p for all <0.001) and overall mortality were higher in the COPD group (adjusted IRR 1.23, 95% CI 1.22 to 1.24, $p<0.001$). In particular, incidence rate and risk of mortality due to lung cancer were higher than that of those without COPD compared with other cancer types (adjusted IRR 2.51, 95% CI 2.42 to 2.60, $p<0.001$). It was significantly higher the incidence rate and risk of mortality among group with COPD than those without COPD in lower respiratory disease (adjusted IRR 16.62, 95% CI 15.07 to 18.33, $p<0.001$), asthma (adjusted IRR 6.41, 95% CI 5.47 to 7.51, $p<0.001$) and bronchiectasis (adjusted IRR 11.77, 95% CI 7.59 to 18.26, $p<0.001$), respectively.

Discussion: Our study showed that the prevalence of COPD is gradually increasing from 9.2% in 2009 to 16.7% in 2018. Furthermore, in overall (all-cause) mortality, it was significantly higher in group with COPD than in group without COPD. The mortality rate of group with COPD was much higher than the overall mortality rate but is gradually decreasing.

Keywords: COPD epidemiology; Chronic Obstructive; Pulmonary Disease.

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Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

MeSH termsexpand

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Editorial

Thorax

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. 2024 Jun 18:thorax-2024-221754.

doi: 10.1136/thorax-2024-221754. Online ahead of print.

[Integrated disease management: good news but more work to do](#)

[Christine R Jenkins](#)¹

Affiliations expand

- PMID: 38889972
- DOI: [10.1136/thorax-2024-221754](https://doi.org/10.1136/thorax-2024-221754)

No abstract available

Keywords: COPD Exacerbations; COPD epidemiology; Pulmonary Rehabilitation.

Conflict of interest statement

Competing interests: CRJ received payments for lectures, advisory board membership, consultations, educational content and travel to meetings when a speaker from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Novartis and Sanofi.

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Ann Intensive Care

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. 2024 Jun 18;14(1):91.

doi: 10.1186/s13613-024-01311-4.

[Early and late effects of volatile sedation with sevoflurane on respiratory mechanics of critically ill COPD patients](#)

[Boris Jung](#)^{1,2,3,4}, [Maxime Fosset](#)^{5,6}, [Matthieu Amalric](#)⁵, [Elias Baedorf-Kassis](#)^{7,8}, [Brian O'Gara](#)⁷, [Todd Sarge](#)⁷, [Valerie Moulaire](#)⁵, [Vincent Brunot](#)⁵, [Arnaud Bourdin](#)^{9,10}, [Nicolas Molinari](#)⁶, [Stefan Matecki](#)⁹

Affiliations [expand](#)

- PMID: 38888818

- PMCID: [PMC11189368](#)

- DOI: [10.1186/s13613-024-01311-4](https://doi.org/10.1186/s13613-024-01311-4)

Abstract

Background: The objective was to compare sevoflurane, a volatile sedation agent with potential bronchodilatory properties, with propofol on respiratory mechanics in critically ill patients with COPD exacerbation.

Methods: Prospective study in an ICU enrolling critically ill intubated patients with severe COPD exacerbation and comparing propofol and sevoflurane after 1:1 randomisation. Respiratory system mechanics (airway resistance, PEEP_i, trapped volume, ventilatory ratio and respiratory system compliance), gas exchange, vitals, safety and outcome were measured at inclusion and then until H48. Total airway resistance change from baseline to H48 in both sevoflurane and propofol groups was the main endpoint.

Results: Sixteen patients were enrolled and were sedated for 126 h(61-228) in the propofol group and 207 h(171-216) in the sevoflurane group. At baseline, airway resistance was 21.6cmH₂O/l/s(19.8-21.6) in the propofol group and 20.4cmH₂O/l/s(18.6-26.4) in the sevoflurane group, (p = 0.73); trapped volume was 260 ml(176-290) in the propofol group and 73 ml(35-126) in the sevoflurane group, p = 0.02. Intrinsic PEEP was 1.5cmH₂O(1-3) in both groups after external PEEP optimization. There was neither early (H4) or late (H48) significant difference in airway resistance and respiratory mechanics parameters between the two groups.

Conclusions: In critically ill patients intubated with COPD exacerbation, there was no significant difference in respiratory mechanics between sevoflurane and propofol from inclusion to H4 and H48.

Keywords: COPD; Mechanical ventilation; Respiratory mechanics; Sevoflurane; Volatile sedation.

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Conflict of interest statement

Elias Baedorf-Kassis received speaking fees from Hamilton Medical outside the scope of the present manuscript. Brian O’Gara received honorarium from Sedana Medical. Boris Jung received travel reimbursement and speaking fees from Sedana Medical.

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

SUPPLEMENTARY INFO

Grants and funding expand

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Review

Expert Rev Respir Med

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. 2024 Jun 18.

doi: 10.1080/17476348.2024.2369716. Online ahead of print.

[The impact of smoking on bronchiectasis and its comorbidities](#)

[David de la Rosa-Carrillo](#)¹, [José Ignacio de Granda-Orive](#)^{2,3}, [Layla Diab Cáceres](#)², [Fernando Gutiérrez Pereyra](#)¹, [Beatriz Raboso Moreno](#)⁴, [Miguel-Ángel Martínez-García](#)⁵, [Guillermo Suárez-Cuartin](#)⁶

Affiliations expand

- PMID: 38888096
- DOI: [10.1080/17476348.2024.2369716](https://doi.org/10.1080/17476348.2024.2369716)

Abstract

Introduction: Bronchiectasis, characterized by irreversible bronchial dilatation, is a growing global health concern with significant morbidity. This review delves into the intricate relationship between smoking and bronchiectasis, examining its epidemiology,

pathophysiology, clinical manifestations, and therapeutic approaches. Our comprehensive literature search on PubMed utilized MESH terms including 'smoking,' 'smoking cessation,' 'bronchiectasis,' and 'comorbidities' to gather relevant studies.

Areas covered: This review emphasizes the role of smoking in bronchiectasis development and exacerbation by compromising airways and immune function. Interconnected comorbidities, including chronic obstructive pulmonary disease, asthma, and gastroesophageal reflux disease, create a detrimental cycle affecting patient outcomes. Despite limited studies on smoking cessation in bronchiectasis, the review stresses its importance. Advocating for tailored cessation programs, interventions like drainage, bronchodilators, and targeted antibiotics are crucial to disrupting the inflammatory-infection-widening cycle.

Expert opinion: The importance of smoking cessation in bronchiectasis management is paramount due to its extensive negative impact on related conditions. Proactive cessation programs utilizing technology and targeted education for high-risk groups aim to reduce smoking's impact on disease progression and related comorbidities. In conclusion, a personalized approach centered on smoking cessation is deemed vital for bronchiectasis, aiming to improve outcomes and enhance patients' quality of life in the face of this complex respiratory condition.

Keywords: Bronchiectasis; COPD; bronchial inflammation; comorbidities; smoking; smoking cessation.

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[Review](#)

ERJ Open Res

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. 2024 Jun 17;10(3):00850-2023.

doi: 10.1183/23120541.00850-2023. eCollection 2024 May.

Mortality prevention as the centre of COPD management

[Andriana I Papaioannou](#)¹, [Georgios Hillas](#)², [Stelios Loukides](#)³, [Theodoros Vassilakopoulos](#)⁴

Affiliations expand

- PMID: 38887682
- PMCID: [PMC11181087](#)
- DOI: [10.1183/23120541.00850-2023](#)

Abstract

COPD is a major healthcare problem and cause of mortality worldwide. COPD patients at increased mortality risk are those who are more symptomatic, have lower lung function and lower diffusing capacity of the lung for carbon monoxide, decreased exercise capacity, belong to the emphysematous phenotype and those who have concomitant bronchiectasis. Mortality risk seems to be greater in patients who experience COPD exacerbations and in those who suffer from concomitant cardiovascular and/or metabolic diseases. To predict the risk of death in COPD patients, several composite scores have been created using different parameters. In previous years, large studies (also called mega-trials) have evaluated the efficacy of different therapies on COPD mortality, but until recently only nonpharmaceutical interventions have proven to be effective. However, recent studies on fixed combinations of triple therapy (long-acting β -agonists, long-acting muscarinic antagonists and inhaled corticosteroids) have provided encouraging results, showing for the first time a reduction in mortality compared to dual therapies. The aim of the present review is to summarise available data regarding mortality risk in COPD patients and to describe pharmacological therapies that have shown effectiveness in reducing mortality.

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Conflict of interest statement

Conflict of interest: A.I. Papaioannou has received honoraria from AstraZeneca, GlaxoSmithKlein, Novartis, Boehringer Ingelheim, Chiesi and ELPEN. Conflict of interest: G. Hillas has received honoraria from AstraZeneca, Boehringer Ingelheim, Chiesi, CSL Behring, ELPEN, Innovis, GSK, Menarini, Novartis, Pharmathen, Sanofi and UCB. Conflict of interest: S. Loukides has received honoraria for presentations and consultancy fees from AstraZeneca, Boehringer Ingelheim, Chiesi, ELPEN, GSK, Menarini, Novartis, Sanofi and Specialty Therapeutics. Conflict of interest: T. Vassilakopoulos has received honoraria from AstraZeneca, Boehringer Ingelheim, Chiesi, ELPEN, Innovis, GSK, Menarini, Novartis and Pharmathen.

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

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BMC Pulm Med



. 2024 Jun 17;24(1):282.

doi: 10.1186/s12890-024-03100-y.

[Clinical significance of chronic bronchitis in different racial groups](#)

[Joon Young Choi](#)¹, [Kwang Ha Yoo](#)², [Ki-Suck Jung](#)³, [Victor Kim](#)⁴, [Chin Kook Rhee](#)⁵

Affiliations [expand](#)

- PMID: 38886685
- PMCID: [PMC11184853](#)
- DOI: [10.1186/s12890-024-03100-y](#)

Abstract

Backgrounds: Limited data are available on racial differences in the clinical features of chronic bronchitis (CB) patients with chronic obstructive pulmonary disease (COPD). In this study, we aimed to compare clinical features among CB patients of different races. We also analyzed the clinical significance of CB, defined classically and based on the COPD Assessment Test (CAT), to validate the CAT-based definition.

Methods: We analyzed patient data extracted from the Korean COPD Subgroup Study (KOCOSS) cohort (2012-2021) and US Genetic Epidemiology of COPD (COPDGene) study (2008-2011). We compared clinical characteristics among CB and non-CB patients of three different races using two CB definitions.

Results: In this study, 3,462 patients were non-Hispanic white (NHW), 1,018 were African American (AA), and 1,793 were Asian. The proportions of NHW, AA, and Asian patients with CB according to the classic definition were 27.4%, 20.9%, and 10.7%, compared with 25.2%, 30.9%, and 23.0% according to the CAT-based definition, respectively. The risk of CB prevalence was highest in NHW and lowest in Asian COPD patients. Among all races, CB patients were more likely to be current smokers, have worse respiratory symptoms and poorer health-related quality of life (HrQoL), and to have decreased lung function and exercise capacity. Most of these characteristics showed similar associations with the outcomes between the two definitions of CB. A binominal regression model revealed that CB patients of all races had an increased risk of future exacerbations according to both CB definitions, except for Asian patients with classically defined CB.

Conclusions: The presence of CB was associated with worse respiratory symptoms, HrQoL, exercise capacity and lung function, and more exacerbations, regardless of race or CB definition. The CAT-based definition may be more useful for assessing the risk of future exacerbations in Asian COPD patients.

Keywords: COPDGene; Chronic bronchitis; Chronic obstructive pulmonary disease; KOCOSS; Racial difference.

Conflict of interest statement

CK Rhee received consulting/lecture fees from MSD, AstraZeneca, GSK, Novartis, Takeda, Mundipharma, Boehringer-Ingelheim, Teva, Sanofi, and Bayer. In the last 3 years, VK has received consultancy fees from Galvanize Therapeutics and AstraZeneca, less than \$5,000 USD total. None of these consultancies are a conflict of interest in relation to this manuscript.

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

SUPPLEMENTARY INFO

MeSH terms, Grants and funding [expand](#)

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RMD Open

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. 2024 Jun 17;10(2):e004281.

doi: 10.1136/rmdopen-2024-004281.

[Rheumatoid arthritis and changes on spirometry by smoking status in two prospective longitudinal cohorts](#)

[Keigo Hayashi](#)¹, [Gregory C McDermott](#)^{1,2}, [Pierre-Antoine Juge](#)¹, [Matthew Moll](#)^{2,3,4,5}, [Michael H Cho](#)^{2,3,4}, [Xiaosong Wang](#)¹, [Misti L Paudel](#)^{1,2}, [Tracy J Doyle](#)^{2,3}, [Gregory L Kinney](#)⁶, [Danielle Sansone-Poe](#)⁶, [Kendra Young](#)⁶, [Paul F Dellaripa](#)^{1,2}, [Zachary S Wallace](#)^{2,7}, [Elizabeth A Regan](#)⁸, [Gary M](#)

[Hunninghake](#)^{2,3}, [Edwin K Silverman](#)^{2,3,4}, [Samuel Y Ash](#)⁹, [Raul San Jose Estepar](#)^{2,3,10}, [George R Washko](#)^{2,3}, [Jeffrey A Sparks](#)^{11,2}

Affiliations expand

- PMID: 38886003
- PMCID: [PMC11184187](#)
- DOI: [10.1136/rmdopen-2024-004281](#)

Abstract

Objective: To compare longitudinal changes in spirometric measures between patients with rheumatoid arthritis (RA) and non-RA comparators.

Methods: We analysed longitudinal data from two prospective cohorts: the UK Biobank and COPDGene. Spirometry was conducted at baseline and a second visit after 5-7 years. RA was identified based on self-report and disease-modifying antirheumatic drug use; non-RA comparators reported neither. The primary outcomes were annual changes in the per cent-predicted forced expiratory volume in 1 s (FEV₁%) and per cent predicted forced vital capacity (FVC%). Statistical comparisons were performed using multivariable linear regression. The analysis was stratified based on baseline smoking status and the presence of obstructive pattern (FEV₁/FVC <0.7).

Results: Among participants who underwent baseline and follow-up spirometry, we identified 233 patients with RA and 37 735 non-RA comparators. Among never-smoking participants without an obstructive pattern, RA was significantly associated with more FEV₁% decline ($\beta=-0.49$, $p=0.04$). However, in ever smokers with ≥ 10 pack-years, those with RA exhibited significantly less FEV₁% decline than non-RA comparators ($\beta=0.50$, $p=0.02$). This difference was more pronounced among those with an obstructive pattern at baseline ($\beta=1.12$, $p=0.01$). Results were similar for FEV₁/FVC decline. No difference was observed in the annual FVC% change in RA versus non-RA.

Conclusions: Smokers with RA, especially those with baseline obstructive spirometric patterns, experienced lower FEV₁% and FEV₁/FVC decline than non-RA comparators. Conversely, never smokers with RA had more FEV₁% decline than non-RA comparators. Future studies should investigate potential treatments and the pathogenesis of obstructive lung diseases in smokers with RA.

Keywords: Pulmonary Fibrosis; Rheumatoid Arthritis; Risk Factors; Smoking.

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Conflict of interest statement

Competing interests: PAJ reports grant funding and other support from Novartis, Galapagos and Boehringer Ingelheim, unrelated to this work. MM reports institutional grant support from Bayer and Honoraria from Chickasaw Nation. MHC has received grant funding from Bayer, unrelated to this work. TJD received support from Bayer and has been part of a clinical trial funded by Genentech, unrelated to this study. PFD reports grant funding from Bristol Myers Squibb. ZW has received grant funding from Bristol-Myers Squibb and Principia/Sanofi and consulting fees from Viela Bio, Zenas BioPharma, Horizon Therapeutics, Sanofi, MedPace, BioCryst, Amgen, Nkarta, Inc, Adicet Bio, and Therapeutic's and participation in data safety monitoring board or advisory board for Sanofi, Horizon, Novartis, Visterra/Otsuka and Shionogi, unrelated to this work. GMH reports consulting fees from Boehringer-Ingelheim, and the Gerson Lehrman Group, unrelated to this work. EKS has received grant support from Bayer and Northpond Laboratories, unrelated to this work. SYA reports consulting fees from Verona Pharmaceuticals and Vertex Pharmaceuticals and is cofounder and co-owner of Quantitative Imaging Solutions. RSJE reports contracts from Lung Biotechnology and Insmmed, received a grant support from Boehringer Ingelheim and is cofounder and an equity holder of Quantitative Imaging Solutions. GRW reports grants from Boehringer Ingelheim, consultancy for Pulmonx, Janssen Pharmaceuticals, Novartis, and Vertex, and is founder and co-owner of Quantitative Imaging Solutions. JS has received research support from Bristol Myers Squibb and performed consultancy for AbbVie, Amgen, Boehringer Ingelheim, Bristol Myers Squibb, Gilead, Inova Diagnostics, Janssen, Optum, Pfizer, ReCor, Sobi, and UCB, unrelated to this work. Other authors report no competing interests.

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

SUPPLEMENTARY INFO

MeSH terms, Grants and funding [expand](#)

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. 2024 Jun 16;14(1):13881.

doi: 10.1038/s41598-024-64670-9.

Outcomes among patients with chronic obstructive pulmonary disease after recovery from COVID-19 infection of different severity

[Wang Chun Kwok](#)¹, [Chi Hung Chau](#)², [Terence Chi Chun Tam](#)¹, [Fai Man Lam](#)², [James Chung Man Ho](#)³

Affiliations expand

- PMID: 38880813
- PMCID: [PMC11180653](#)
- DOI: [10.1038/s41598-024-64670-9](#)

Abstract

While studies have suggested increased risks of severe COVID-19 infection in chronic obstructive pulmonary disease (COPD), the persistent and delayed consequences of COVID-19 infection on patients with COPD upon recovery remain unknown. A prospective clinical study was conducted in Hong Kong to investigate the persistent and delayed outcomes of patients with COPD who had COVID-19 infection of different severity (mild-moderate COVID-19 and severe COVID-19), compared with those who did not. Chinese patients with COPD \geq 40 years old were recruited from March to September 2021. They were prospectively followed up for 24.9 ± 5.0 months until 31st August 2023. The primary outcome was the deterioration in COPD control defined as the change in mMRC dyspnea scale. The secondary outcomes included the change in exacerbation frequency and non-COVID-19 respiratory mortality (including death from COPD exacerbation or bacterial

pneumonia). 328 patients were included in the analysis. Patients with mild-moderate and severe COVID-19 infection had statistically significant increased risks of worsening of mMRC dyspnoea scale by increase in 1 score from baseline to follow-up with adjusted odds ratios of 4.44 (95% CI = 1.95-10.15, $p < 0.001$) and 6.77 (95% CI = 2.08-22.00, $p = 0.001$) respectively. Patients with severe COVID-19 infection had significantly increased risks of increase in severe COPD exacerbation frequency with adjusted odds ratios of 4.73 (95% CI = 1.55-14.41, $p = 0.006$) non-COVID-19 respiratory mortality from COPD exacerbation or pneumonia with adjusted hazard ratio of 11.25 (95% CI = 2.98-42.45, $p < 0.001$). After recovery from COVID-19, worsening of COPD control from worsening of dyspnea, increase in severe exacerbation frequency to non-COVID-19 respiratory mortality (COPD exacerbation and pneumonia) was observed among patients with severe COVID-19. Mild to moderate COVID-19 was also associated with symptomatic deterioration.

Keywords: COPD; COPD control; COPD exacerbation; COVID-19.

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Conflict of interest statement

The authors declare no competing interests.

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

SUPPLEMENTARY INFO

MeSH termsexpand

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natureportfolio 

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

1
BMC Prim Care

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. 2024 Jun 21;25(1):223.

doi: 10.1186/s12875-024-02447-9.

Healthcare providers' perception of caring for older patients with depression and physical multimorbidity: insights from a focus group study

[Laura Tops](#)¹, [Mei Lin Cromboom](#)¹, [Anouk Tans](#)¹, [Mieke Deschodt](#)^{1,2}, [Mathieu Vandebulcke](#)^{3,4}, [Mieke Vermandere](#)^{5,6}

Affiliations expand

- PMID: 38907355
- DOI: [10.1186/s12875-024-02447-9](https://doi.org/10.1186/s12875-024-02447-9)

Abstract

Background: The caretaking process for older adults with depression and physical multimorbidity is complex. Older patients with both psychiatric and physical illnesses require an integrated and comprehensive approach to effectively manage their care. This approach should address common risk factors, acknowledge the bidirectional relationship between somatic and mental health conditions, and integrate treatment strategies for both aspects. Furthermore, active engagement of healthcare providers in shaping new care processes is imperative for achieving sustainable change.

Objective: To explore and understand the needs and expectations of healthcare providers (HCPs) concerning the care for older patients with depression and physical multimorbidity.

Methods: Seventeen HCPs who work with the target group in primary and residential care participated in three focus group interviews. A constructivist Grounded Theory approach was applied. The results were analyzed using the QUAGOL guide.

Results: Participants highlighted the importance of patient-centeredness, interprofessional collaboration, and shared decision-making in current healthcare practices. There is also a need to further emphasize the advantages and risks of technology in delivering care. Additionally, HCPs working with this target population should possess expertise in both psychiatric and somatic care to provide comprehensive care. Care should be organized proactively, anticipating needs rather than reacting to them. Healthcare providers, including a dedicated care manager, might consider collaborating, integrating their

expertise instead of operating in isolation. Lastly, effective communication among HCPs, patients, and their families is crucial to ensure high-quality care delivery.

Conclusion: The findings stress the importance of a comprehensive approach to caring for older adults dealing with depression and physical comorbidity. These insights will fuel the development of an integrated care model that caters to the needs of this population.

Keywords: Collaborative care; Depressive disorder; Multidisciplinary teams; Multimorbidity; Older adults.

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- [54 references](#)

SUPPLEMENTARY INFO

MeSH terms, Grants and funding expand

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Observational Study

BMJ Open

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. 2024 Jun 19;14(6):e079169.

doi: 10.1136/bmjopen-2023-079169.

[10-year multimorbidity patterns among people with and without](#)

rheumatic and musculoskeletal diseases: an observational cohort study using linked electronic health records from Wales, UK

[Farideh Jalali-Najafabadi](#)¹, [Rowena Bailey](#)², [Jane Lyons](#)², [Ashley Akbari](#)², [Thamer Ba Dhafari](#)³, [Narges Azadbakht](#)³, [James Rafferty](#)², [Alan Watkins](#)², [Glen Philip Martin](#)³, [John Bowes](#)^{4,5}, [Ronan A Lyons](#)², [Anne Barton](#)^{4,5}, [Niels Peek](#)^{3,6}

Affiliations expand

- PMID: 38904124
- DOI: [10.1136/bmjopen-2023-079169](https://doi.org/10.1136/bmjopen-2023-079169)

Abstract

Objectives: To compare the patterns of multimorbidity between people with and without rheumatic and musculoskeletal diseases (RMDs) and to describe how these patterns change by age and sex over time, between 2010 and 2019.

Participants: 103 426 people with RMDs and 2.9 million comparators registered in 395 Wales general practices (GPs). Each patient with an RMD aged 0-100 years between January 2010 and December 2019 registered in Clinical Practice Research Welsh practices was matched with up to five comparators without an RMD, based on age, gender and GP code.

Primary outcome measures: The prevalence of 29 Elixhauser-defined comorbidities in people with RMDs and comparators categorised by age, gender and GP practices. Conditional logistic regression models were fitted to calculate differences (OR, 95% CI) in associations with comorbidities between cohorts.

Results: The most prevalent comorbidities were cardiovascular risk factors, hypertension and diabetes. Having an RMD diagnosis was associated with a significantly higher odds for many conditions including deficiency anaemia (OR 1.39, 95% CI (1.32 to 1.46)), hypothyroidism (OR 1.34, 95% CI (1.19 to 1.50)), pulmonary circulation disorders (OR 1.39, 95% CI 1.12 to 1.73) diabetes (OR 1.17, 95% CI (1.11 to 1.23)) and fluid and electrolyte disorders (OR 1.27, 95% CI (1.17 to 1.38)). RMDs have a higher proportion of multimorbidity (two or more conditions in addition to the RMD) compared with non-RMD

group (81% and 73%, respectively in 2019) and the mean number of comorbidities was higher in women from the age of 25 and 50 in men than in non-RMDs group.

Conclusion: People with RMDs are approximately 1.5 times as likely to have multimorbidity as the general population and provide a high-risk group for targeted intervention studies. The individuals with RMDs experience a greater load of coexisting health conditions, which tend to manifest at earlier ages. This phenomenon is particularly pronounced among women. Additionally, there is an under-reporting of comorbidities in individuals with RMDs.

Keywords: Electronic Health Records; Epidemiology; RHEUMATOLOGY.

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Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

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J Clin Epidemiol

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. 2024 Jun 18:111435.

doi: 10.1016/j.jclinepi.2024.111435. Online ahead of print.

[A Call for Caution When Using Network Methods to Study Multimorbidity: An](#)

Illustration Using Data from the Canadian Longitudinal Study on Aging (CLSA)

[Lauren E Griffith](#)¹, [Alberto Brini](#)², [Graciela Muniz-Terrera](#)³, [Philip D St John](#)⁴, [Lucy E Stirland](#)⁵, [Alexandra Mayhew](#)⁶, [Diego Oyarzún](#)⁷, [Edwin van den Heuvel](#)²

Affiliations expand

- PMID: 38901709
- DOI: [10.1016/j.jclinepi.2024.111435](https://doi.org/10.1016/j.jclinepi.2024.111435)

Abstract

Objective: To examine the impact of two key choices when conducting a network analysis (clustering methods and measure of association) on the number and type of multimorbidity clusters.

Study design and setting: Using cross-sectional self-reported data on 24 diseases from 30,097 community-living adults aged 45-85 from the Canadian Longitudinal Study on Aging, we conducted network analyses using 5 clustering methods and 11 association measures commonly used in multimorbidity studies. We compared the similarity among clusters using the adjusted Rand index (ARI); an ARI of 0 is equivalent to the diseases being randomly assigned to clusters and 1 indicates perfect agreement. We compared the network analysis results to disease clusters independently identified by two clinicians.

Results: Results differed greatly across combinations of association measures and cluster algorithms. The number of clusters identified ranged from 1 to 24, with low similarity of conditions within clusters. Compared to clinician-derived clusters, ARIs ranged from -0.02 to 0.24 indicating little similarity.

Conclusion: These analyses demonstrate the need for a systematic evaluation of the performance of network analysis methods on binary clustered data like diseases. Moreover, in individual older adults, diseases may not cluster predictably, highlighting the need for a personalized approach to their care.

Keywords: CLSA; chronic conditions; disease clusters; multimorbidity; network analysis.

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Geriatr Gerontol Int

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. 2024 Jun 18.

doi: 10.1111/ggi.14926. Online ahead of print.

[Impact of diabetes on mortality and hospitalization after dementia diagnosis: Health insurance claims data analysis](#)

[Masaaki Matsunaga](#)¹, [Shinichi Tanihara](#)², [Yupeng He](#)¹, [Hiroshi Yatsuya](#)³, [Atsuhiko Ota](#)¹

Affiliations expand

- PMID: 38888151
- DOI: [10.1111/ggi.14926](https://doi.org/10.1111/ggi.14926)

Abstract

Aim: Japan faces a public health challenge of dementia, further complicated by the increasing complications from diabetes within its rapidly aging population. This study assesses the impact of diabetes on mortality and hospitalization among individuals aged ≥ 75 years with new dementia diagnoses.

Methods: We analyzed administrative claims data in Japan from 73 324 individuals aged ≥ 75 years with dementia, of whom 17% had comorbid diabetes. Dementia and diabetes were identified from the International Classification of Diseases, Tenth Revision codes. We used Kaplan-Meier survival analysis, Cox proportional hazards analysis, and population attributable fractions (PAFs) to evaluate the impact on mortality and hospitalization after dementia diagnosis.

Results: One-year mortality and 1-year hospitalization probabilities in individuals with dementia and diabetes (10.3% and 31.7%, respectively) were higher than those without diabetes (8.3% and 25.4%, respectively). The adjusted hazard ratios for individuals with diabetes, as compared to those without, were 1.126 (95% confidence interval [CI], 1.040-1.220) for mortality and 1.191 (95% CI, 1.140-1.245) for hospitalization. The PAFs from the comorbidity of dementia and diabetes were 2.2% for mortality and 3.1% for hospitalization. Subgroup analysis showed that the PAFs were highest in men aged 75-79 years and women aged 80-84 years for mortality and in individuals aged 75-79 for hospitalization.

Conclusion: During the early postdiagnosis period, comorbid diabetes increases mortality and hospitalization risks in older adults with dementia. The variation in disease burden across age groups underscores the need for age-specific health care strategies to manage comorbid diabetes in individuals with dementia. *Geriatr Gerontol Int* 2024; ••: ••-••.

Keywords: dementia; diabetes; hospitalization; mortality; multimorbidity.

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Am J Prev Med

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. 2024 Jun 17:S0749-3797(24)00171-5.

When the Going Gets Tough: Multimorbidity and Heavy and Binge Drinking Among Adults

[Won K Cook](#)¹, [Libo Li](#)², [Priscilla Martinez](#)², [William C Kerr](#)²

Affiliations expand

- PMID: 38904593
- DOI: [10.1016/j.amepre.2024.05.014](https://doi.org/10.1016/j.amepre.2024.05.014)

Abstract

Introduction: Multimorbidity, the presence of two or more long-term health conditions in the same individual, is an emerging epidemic associated with increased morbidity and mortality. Continued drinking concurrent with alcohol-related chronic conditions, particularly with multimorbidity, is likely to further elevate health risk. This study aimed to examine the associations of multimorbidity among diabetes, hypertension, heart disease, and cancer with drinking, and moderation of these associations by age.

Methods: Logistic regression modeling was performed in 2023 using a nationally representative sample of U.S. adults from the 2015-19 National Survey on Drug Use and Health. Multimorbidity was assessed using (1) a count of these conditions and (2) disease-specific categories. The outcomes were past month heavy drinking (7+/14+ drinks weekly) and binge drinking (4+/5+ drinks per occasion) for women and men.

Results: A pattern of reduced odds for drinking outcomes associated with a greater degree of multimorbidity was found. This pattern was more apparent in models using the continuous measure of multimorbidity than in those using the categorical measure, and more consistent for binge drinking than for heavy drinking and for women than for men. Significant age interactions were found: the log odds of heavy drinking and binge drinking for both men and women decreased as the number of conditions increased, and more steeply for those ages 50+ than the younger. The log odds of heavy drinking varied little among men under age 50 regardless of multimorbidity.

Conclusions: Alcohol interventions to reduce drinking with multimorbidity, particularly among heavy-drinking men under age 50, are warranted.

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Conflict of interest statement

No financial disclosures have been reported by the authors of this paper.

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Editorial

J Adv Nurs

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. 2024 Jun 17.

doi: 10.1111/jan.16292. Online ahead of print.

[Multimorbidity: The need for a consensus on its operational definition](#)

[Jing Xi](#)¹, [Polly Wai-Chi Li](#)¹, [Doris Sau-Fung Yu](#)¹

Affiliations expand

- PMID: 38887124
- DOI: [10.1111/jan.16292](https://doi.org/10.1111/jan.16292)

No abstract available

Keywords: chronic disease burden; multi-morbidity; nursing; quality of life.

- [17 references](#)

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PLoS One

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. 2024 Jun 17;19(6):e0305215.

doi: 10.1371/journal.pone.0305215. eCollection 2024.

[Deprescribing interventions in older adults: An overview of systematic reviews](#)

[Shiyun Chua](#)¹, [Adam Todd](#)^{2,3}, [Emily Reeve](#)^{4,5}, [Susan M Smith](#)⁶, [Julia Fox](#)⁷, [Zizi Elsis](#)⁷, [Stephen Hughes](#)⁸, [Andrew Husband](#)^{2,3}, [Aili Langford](#)⁴, [Niamh Merriman](#)⁶, [Jeffrey R Harris](#)¹, [Beth Devine](#)⁷, [Shelly L Gray](#)^{7,9}; [Expert Panel](#)

Affiliations [expand](#)

- PMID: 38885276
- PMCID: [PMC11182547](#)

- DOI: [10.1371/journal.pone.0305215](https://doi.org/10.1371/journal.pone.0305215)

Abstract

Objective: The growing deprescribing field is challenged by a lack of consensus around evidence and knowledge gaps. The objective of this overview of systematic reviews was to summarize the review evidence for deprescribing interventions in older adults.

Methods: 11 databases were searched from 1st January 2005 to 16th March 2023 to identify systematic reviews. We summarized and synthesized the results in two steps. Step 1 summarized results reported by the included reviews (including meta-analyses). Step 2 involved a narrative synthesis of review results by outcome. Outcomes included medication-related outcomes (e.g., medication reduction, medication appropriateness) or twelve other outcomes (e.g., mortality, adverse events). We summarized outcomes according to subgroups (patient characteristics, intervention type and setting) when direct comparisons were available within the reviews. The quality of included reviews was assessed using A MeaSurement Tool to Assess systematic Reviews 2 (AMSTAR 2).

Results: We retrieved 3,228 unique citations and assessed 135 full-text articles for eligibility. Forty-eight reviews (encompassing 17 meta-analyses) were included. Thirty-one of the 48 reviews had a general deprescribing focus, 16 focused on specific medication classes or therapeutic categories and one included both. Twelve of 17 reviews meta-analyzed medication-related outcomes (33 outcomes: 25 favored the intervention, 7 found no difference, 1 favored the comparison). The narrative synthesis indicated that most interventions resulted in some evidence of medication reduction while for other outcomes we found primarily no evidence of an effect. Results were mixed for adverse events and few reviews reported adverse drug withdrawal events. Limited information was available for people with dementia, frailty and multimorbidity. All but one review scored low or critically low on quality assessment.

Conclusion: Deprescribing interventions likely resulted in medication reduction but evidence on other outcomes, in particular relating to adverse events, or in vulnerable subgroups or settings was limited. Future research should focus on designing studies powered to examine harms, patient-reported outcomes, and effects on vulnerable subgroups.

Systematic review registration: PROSPERO CRD42020178860.

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Conflict of interest statement

The authors have declared that no competing interests exist.

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

SUPPLEMENTARY INFO

MeSH terms, Grants and funding [expand](#)

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

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J Exp Med

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. 2024 Aug 5;221(8):e20231827.

doi: 10.1084/jem.20231827. Epub 2024 Jun 18.

[Human CD127 negative ILC2s show immunological memory](#)

[Laura Mathä](#)^{#1,2}, [Lisette Krabbendam](#)^{#3,4}, [Sergio Martinez Høyer](#)^{#1}, [Balthasar A Heesters](#)^{3,5}, [Korneliusz Golebski](#)^{3,6}, [Chantal Kradolfer](#)³, [Maryam Ghaedi](#)^{2,7}, [Junjie Ma](#)¹, [Ralph Stadhouders](#)⁴, [Claus Bachert](#)^{8,9,10,11,12}, [Lars-Olaf Cardell](#)¹¹, [Nan Zhang](#)¹⁰, [Gabriele Holtappels](#)¹⁰, [Sietze Reitsma](#)¹³, [Leanne Carijn Helgers](#)^{3,14}, [Teunis B H Geijtenbeek](#)^{3,14}, [Jonathan M Coquet](#)¹, [Fumio Takei](#)^{2,15}, [Hergen Spits](#)³, [Itziar Martinez-Gonzalez](#)^{1,3}

Affiliations [expand](#)

- PMID: [38889332](#)
- PMCID: [PMC11187981](#)
- DOI: [10.1084/jem.20231827](#)

Abstract

ILC2s are key players in type 2 immunity and contribute to maintaining homeostasis. ILC2s are also implicated in the development of type 2 inflammation-mediated chronic disorders like asthma. While memory ILC2s have been identified in mouse, it is unknown whether human ILC2s can acquire immunological memory. Here, we demonstrate the persistence of CD45RO, a marker previously linked to inflammatory ILC2s, in resting ILC2s that have undergone prior activation. A high proportion of these cells concurrently reduce the expression of the canonical ILC marker CD127 in a tissue-specific manner. Upon isolation and in vitro stimulation of CD127-CD45RO+ ILC2s, we observed an augmented ability to proliferate and produce cytokines. CD127-CD45RO+ ILC2s are found in both healthy and inflamed tissues and display a gene signature of cell activation. Similarly, mouse memory ILC2s show reduced expression of CD127. Our findings suggest that human ILC2s can acquire innate immune memory and warrant a revision of the current strategies to identify human ILC2s.

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Conflict of interest statement

Disclosures: K. Golebski reported grants from GlaxoSmithKline, personal fees from ALK, grants from SANOFI, and grants from STIMAG outside the submitted work. S. Reitsma reported personal fees from Sanofi, grants from Sanofi, personal fees and grants from GSK, personal fees from Novartis, and grants from Novartis outside the submitted work. H. Spits reported being a consultant for GSK. No other disclosures were reported.

- [46 references](#)
- [13 figures](#)

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MeSH terms, Substances, Grants and funding [expand](#)

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Real World Evidence asthma and COPD inhaled treatment therapy in Spain

[Xavier Muñoz](#)¹, [Jordi Giner](#)², [Antoni Sicras](#)³, [Daniele Lo Re](#)⁴

Affiliations expand

- PMID: 38906702
- DOI: [10.4187/respcare.11643](https://doi.org/10.4187/respcare.11643)

Abstract

Background: This study aimed to describe the use of pressured metered dose inhalers (pMDI) and dry powder inhalers (DPI) in Spanish patients in terms of socio-demographic, clinical, and functional characteristics in patients with asthma or COPD on maintenance treatment with inhaled therapy. **Methods:** A retrospective, descriptive, national, multicentre, and observational study using a database with 1.8 million patients from hospitals and primary care centers as a secondary information source. **Results:** The sample included 24,102 subjects with asthma on maintenance therapy (26.0% with pMDI, 54.9% with DPI, and 19.0% with a combination of DPI + pMDI inhalers) and 12,858 subjects with COPD on maintenance therapy (26.1% with pMDI, 38.7% with DPI and 35.2% with a combination of pMDI + DPI inhalers, mostly extemporaneous triple therapy). In proportion, subjects ≥ 75 years old use more pMDI than DPI, while younger subjects (40-64 years old) use more DPI. An inhalation chamber was prescribed in 51.0% of asthma subjects and 47.2% of COPD subjects treated with pMDI. The use of an inhalation chamber increases with the degree of airflow limitation by disease and age. In subjects with comorbidities, pMDI inhaler use increased in those ≥ 75 years old for asthma and COPD subjects. Switching from pMDI to DPI and vice versa was relatively common: 25.5% of asthma subjects and 21.9% of COPD subjects treated with pMDI had switched from DPI in the previous year. On the contrary, 14.1% and 11.7% of asthma and COPD patients treated with DPI had switched from pMDI the last year. **Conclusions:** The use of pMDI or DPI can vary according to age, both in asthma and COPD. Switching from pMDI to DPI and vice

versa is relatively common. Despite the availability of dual and triple therapy inhalers on the market, a considerable number of subjects were treated with multiple devices.

Keywords: Asthma; COPD; dry powder inhaler; inhalation devices; patient preference; pressurized metered-dose inhaler.

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J Allergy Clin Immunol Pract



. 2024 Jun 20:S2213-2198(24)00642-1.

doi: 10.1016/j.jaip.2024.06.019. Online ahead of print.

[Understanding breathlessness burden and psychophysiological correlates in asthma](#)

[Hayley Lewthwaite](#)¹, [Peter G Gibson](#)², [Paola D Urroz Guerrero](#)¹, [Amber Smith](#)¹, [Vanessa L Clark](#)¹, [Anne E Vertigan](#)³, [Sarah A Hiles](#)⁴, [Brooke Bailey](#)¹, [Janelle Yorke](#)⁵, [Vanessa M McDonald](#)⁶

Affiliations expand

- PMID: 38906398
- DOI: [10.1016/j.jaip.2024.06.019](https://doi.org/10.1016/j.jaip.2024.06.019)

Abstract

Background: Breathlessness is a disabling symptom, with complexity that is often under recognised and under treated in asthma.

Objective: To highlight the burden of breathlessness in people with severe compared with mild-to-moderate asthma and identify psychophysiological correlates of breathlessness.

Methods: This was a cross-sectional study of people with mild-to-severe asthma, who attended two in-person visits to complete a multidimensional assessment. The proportion of people with mild-to-moderate versus severe asthma who reported physically limiting breathlessness (modified Medical Research Council [mMRC] dyspnoea score ≥ 2) was compared. Psychophysiological factors associated with breathlessness in people with asthma were identified via a directed acyclic graph and explored with multivariate logistic regression to predict breathlessness.

Results: 144 participants were included, of which, 74 (51%) had mild-to-moderate asthma and 70 (49%) severe asthma. Participants were predominantly female (n=103, 72%) with a median (quartile 1, quartile 3) age of 63.4 (50.5,69.5) years and body mass index (BMI) of 31.3 (26.2, 36.0) kg/m². The proportion of people reporting mMRC ≥ 2 was significantly higher in those with severe- (n=37, 53%) compared with mild-to-moderate (n=21, 31%) asthma (p=0.013). Dyspnoea-12 Total (8.00 [4.75, 17.00] versus 5.00 [2.00, 11.00], p=0.037) score was also significantly higher in the severe asthma group. Significant predictors of physically limiting breathlessness were: BMI, asthma control, exercise capacity, and hyperventilation symptoms. Airflow limitation and type-2 inflammation were poor breathlessness predictors.

Conclusion: Over half of people with severe asthma experience physically limiting breathlessness despite treatment. Targeting psychophysiological factors, or traits, associated with breathlessness may help relieve this distressing symptom, which is of high priority to people with asthma.

Keywords: Asthma; Breathlessness; Dyspnoea; Severe asthma; Treatable Traits.

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Eur Respir J

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. 2024 Jun 20;63(6):2400160.

doi: 10.1183/13993003.00160-2024. Print 2024 Jun.

Clinical remission with biologic therapies in severe asthma: a matter of definition

[UK Severe Asthma Registry](#); [P Jane McDowell](#)^{1,2}, [Ron McDowell](#)³, [John Busby](#)³, [M Chad Eastwood](#)^{1,2}, [Pujan H Patel](#)⁴, [David J Jackson](#)⁵, [Adel Mansur](#)⁶, [Mitesh Patel](#)⁷, [Hassan Burhan](#)⁸, [Simon Doe](#)⁹, [Rekha Chaudhuri](#)¹⁰, [Robin Gore](#)¹¹, [James W Dodd](#)¹², [Deepak Subramanian](#)¹³, [Thomas Brown](#)¹⁴, [Liam G Heaney](#)^{15,2}

Affiliations expand

- PMID: 38901893
- PMCID: [PMC11187314](#)
- DOI: [10.1183/13993003.00160-2024](#)

Abstract

There is currently no evidence to support the use of maintenance and reliever therapy (MART) in patients with severe asthma and persistently elevated T2 biomarkers despite adherence to high dose ICS treatment <https://bit.ly/42IOVbA>

Conflict of interest statement

Conflicts of interest: The UK Severe Asthma Registry (UKSAR) does not receive any monetary benefits or benefits-in-kind from any pharmaceutical entity; UKSAR does make limited data contributions to the International Severe Asthma Registry (ISAR) and the ERS clinical research collaborative (SHARP), which do receive pharmaceutical funding. P.J. McDowell reports speaker fees from GSK, and support to attend scientific meetings from Chiesi. J. Busby reports grants from AstraZeneca, and personal fees from Nuvoair. M.C. Eastwood reports support to attend meetings from GSK. P.H. Patel has received advisory board fees and lecture fees from AstraZeneca, GlaxoSmithKline, Novartis and Sanofi. D.J. Jackson has received speaker fees and consultancy fees from AZ, GSK and Sanofi Regeneron. A. Mansur declares personal and to-institution payments for talks, advisory board meetings and sponsorship to attend conferences from AZ, GSK, Teva, Sanofi, Novartis and BI, and also declares research grants from GSK. H. Burhan reports fees for advisory board meetings from AstraZeneca and Novartis, honoraria for lectures from AstraZeneca, Chiesi, GSK and Sanofi, and support for attending conferences from AstraZeneca, Chiesi and GSK. S. Doe reports fees for advisory boards from Vertex, Gilead and Novartis, support for attending congresses from GSK, AZ, Gilead, Teva, Sanofi, Chiesi and Forest, and lecture fees from GSK, AZ and Sanofi. R. Chaudhuri has received lecture fees from GSK, AZ, Teva, Chiesi, Sanofi and Novartis, honoraria for advisory board meetings from GSK and AZ, sponsorship to attend international scientific meetings from Chiesi, Sanofi and GSK, and a research grant (paid to institute) from AZ for a UK multicentre study. R. Gore has received fees for lecturing from AZ, Novartis, Sanofi and GSK. J.W. Dodd has received honoraria for participating on advisory boards and given lectures at meetings supported by GSK, Boehringer Ingelheim, Chiesi, AstraZeneca, Fisher & Paykel and Aerogen, received sponsorship for attending international scientific meetings from Chiesi, and has also taken part in asthma clinical trials sponsored by Sanofi, AstraZeneca and Chiesi for which his institution received remuneration; his institution has received funding for research from MRC, NIHR, SBRI, NHSx, Templeton Foundation and Southmead Hospital research charity. D. Subramanian is part of the AZ Precision National Working Group and has received speaker fees from Chiesi. T. Brown has received fees as an external expert from AstraZeneca, speaker fees from AstraZeneca, GlaxoSmithKline, Sanofi, Teva, Novartis and Chiesi, honoraria for advisory board attendance from AstraZeneca, Sanofi and Teva, and sponsorship to attend international scientific meetings from Sanofi, GSK, Teva, Chiesi and Napp Pharmaceuticals. L.G. Heaney is academic lead for the Medical Research Council Stratified Medicine UK Consortium in Severe Asthma, which involves industrial partnerships with a number of pharmaceutical companies. The remaining authors have no potential conflicts of interest to disclose.

Comment on

- [Clinical remission with biologic therapies in severe asthma: a matter of definition.](#) Beasley R, Noble J, Weatherall M. *Eur Respir J.* 2023 Dec 14;62(6):2301844. doi: 10.1183/13993003.01844-2023. Print 2023 Dec. PMID: 38097202 No abstract available.

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[Editorial](#)

Eur Respir J

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. 2024 Jun 20;63(6):2400523.

doi: 10.1183/13993003.00523-2024. Print 2024 Jun.

[The evidence base for ICS/formoterol maintenance and reliever therapy in severe asthma](#)

[Richard Beasley](#)¹, [Jonathan Noble](#)², [Mark Weatherall](#)³

Affiliations [expand](#)

- PMID: 38901890
- PMCID: [PMC11187315](#)

- DOI: [10.1183/13993003.00523-2024](https://doi.org/10.1183/13993003.00523-2024)

Abstract

ICS/formoterol MART is an evidence-based alternative to high dose ICS/LABA in asthma patients at high risk of severe exacerbations; limited generalisability of RCTs to severe asthma registries applies similarly to high dose ICS/LABA therapy as to MART <https://bit.ly/4aVFrNH>

Conflict of interest statement

Conflicts of interest: R. Beasley has received institutional research funding from AstraZeneca, Genentech, the Health Research Council of New Zealand, CureKids NZ and Teva, personal fees from AstraZeneca, Avillion, Cipla and Teva, and is Chair of the Asthma and Respiratory Foundation of New Zealand adolescent and adult asthma guidelines. J. Noble and M. Weatherall have no potential conflicts of interest to declare.

Comment on

- [Clinical remission with biologic therapies in severe asthma: a matter of definition.](#) Beasley R, Noble J, Weatherall M. *Eur Respir J.* 2023 Dec 14;62(6):2301844. doi: 10.1183/13993003.01844-2023. Print 2023 Dec. PMID: 38097202 No abstract available.
- [24 references](#)

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[Review](#)



Global herpes zoster burden in adults with asthma: a systematic review and meta-analysis

[Kevin J Mortimer](#)^{1,2,3}, [Alvaro A Cruz](#)⁴, [Ingrid T Sepúlveda-Pachón](#)⁵, [Anamaria Jorga](#)⁶, [Hilde Vroeling](#)⁷, [Charles Williams](#)⁸

Affiliations expand

- PMID: 38901886
- DOI: [10.1183/13993003.00462-2024](https://doi.org/10.1183/13993003.00462-2024)

Abstract

Background: Asthma is a common respiratory disease, which may be associated with an increased risk of herpes zoster (HZ), often a debilitating disease associated with severe pain. This was the first systematic review with the objective of summarizing evidence on HZ burden in adults with asthma.

Methods: A global systematic literature review (SLR) and meta-analysis was conducted (Medline and Embase, 2003-2024), on HZ burden (incidence, risk, complications) in adults (≥18 years) with asthma.

Results: There were 19 studies included on HZ outcomes in adults with asthma. Pooled HZ incidence per 1000 person-years was 5.71 (95% confidence interval [CI] 4.68-6.96) in ≥18-year-olds (4.20 [3.09-5.70] in <60-year-olds *versus* 10.33 [9.17-11.64] in ≥60-year-olds). The pooled rate ratio for developing HZ was 1.23 [1.11-1.35] in ≥18-year-olds, and 1.36 [1.15-1.61] in ≥50-year-olds. The risk of HZ was higher in people with asthma using systemic corticosteroids; long-acting beta-agonists plus inhaled corticosteroids; and "add-on therapy". Asthma was also associated with an increased risk of post-herpetic neuralgia (odds ratio, OR 1.21 [1.06-1.37]) and HZ ophthalmicus (OR 1.9 [1.1-3.2]). Differences in study design, setting, case definitions, and follow-up durations led to heterogeneity.

Conclusions: This SLR and meta-analysis found that adults with asthma have an increased risk of HZ, with higher risks in older age groups, and in those on certain treatments, such as oral corticosteroids. HZ vaccines are available for adults, including those with comorbidities such as asthma, and can be considered as part of integrated respiratory care.

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Int Arch Allergy Immunol

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. 2024 Jun 20:1-24.

doi: 10.1159/000539382. Online ahead of print.

[The Association between Migration and Prevalence of Allergic Diseases: A Systematic Review and Meta-Analysis](#)

[Qi Yi Ambrose Wong](#)^{1,2}, [Fook Tim Chew](#)^{1,2,3}

Affiliations [expand](#)

- PMID: 38901406

- DOI: [10.1159/000539382](https://doi.org/10.1159/000539382)

Abstract

Introduction: Allergic diseases remain of concern due to their increasing prevalence worldwide. Intrinsic and environmental risk factors have been implicated in the pathogenesis of allergic disease. Among the possible risk factors, migration has been associated with the manifestation of allergic diseases. We aimed to consolidate the existing evidence, review the hypotheses for the relationship between environmental factors and allergic disease, and provide a direction for future work.

Methods: This systematic review and meta-analysis complied with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The Web of Science database was searched in September 2023 to retrieve publications investigating the relationship between allergic rhinitis (AR), atopic dermatitis (AD), or asthma and the following factors: (i) migrant status (i.e., migrants vs. natives) or (ii) duration since migration among migrants. Risk of bias was assessed using the JBI critical appraisal tool. Details and findings from the included studies were also summarized and meta-analyses were conducted where appropriate.

Results: Fifty studies encompassing an estimated 3,755,248 individuals were reviewed. Articles investigated asthma (n = 46), AR (n = 16), and AD (n = 14). A variety of migration-related factors were also studied: movement of individuals across regions (n = 40), duration since immigration (n = 12), age at immigration (n = 9), and acculturation (n = 2). Migration status was not significantly associated with AD (pooled odds ratio [pOR] = 0.68, 95% confidence interval (CI) = 0.31, 1.49). Although AR prevalence was lower among immigrants than natives (pOR = 0.58, 95% CI = 0.45, 0.74), immigrants who had resided at least 10 years in the destination country had a higher risk of AR than immigrants with a duration of residence of less than 10 years (pOR = 8.36, 95% CI = 4.15, 16.81). Being an immigrant was also associated with a decreased risk of asthma (pOR = 0.56, 95% CI = 0.44, 0.72). Among immigrants, residing in the host country for at least 10 years was associated with increased asthma manifestation (pOR = 1.85, 95% CI = 1.25, 2.73). Immigrants who migrated aged 5 and below did not exhibit a significantly higher likelihood of asthma than migrants who immigrated older than 5 years (pOR = 1.01, 95% CI = 0.68, 1.50).

Conclusion: This review was limited by the primarily cross-sectional nature of the included studies. Objective diagnoses of allergic disease, such as using the spirometry of bronchodilator reversibility test for asthma rather than questionnaire responses, could add to the reliability of the outcomes. Furthermore, immigrant groups were mostly nonspecific, with little distinction between their country of origin. Overall, migration appears to be a protective factor for allergic diseases, but the protection subsides over time and the prevalence of allergic diseases among the immigrant group approaches that of the host population.

Keywords: Allergic rhinitis; Asthma; Atopic dermatitis; Epidemiology; Migration.

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Eur Respir J



. 2024 Jun 20;63(6):2400005.

doi: 10.1183/13993003.00005-2024. Print 2024 Jun.

[IL-33 induced gene expression in activated Th2 effector cells is dependent on IL-1RL1 haplotype and asthma status](#)

[Akshaya Keerthi Saikumar Jayalatha](#)^{1,2}, [Marlies E Ketelaar](#)^{1,3,2}, [Laura Hesse](#)^{1,2}, [Yusef E Badi](#)⁴, [Nazanin Zounemat-Kermani](#)⁴, [Sharon Brouwer](#)¹, [Nicole F Dijk](#)³, [Maarten van den Berge](#)⁵, [Victor Guryev](#)⁶, [Ian Sayers](#)⁷, [Judith E Vonk](#)⁸, [Ian M Adcock](#)⁴, [Gerard H Koppelman](#)³, [Martijn C Nawijn](#)⁹

Affiliations [expand](#)

- PMID: 38843913
- PMCID: [PMC11187316](#)

- DOI: [10.1183/13993003.00005-2024](https://doi.org/10.1183/13993003.00005-2024)

Abstract

IL-33 response in Th2 cells is specific to asthma and represents a high risk haplotype, highlighting its role in airway wall cells. Yet, its detection is challenging in bulk asthma transcriptomes due to the scarcity of effector Th2 cells. <https://bit.ly/3WhuMbo>

Conflict of interest statement

Conflict of interest: All author report that funding for this manuscript was provided by GlaxoSmithKline (GSK) and Lung Foundation Netherlands (3.2.09.081JU). M.C. Nawijn reports support for the present manuscript from the Netherlands Ministry of Economic Affairs and Climate Policy by means of the PPP allowance. M.E. Ketelaar reports an unpaid leadership position as young investigator board member of the Netherlands Respiratory Society, outside the submitted work. L. Hesse reports payment for expert testimony from Chiesi, outside the submitted work. M. van den Berge reports grants from Chiesi, AstraZeneca, Novartis, Genentech and Roche, outside the submitted work. I. Sayers reports grants from Boehringer Ingelheim and the Biotechnology and Biological Sciences Research Council (BBSRC), outside the submitted work. I.M. Adcock reports support for the present manuscript from EU-IMI; and outside the submitted work, reports grants from GSK, MRC and EPSRC, consulting fees from GSK, Sanofi, Chiesi and Kinaset, lecture honoraria from AstraZeneca, Sanofi, Eurodrug and Sunovion, payment for expert testimony from Chiesi and travel support from AstraZeneca. G.H. Koppelman reports grants from Lung Foundation Netherlands, Teva the Netherlands, European Union H2020 programme, Ubbo Emmius Foundation and Vertex, consulting fees from AstraZeneca and Pure IMS, and lecture honoraria from Sanofi Genzyme; outside the submitted work. The remaining authors have no potential conflicts of interest to disclose.

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

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Sci Total Environ



. 2024 Jun 20:930:172543.

doi: 10.1016/j.scitotenv.2024.172543. Epub 2024 Apr 16.

Early exposure to sunlight and allergic morbidity: The PARIS birth cohort

[Léa Lefebvre](#)¹, [Hélène Amazouz](#)², [Fanny Rancière](#)³, [Isabelle Momas](#)⁴

Affiliations expand

- PMID: 38636876
- DOI: [10.1016/j.scitotenv.2024.172543](https://doi.org/10.1016/j.scitotenv.2024.172543)

Free article

Abstract

The relationship between sunlight and allergies in children has received limited attention from researchers. We sought to explore how early exposure to solar radiation is associated with allergic morbidity within the PARIS birth cohort study. Our research dealt with children who attended at least one of two health checkups: at 18 months (n = 2012) and at 8-9 years (n = 1080). Early exposure to solar radiation was assessed using meteorological data (e.g., solar radiation, temperature, and relative humidity). Children with similar meteorological exposure trajectories were grouped by a longitudinal and multidimensional cluster analysis. The association between solar radiation exposure and allergic morbidity (i.e., allergic sensitization at 18 months and 8-9 years; current asthma, rhinitis, and eczema at 8-9 years) was quantified by multivariable logistic regression models adjusted for potential confounders. The effect modification of maternal vitamin D supplementation during pregnancy was tested. Four meteorological exposure trajectories were found. The trajectory with the highest exposure to early solar radiation had a reduced risk of

sensitization at 8-9 years compared to the trajectory with the lowest exposure ($p = 0.06$). The association was statistically significant in the vitamin D supplementation group. Solar radiation during prenatal and postnatal periods was significantly associated with a lower risk of sensitization at 8-9 years (for one interquartile range (IQR) increase, adjusted odds ratio (aOR): 0.47; 95 % confidence interval (CI): 0.25-0.87 and 0.84; 0.7-1.00, respectively). Increased prenatal exposure to solar radiation was significantly associated with a lower risk of asthma at 8-9 years (for one IQR increase, aOR: 0.32; 95 % CI: 0.1-0.96). Early sunlight exposure may reduce the risk of sensitization and asthma in school-aged children, especially in those prenatally exposed to vitamin D. These findings highlight the importance of vitamin D in preventing allergic diseases in children, either through supplementation or sunlight exposure.

Keywords: Allergy; Children; Pregnancy; Sunlight; Vitamin D.

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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

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Clin Exp Immunol

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. 2024 Jun 20;217(1):31-44.

doi: 10.1093/cei/uxae022.

Allergens induce upregulated IL-18 and IL-18R α expression in blood Th2 and Th17 cells of patients with allergic asthma

[Junling Wang](#)^{1,2,3}, [Mengmeng Zhan](#)¹, [Yaping Zhai](#)¹, [Siqin Wang](#)¹, [Fangqiu Gu](#)³, [Zhuo Zhao](#)³, [Zhaolong Zhang](#)¹, [Yifei Li](#)¹, [Xin Dong](#)¹, [Yijie Zhang](#)², [Bingyu Qin](#)¹

Affiliations expand

- PMID: 38587448
- PMCID: PMC11188545 (available on 2025-04-08)
- DOI: [10.1093/cei/uxae022](https://doi.org/10.1093/cei/uxae022)

Abstract

Allergic asthma (AA) is closely associated with the polarization of T helper (Th)2 and Th17 cells. Interleukin (IL)-18 acts as an inducer of Th2 and Th17 cell responses. However, expressions of IL-18 and IL-18 receptor alpha (IL-18R α) in blood Th2 and Th17 cells of patients with AA remain unclear. We therefore investigated their expressions in Th2 and Th17 cells using flow cytometric analysis, quantitative real-time PCR (qPCR), and murine AA model. We observed increased proportions of Th2, Th17, IL-18+, IL-18+ Th2, and IL-18+ Th17 cells in blood CD4+ T cells of patients with AA. Additionally, house dust mite seemed to upregulate further IL-18 expression in Th2 and Th17, and upregulate IL-18R α expression in CD4+ T, Th2, and Th17 cells of AA patients. It was also found that the plasma levels of IL-4, IL-17A, and IL-18 in AA patients were elevated, and they were correlated between each other. In ovalbumin (OVA)-induced asthma mouse (AM), we observed that the percentages of blood CD4+ T, Th2, and Th17 cells were increased. Moreover, OVA-induced AM expressed higher level of IL-18R α in blood Th2 cells, which was downregulated by IL-18. Increased IL-18R α expression was also observed in blood Th2 cells of OVA-induced Fc ϵ R1 α -/- mice. Collectively, our findings suggest the involvement of Th2 cells in AA by expressing excessive IL-18 and IL-18R α in response to allergen, and that IL-18 and IL-18R α expressing Th2 cells are likely to be the potential targets for AA therapy.

Keywords: IL-18; IL-18 receptor alpha; Th2 cell; allergic asthma.

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Conflict of interest statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

- [60 references](#)

SUPPLEMENTARY INFO

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[Review](#)

J Allergy Clin Immunol

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. 2024 Jun 19:S0091-6749(24)00634-1.

doi: 10.1016/j.jaci.2024.06.010. Online ahead of print.

Precision Medicine for Asthma Treatment: Unlocking the Potential of the Epigenome and Microbiome

[Javier Perez-Garcia¹](#), [Andres Cardenas²](#), [Fabian Lorenzo-Diaz³](#), [Maria Pino-Yanes⁴](#)

Affiliations expand

- PMID: 38906272
- DOI: [10.1016/j.jaci.2024.06.010](https://doi.org/10.1016/j.jaci.2024.06.010)

Abstract

Asthma is a leading worldwide biomedical concern. Patients can experience life-threatening worsening episodes (exacerbations) usually controlled by anti-inflammatory and bronchodilator drugs. However, substantial heterogeneity in treatment response exists and a subset of patients with unresolved asthma carry the major burden of this disease. The study of the epigenome and microbiome might bridge the gap between human genetics and environmental exposures to partially explain the heterogeneity in drug response. This review aims to provide a critical examination of the existing literature on the microbiome and epigenetic studies examining associations with asthma treatments and drug response, highlight convergent pathways, address current challenges, and offer future perspectives. Current epigenetic and microbiome studies have shown the bilateral relationship between asthma pharmacological interventions and the human epigenome and microbiome. These studies, focusing on corticosteroids and to a lesser extent on bronchodilators, azithromycin, immunotherapy, and mepolizumab, have improved the understanding of the molecular basis of treatment response and identified promising biomarkers for drug response prediction. Immune and inflammatory pathways (i.e., IL-2, TNF- α , NF- κ B, and CEBPs) underlie microbiome-epigenetic associations with asthma treatment, representing potential therapeutic pathways to be targeted. A comprehensive evaluation of these omic biomarkers could significantly contribute to precision medicine and new therapeutic target discovery.

Keywords: DNA methylation; EWAS; bacteria; biomarker; drug response; epigenetics; microbiota; omics; personalized medicine; respiratory disease.

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Observational Study

BMJ Open Respir Res

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. 2024 Jun 19;11(1):e002316.

doi: 10.1136/bmjresp-2024-002316.

Sex differences in asthma control, lung function and exacerbations: the ATLANTIS study

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Affiliations expand

- PMID: 38901877
- PMCID: [PMC11191767](#)
- DOI: [10.1136/bmjresp-2024-002316](#)

Abstract

Background: Asthma is a heterogeneous disease with a prevalence and severity that differs between male and female patients.

Question: What are differences between male and female patients with asthma with regard to asthma control, lung function, inflammation and exacerbations?

Methods: We performed a post hoc analysis in the ATLANTIS (Assessment of Small Airways Involvement in Asthma) study, an observational cohort study including patients with asthma from nine countries with a follow-up of 1 year during which patients were characterised with measures of large and small airway function, questionnaires, inflammation and imaging. We compared differences in baseline characteristics and longitudinal outcomes between male and female patients with asthma.

Results: 773 patients were enrolled; 450 (58%) of these were female. At baseline, female patients with asthma were in higher Global Initiative for Asthma (GINA) steps ($p=0.042$), had higher Asthma Control Questionnaire 6 (F: 0.83; M: 0.66, $p<0.001$) and higher airway resistance as reflected by uncorrected impulse oscillometry outcomes (ie, R_5-R_{20} : F: 0.06; M: 0.04 kPa/L/s, $p=0.002$). Male patients with asthma had more severe airway obstruction (forced expiratory volume in 1 s/forced vital capacity % predicted: F: 91.95; M: 88.33%, $p<0.01$) and more frequently had persistent airflow limitation (F: 27%; M: 39%, $p<0.001$). Blood neutrophils were significantly higher in female patients ($p=0.014$). With Cox regression analysis, female sex was an independent predictor for exacerbations.

Interpretation: We demonstrate that female patients are in higher GINA steps, exhibit worse disease control, experience more exacerbations and demonstrate higher airway resistance compared with male patients. The higher exacerbation risk was independent of GINA step and blood eosinophil level. Male patients, in turn, have a higher prevalence of persistent airflow limitation and more severe airflow obstruction. These findings show sex can affect clinical phenotyping and outcomes in asthma.

Trial registration number: [NCT02123667](https://www.clinicaltrials.gov/ct2/show/study/NCT02123667).

Keywords: asthma; asthma epidemiology.

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Conflict of interest statement

Competing interests: SM reports a travel grant from GSK outside of the submitted work. MK reports grants paid to her institution by National Institutes of Health, American Lung Association, Synairgen, Janssen, AstraZeneca and Sanofi; personal consulting fees from AstraZeneca, Sanofi, Chiesi, GSK, Kinaset, Genentech; presentation fees from Chiesi;

support for attending the European Respiratory Society annual conference; one issued and two filed patents by RaeSedo; participation in data safety and monitoring board at ALung and past membership of the National Heart, Lung and Blood Advisory Council; current membership of Association of Professor of Medicine; equity ownership in RaeSedo and is a section editor for UptoDate. SS reports consulting fees from CSL Behring, AstraZeneca, GSK, Areteia Therapeutics, Novartis; speaker fees for presenting ATLANTIS data by Chiesi; support from ERS for attending ERS science council meetings and membership of the ALTANTIS scientific steering group. LMF reports being a consultant for Chiesi; consulting fees by Chiesi, GSK, AstraZeneca, Novartis, Alfasigma and participation in a board with Novartis and Chiesi. KFR reports presenter fees by AstraZeneca, Boehringer Ingelheim, Chiesi, Novartis, Sanofi, Regeneron, GSK, Berlin Chemie, Roche Pharma; participation in data safety and monitoring boards for AstraZeneca, Boehringer Ingelheim, Sanofi and Regeneron; leadership of German Center for Lung Research (DZL), German Chest Society (DGP) and American Thoracic Society. AP reports grants or contracts paid to institution by Chiesi, AstraZeneca, GSK, Sanofi, Agenzia Italiana del farmaco (AIFA); consulting fees from Chiesi, AstraZeneca, GSK, Novartis, Sanofi, Avillion, Elpen Pharmaceuticals; speaker fees from Chiesi, AstraZeneca, GSK, Menarini, Novartis, Zambon, Mundipharma, Sanofi, Edmond Pharma, Iqvia, Avillion, Elpen Pharmaceuticals, membership of advisory board for Chiesi, AstraZeneca, GSK, MSD, Novartis, Sanofi, Iqvia, Avillion, Elpen Pharmaceuticals. CEB reports grants paid to institution by GSK, AstraZeneca, Sanofi, Regeneron, Roche, Genentech, Boehringer Ingelheim, Chiesi, Novartis, Mologic, Areteia and consulting fees paid to institution by GSK, AstraZeneca, Sanofi, Regeneron, Roche, Genentech, Boehringer Ingelheim, Chiesi, Novartis, Mologic, Areteia. DS reports consulting fees from Aerogen, AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, CSL Behring, EpiEndo, Genentech, GSK, Glenmark, Gossamer Bio, Kinaset Therapeutics, Menarini, Novartis, Orion, Pulmatrix, Sanofi, Synairgen, Teva, Theravance Biopharma, Verona Pharma. TvdM reports presenter fees paid to institution by Chiesi and GSK. MCN reports unrestricted research grants paid to institution: European Union's H2020 Research and Innovation Programme under grant agreement, the Ministry of Economic Affairs and Climate Policy (the Netherlands) through a PPP allowance from the Top Sector Life Sciences & Health, GSK, Stevenage (UK), Netherlands Lung Foundation, the Chan Zuckerberg Initiative, The Stichting Astmabestrijding; support of travel costs by the Belgian Respiratory Society and unpaid leadership of the Lung Bionetwork of the Human Cell Atlas consortium. HAMK reports that his institution has received fees per patient for recruitment in trials from GSK, Novartis and FLUIDDA, grants for investigator-initiated studies from GSK, Novartis and Boehringer. Additionally, his institution has received consultancy fees from Novartis, AstraZeneca, Boehringer Ingelheim, Chiesi and GSK. MvdB reports grants paid to the University from GSK, Chiesi, Teva, AstraZeneca, Genentech, outside the submitted work.

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

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J Transl Med



. 2024 Jun 19;22(1):581.

doi: 10.1186/s12967-024-05366-6.

[Genetic perturbation of IL-6 receptor signaling pathway and risk of multiple respiratory diseases](#)

[Dongsheng Wu](#) ^{#1}, [Zhipeng Gong](#) ^{#1}, [Xiaohu Hao](#) ^{#1}, [Lunxu Liu](#) ²

Affiliations expand

- PMID: 38898459
- PMCID: [PMC11188576](#)
- DOI: [10.1186/s12967-024-05366-6](#)

Abstract

Dysregulation of inflammation can lead to multiple chronic respiratory diseases, such as chronic obstructive pulmonary disease (COPD) and asthma. Interleukin-6 (IL6) is crucial in

regulating the inflammatory cascade, but the causal link between IL6 signaling downregulation and respiratory diseases risk is unclear. This study uses Mendelian randomization to examine the effects of IL6R blockade on respiratory diseases. Analyzing data from 522,681 Europeans, 26 genetic variants were obtained to mimic IL6R inhibition. Our findings show that IL6R blockade significantly reduces the risk of COPD (OR = 0.71, 95% CI = 0.60-0.84) and asthma (OR = 0.82, 95% CI = 0.74-0.90), with protective trends for bronchitis, pulmonary embolism, and lung cancer. Results were consistent across methods, with no significant heterogeneity or pleiotropy. These insights suggest IL6R downregulation as a potential therapeutic target for respiratory diseases, meriting further clinical investigation.

Keywords: Interleukin-6; Mendelian randomization; Respiratory diseases; Therapeutic target.

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Conflict of interest statement

The authors declare that they have no competing interests.

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

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Publication types, MeSH terms, Substances, Grants and funding expand

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[Multicenter Study](#)

Arch Dis Child

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. 2024 Jun 19;109(7):536-542.

doi: 10.1136/archdischild-2023-326247.

Emergency department discharge practices for children with acute wheeze and asthma: a survey of discharge practice and review of safety netting instructions in the UK and Ireland

[Romanie Hannah](#)¹, [Richard J P G Chavasse](#)², [James Y Paton](#)³, [Emily Walton](#)⁴, [Damian Roland](#)^{5,6}, [Steven Foster](#)⁷, [Mark D Lyttle](#)^{8,9}; PERUKI

Affiliations expand

- PMID: 38627029
- DOI: [10.1136/archdischild-2023-326247](https://doi.org/10.1136/archdischild-2023-326247)

Abstract

Objective: Recovery from acute wheeze and asthma attacks should be supported with safety netting, including treatment advice. We evaluated emergency department (ED) discharge practices for acute childhood wheeze/asthma attacks to describe variation in safety netting and recovery bronchodilator dosing.

Design: Two-phase study between June 2020 and September 2021, comprising (1) Departmental discharge practice survey, and (2) Analysis of written discharge instructions for caregivers.

Setting: Secondary and tertiary EDs in rural and urban settings, from Paediatric Emergency Research in the UK and Ireland (PERUKI).

Main outcome measures: Describe practice and variation in discharge advice, treatment recommendations and safety netting provision.

Results: Of 66/71 (93%) participating sites, 62/66 (93.9%) reported providing written safety netting information. 52/66 (78.8%) 'nearly always' assessed inhaler/spacer technique; routine medication review (21/66; 31.8%) and adherence (16/66; 21.4%) were less frequent. In phase II, 61/66 (92.4%) submitted their discharge documents; 50/66 (81.9%) included bronchodilator plans. 11/66 (18.0%) provided Personalised Asthma Action Plans as sole discharge information. 45/50 (90%) provided 'fixed' bronchodilator dosing regimes; dose tapering was common (38/50; 76.0%). Median starting dose was 10 puffs 4 hourly (27/50, 54.0%); median duration was 4 days (29/50, 58.0%). 13/61 (21.3%) did not provide bronchodilator advice for acute deterioration; where provided, 42/48 (87.5%) recommended 10 puffs immediately. Subsequent dosages varied considerably. Common red flags included inability to speak (52/61, 85.2%), inhalers not lasting 4 hours (51/61, 83.6%) and respiratory distress (49/61, 80.3%).

Conclusions: There is variation in bronchodilator dosing and safety netting content for recovery following acute wheeze and asthma attacks. This reflects a lack of evidence, affirming need for further multicentre studies regarding bronchodilator recovery strategies and optimal safety netting advice.

Keywords: Child Health; Paediatric Emergency Medicine; Paediatrics; Respiratory Medicine.

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Conflict of interest statement

Competing interests: None declared.

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J Asthma

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. 2024 Jun 18:1-11.

doi: 10.1080/02770903.2024.2368201. Online ahead of print.

Effect of aerosol inhalation of budesonide on respiratory symptoms and inflammatory factors in patients with asthma: a meta-analysis

[Jinquan Xu¹](#), [Luxin Kou¹](#), [Dongchao Bai¹](#), [Peng Lian¹](#), [Song Na¹](#), [Lei Zhang¹](#), [Li Gang¹](#)

Affiliations expand

- PMID: 38889078
- DOI: [10.1080/02770903.2024.2368201](https://doi.org/10.1080/02770903.2024.2368201)

Abstract

Objective: To review the efficacy, symptoms, inflammatory factors and pulmonary function of different doses of budesonide aerosol inhalation in the treatment of patients with asthma.

Methods: The Chinese and English literature databases were searched with "Effects of different doses of budesonide aerosol inhalation on the efficacy, lung function, inflammation, symptoms and adverse reactions in patients with asthma" as the search direction, and a Meta-analysis was performed.

Results: Compared with the low dose group, the efficacy, PEF and FEV1 were significantly increased and the clinical symptom score, TNF- α and IL-4 were significantly decreased in the high dose group ($P < 0.05$). There was no significant difference in IFN- γ level and the incidence of adverse reactions between the two groups ($P > 0.05$).

Conclusion: High-dose budesonide aerosol inhalation therapy can improve the efficacy and lung function of patients, reduce inflammation and clinical symptoms, and does not increase the risk of adverse reactions, which is worthy of clinical promotion.

Keywords: Asthma; Budesonide atomization inhalation; Inflammatory factors; Meta-analysis; Pulmonary function; Symptoms.

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JCI Insight

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. 2024 Jun 18:e181024.

doi: 10.1172/jci.insight.181024. Online ahead of print.

[Peroxidase-mediated mucin cross-linking drives pathologic mucus gel formation in IL-13-stimulated airway epithelial cells](#)

[Maude A Liegeois](#)¹, [Margaret Braunreuther](#)², [Annabelle R Charbit](#)¹, [Wilfred W Raymond](#)¹, [Monica Tang](#)³, [Prescott G Woodruff](#)¹, [Stephanie A Christenson](#)³, [Mario Castro](#)⁴, [Serpil C Erzurum](#)⁵, [Elliot Israel](#)⁶, [Nizar N Jarjour](#)⁷, [Bruce D Levy](#)⁶, [Wendy C Moore](#)⁸, [Sally E Wenzel](#)⁹, [Gerald G Fuller](#)², [John V Fahy](#)¹

Affiliations expand

- PMID: 38889046
- DOI: [10.1172/jci.insight.181024](https://doi.org/10.1172/jci.insight.181024)

Free article

Abstract

Mucus plugs occlude airways to obstruct airflow in asthma. Studies in patients and in mouse models show that mucus plugs occur in the context of type 2 inflammation, and studies in human airway epithelial cells (HAECs) show that interleukin 13 (IL-13) activated cells generate pathologic mucus independently of immune cells. To determine how HAECs autonomously generate pathologic mucus, we used a magnetic microwire rheometer to characterize the viscoelastic properties of mucus secreted under varying conditions. We found that normal HAEC mucus exhibits viscoelastic liquid behavior and that mucus secreted by IL-13 activated HAECs exhibits solid-like behavior caused by mucin cross-linking. In addition, IL-13 activated HAECs show increased peroxidase activity in apical secretions, and an overlaid thiolated polymer (thiomer) solution shows an increase in solid behavior that is prevented by peroxidase inhibition. Furthermore, gene expression for thyroid peroxidase (TPO), but not lactoperoxidase (LPO), is increased in IL-13 activated HAECs and both TPO and LPO catalyze the formation of oxidant acids that cross-link thiomer solutions. Finally, gene expression for TPO in airway epithelial brushings is increased in asthma patients with high airway mucus plug scores. Together, our results show that IL-13 activated HAECs autonomously generate pathologic mucus via peroxidase-mediated cross-linking of mucin polymers.

Keywords: Asthma; Cell biology; Molecular biology; Pulmonology; Th2 response.

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17

J Asthma

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. 2024 Jun 18:1-16.

doi: 10.1080/02770903.2024.2368193. Online ahead of print.

[Efficacy and Safety of Subcutaneous Immunotherapy Combined with Omalizumab in Children with Dust Mite-Induced Asthma](#)

[Chao Long](#)¹, [Caihong Sun](#)², [Hang Lin](#)³, [Xiang Gao](#)³, [Zhenghai Qu](#)⁴

Affiliations expand

- PMID: 38888746
- DOI: [10.1080/02770903.2024.2368193](https://doi.org/10.1080/02770903.2024.2368193)

Abstract

Objective: To evaluate the benefits of combining omalizumab with specific immunotherapy (SCIT) in the treatment of children with bronchial asthma. **Methods:** In this study, 83 children with asthma were treated at the Allergy Department of Qingdao University from January 2019 to February 2020. Participants were divided into three groups: SCIT, combination (omalizumab + SCIT), and control (standard asthma medications). We assessed Asthma Control Questionnaire (ACQ) scores, Visual Analogue Scale (VAS) scores, and lung function at baseline, 24 weeks, and 48 weeks. Additionally, asthma medication scores were compared at 24 and 48 weeks. Adverse reactions were monitored in both the SCIT and combination groups. **Results:** The combination group demonstrated lower ACQ scores at both 24 and 48 weeks, and improved VAS scores at 48 weeks compared to the other groups. Additionally, lung function parameters (FEV1 and FEF50) showed significant improvement in the combination group. Reduced asthma medication scores were noted in the combination group at 24 and 48 weeks. Local adverse reactions were fewer in the combination group, and no systemic adverse reactions were reported. **Conclusion:** Combining omalizumab with SCIT provides quicker asthma control, lowers medication requirements, and enhances lung function with fewer adverse effects, making it a safe and effective treatment for children with bronchial asthma.

Keywords: Omalizumab; asthma; dust mite; efficacy; specific immunotherapy.

FULL TEXT LINKS

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18

Respirology

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. 2024 Jun 18.

doi: 10.1111/resp.14775. Online ahead of print.

Allergic broncho-pulmonary aspergillosis: Old disease, new frontiers

[Eve Denton](#)^{1,2}, [Peter Wark](#)^{2,3}, [Mark Hew](#)^{1,4}

Affiliations expand

- PMID: 38887939
- DOI: [10.1111/resp.14775](https://doi.org/10.1111/resp.14775)

No abstract available

Keywords: ABPA; allergic bronchopulmonary aspergillosis; aspergillus; asthma.

- [18 references](#)

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Ann Allergy Asthma Immunol



. 2024 Jun 17:S1081-1206(24)00365-X.

doi: 10.1016/j.anai.2024.06.016. Online ahead of print.

The Combination of Allergen Immunotherapy and Biologics for Inhalant Allergies: Exploring the Synergy

[Bianca Olivieri](#)¹, [Fatma Esra Günaydin](#)², [Jonathan Corren](#)³, [Gianenrico Senna](#)⁴, [Stephen R Durham](#)⁵

Affiliations expand

- PMID: 38897405
- DOI: [10.1016/j.anai.2024.06.016](https://doi.org/10.1016/j.anai.2024.06.016)

Abstract

The development of monoclonal antibodies that selectively target IgE and type 2 immunity has opened new possibilities in the treatment of allergies. Although they have been used mainly as single therapies that have shown efficacy in the management of asthma and other T2-mediated diseases, there is a growing interest in using these monoclonal antibodies in combination with allergen immunotherapy (AIT). AIT has transformed the treatment of allergic diseases by aiming to modify the underlying immune response to allergens rather than just providing temporary symptom relief. Despite the proven efficacy and safety of AIT, unmet needs call for further research and innovation. Combination strategies involving biologics and AIT exhibit potential in improving short-term efficacy, reducing adverse events, and increasing immunological tolerance. Anti-IgE emerges as the most promising therapeutic strategy, not only enhancing AIT's safety and tolerability but also providing additional evidence of efficacy compared to AIT alone. Anti-IL-4 receptor offers a reduction in side effects and an improved immunological profile when combined with AIT, however its impact on short-term efficacy appears limited. The combination of cat

dander subcutaneous immunotherapy with anti-TSLP was synergistic with enhanced efficacy and altered immune responses that persisted for one year after discontinuation compared to AIT alone. Long-term studies are needed to evaluate the sustained benefits and safety profiles of combination strategies.

Keywords: Dupilumab; IL-4; IgE; Omalizumab; TSLP; Tezepelumab; allergen; allergic rhinitis; biologics; cat dander; grass pollen; immunotherapy.

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Conflict of interest statement

Declaration of competing interest BO received an honorarium for a lecture from Bruschetti. FEG declares no conflicts of interests. JC received grants and personal fees from AstraZeneca, Genentech and Vectura, and has received grants from Optinose, Regeneron, Novartis, Pulmatrix, Sanofi and Teva Pharmaceuticals. GS declares grants for advisory boards, participation to meetings and lectures from AstraZeneca, GlaxoSmithKline and Sanofi. SD is a member of the Immune Tolerance Network Steering Committee, NIAID, NIH, USA, and an External Adviser for the CAUSE Committee, NIAID, NIH, USA. He declares grants from Revelo, ANGANY Inc., and the Immune Tolerance Network, NIAID, NIH, USA; consulting fees from ALK Abello, Revelo, and ANGANY Inc.; honoraria for lectures from ALK Abello, Abbott Labs, Torii, and Pneumo Update GmbH;

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Ann Allergy Asthma Immunol

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. 2024 Jun 17:S1081-1206(24)00363-6.

Adoption and Implementation of Maintenance and Reliever Therapy for Adults with Moderate to Severe Asthma

[Sandra E Zaeh](#)¹, [Zoe E Zimmerman](#)², [Michelle N Eakin](#)³, [Geoffrey Chupp](#)²

Affiliations expand

- PMID: 38897404
- DOI: [10.1016/j.anai.2024.06.011](https://doi.org/10.1016/j.anai.2024.06.011)

Abstract

Background: The use of single combination inhaled corticosteroid (ICS) and long-acting bronchodilator for maintenance and relief (MART) significantly reduces asthma exacerbations and has been incorporated into asthma guidelines since December 2020, but there is limited data regarding the implementation of this approach to asthma management.

Objective: Determine how often MART was prescribed to patients with moderate to severe asthma being seen at subspecialty pulmonary and allergy practices at an academic health care system, and the patient and clinician characteristics associated with the use of MART.

Methods: We conducted a retrospective cross-sectional study of the EMR of an academic health care system in the Northeastern US between January 2021 and October 2023. Patient demographic and clinician data was collected, and MART recommendation was confirmed by chart review. We assessed the relationships between patient demographics, clinician characteristics, and MART recommendation.

Results: Of 2,016 patients reviewed, 293 (14.5%) were recommended MART, with 255 (87%) concurrently prescribed short acting bronchodilators. Patients on ICS/formoterol at baseline were significantly more likely to be recommended MART, while older patients and those on Medicare were significantly less likely to be recommended MART. Twenty-two (44%) of 50 clinicians did not recommend MART ever and only three clinicians recommended MART to 30-60% of their patients. Clinicians who were part of the asthma group and those with less than 16 years in practice were significantly more likely to recommend MART.

Conclusion: Among academic subspecialty clinicians, there has been limited implementation of MART, with a small number of clinicians adopting MART routinely and over 40% of clinicians not recommending it.

Keywords: adoption; asthma; guideline-based management; implementation; maintenance and reliever therapy.

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Conflict of interest statement

Declaration of competing interest ME and ZZ have no conflicts of interest. SZ has received consulting feeds from AstraZeneca. G.C. has received speaker and consultancy fees from Amgen, AstraZeneca, Boehringer Ingelheim, Genentech, GlaxoSmithKline, Novartis, Regeneron Pharmaceuticals, Sanofi Genzyme, and Teva Pharmaceuticals.

SUPPLEMENTARY INFO

Grants and fundingexpand

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ERJ Open Res

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. 2024 Jun 17;10(3):00748-2023.

doi: 10.1183/23120541.00748-2023. eCollection 2024 May.

[The treatable traits of asthma in pregnancy: a clinical audit](#)

[Katarzyna Duszyk](#)¹, [Vanessa Marie McDonald](#)^{1,2}, [Dennis Thomas](#)¹, [Kelly Steel](#)¹, [Peter Gerard Gibson](#)^{1,2}

Affiliations expand

- PMID: 38887677
- PMCID: [PMC11181053](#)
- DOI: [10.1183/23120541.00748-2023](#)

Abstract

Rationale: Poor asthma control in pregnancy is associated with adverse perinatal outcomes. Treatable traits improve patient outcomes but the pattern and prevalence of treatable traits in pregnant women with asthma is unknown. Whether treatable traits in pregnant women with asthma can be identified *via* a virtual care consult is also unknown. The objective of the present study was to assess the prevalence of treatable traits in pregnant women with asthma using a virtual model of care.

Methods: Pregnant women with asthma (n=196) underwent an assessment by an asthma nurse educator and a respiratory physician *via* telehealth. In this clinical audit, 16 treatable traits were assessed including two traits in the pulmonary domain, five traits in the behavioural/risk factors domain and nine traits in the extrapulmonary domain.

Results: Pregnant women with asthma had a mean±sd of 7.5±2.0 treatable traits per person including 1.0±0.7 treatable traits per person in the pulmonary domain, 3.5±1.56 in the extrapulmonary domain and 2±0.9 in the risk factor/behavioural domain. Treatable traits in the behavioural/risk factor domain were most prevalent and these included limited asthma knowledge (96%), inadequate inhaler technique (84%) and no written asthma action plan (80%). On average 3.8±1.24 interventions per person were delivered for a mean±sd of 7.5±2.0 treatable traits per person.

Conclusion: Virtual antenatal asthma care is a feasible approach for assessing treatable traits in pregnant women with mild asthma. Pregnant women with asthma exhibit multiple management issues. Virtual models of care might increase asthma in pregnancy service uptake and acceptability.

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Conflict of interest statement

Conflict of interest: K. Duszyk declares no competing interests. Conflict of interest: V.M. McDonald declares research grants or contracts from GlaxoSmithKline; and payment or honoraria from GlaxoSmithKline, AstraZeneca, Boehringer Ingelheim and Chiesi, all in the 36 months prior to manuscript submission. Conflict of interest: D. Thomas declares research grants or contracts from GlaxoSmithKline in the 36 months prior to manuscript submission. Conflict of interest: K. Steel declares no competing interests. Conflict of interest: P.G. Gibson declares research grants or contracts from GlaxoSmithKline and AstraZeneca; and payment or honoraria from GlaxoSmithKline, AstraZeneca, Chiesi and Novartis, all in the 36 months prior to manuscript submission.

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- [2 figures](#)

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Clin Exp Allergy

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. 2024 Jun 17.

doi: 10.1111/cea.14525. Online ahead of print.

[Fractional Exhaled Nitric Oxide Identifies Worse Outcomes in Asthmatics With Mucus Plugging and Bronchial Wall Thickening](#)

[Rory Chan](#)¹, [Chary Duraikannu](#)², [Mohamed Jaushal Thouseef](#)², [Brian Lipworth](#)¹

Affiliations expand

- PMID: 38886976
- DOI: [10.1111/cea.14525](https://doi.org/10.1111/cea.14525)

No abstract available

Keywords: asthma; bronchial wall thickness; exacerbation; fractional exhaled nitric oxide; mucus plug.

- [7 references](#)

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23

J Med Econ

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. 2024 Jun 17:1-13.

doi: 10.1080/13696998.2024.2368987. Online ahead of print.

[Initiating immunoglobulin replacement therapy helps reduce severe infections and shifts healthcare resource utilization to outpatient services among US patients with inborn errors of immunity](#)

[Faisal Riaz](#)¹, [Kandavadivu Umashankar](#)², [Elizabeth Hoit Marchlewicz](#)³, [Kui Zhang](#)³, [Nikhil Khandelwal](#)¹, [Marie Sanchirico](#)¹

Affiliations expand

- PMID: 38885115
- DOI: [10.1080/13696998.2024.2368987](https://doi.org/10.1080/13696998.2024.2368987)

Free article

Abstract

Aims: Patients with inborn errors of immunity (IEI) are predisposed to severe recurrent/chronic infections, and often require hospitalization, resulting in substantial burden to patients/healthcare systems. While immunoglobulin replacement therapies (IgRTs) are the standard first-line treatment for most forms of IEI, limited real-world data exist regarding clinical characteristics and treatment costs for patients with IEI initiating such treatment. This retrospective analysis examined infection and treatment characteristics in US patients with IEI initiating IgRT with immune globulin infusion (human), 10% (IG10%). Healthcare resource utilization (HCRU) and associated costs before and after treatment initiation were compared. Additionally, the impact of COVID-19 on infection diagnoses was evaluated. **Methods:** Patients with IEI initiating IG10% between July 2012-August 2019 were selected from Merative® MarketScan® Databases using diagnosis/prescription codes. Patients were followed 6 months before and after first IG10% claim date. Demographic and clinical characteristics were described. Treatment characteristics and HCRU before and after IG10% initiation were compared. Infection diagnoses during 2020 and 2019 (March-December) were compared. **Results:** The study included 1,497 patients with IEI diagnoses (mean age = 43.4 years) initiating IG10%, with frequently reported comorbidities like asthma (32.1%). Following IG10% initiation, fewer severe infection diagnoses (11.6% vs 19.9%), fewer infection-related inpatient (10.8% vs 19.5%) and outpatient services (71.6% vs 79.9%), and lower infection-related total healthcare costs (\$7,849 vs \$13,995; $P < 0.001$)-driven by lower inpatient costs (\$2,746 vs \$9,900)-were observed than before. Fewer patients had infection diagnoses during COVID-19 (22.8%) than the prior year (31.2%). **Conclusion:** Patients with IEI are susceptible to severe infections leading to high disease burden and treatment costs. Following IG10% initiation, we observed fewer infections, lower infection-related treatment costs, and shift in care (inpatient to outpatient), leading to significant cost savings. Among patients with IEI, 27% fewer infection diagnoses were observed during the early COVID-19 lockdown period than the prior year.

Keywords: COVID-19; I; I1; I10; I15; Inborn errors of immunity; healthcare resource utilization; immunoglobulin replacement therapy; infection rates.

Plain language summary

Some people are born with inborn errors of immunity, or IEI. This study included 1,497 people with IEI who recently started taking a drug called immunoglobulin therapy. Before taking this drug, the participants got infections easily, were hospitalized often, and had to take other costly medicines. After starting this drug, they had fewer infections and could be treated at the doctor's office. They had fewer infections during the COVID-19 pandemic than before the pandemic.

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24

J Asthma



. 2024 Jun 17:1-18.

doi: 10.1080/02770903.2024.2370012. Online ahead of print.

[Evaluation of Multiple-Flows Exhaled Nitric Oxide and Its Clinical Significance in Severe Asthmatic Patients Treated with Biologics: A Prospective Real-Life Study](#)

[Tommaso Pianigiani](#)¹, [Simona Luzzi](#)¹, [Akter Dilroba](#)¹, [Martina Meocci](#)¹, [Elisa Salvadori](#)¹, [Lorenzo Alderighi](#)¹, [Laura Bergantini](#)¹, [Miriana d'Alessandro](#)¹, [Piersante Sestini](#)¹, [Elena Bargagli](#)¹, [Paolo Cameli](#)¹

Affiliations expand

- PMID: 38884564

- DOI: [10.1080/02770903.2024.2370012](https://doi.org/10.1080/02770903.2024.2370012)

Abstract

Background: Specific biomarkers, such as eosinophilia in peripheral blood or fractional exhaled nitric oxide (FeNO), can guide us in the choice of biologic therapy, allowing a more personalized approach. Although there are multiple evidences in the literature about the role of FeNO as a predictor of response to different biologic treatments, there are no data on the relationship between FeNO changes and clinical response to the four biologic drugs currently in use.

Objective: To evaluate and to compare the expression of multiple-flows FeNO parameters in a cohort of patients with SA before and during the treatment with biologics to evaluate the performance of these biomarkers in predicting the achievement of clinical remission.

Methods: We prospectively enrolled 50 patients with severe asthma eligible for biologic therapy. Patients underwent clinical and functional monitoring at baseline (T0) and after 1, 6, and 12 months of treatment (T1, T6, T12), including multiple flows FeNO assessment.

Results: A statistically significant reduction of FeNO50 values and J'awNO was observed only in benralizumab and dupilumab subgroups. Among biomarkers, the reduction of FeNO 50 values at T1 was associated with a higher probability of achieving clinical remission at T12 ($p = 0.003$), which was also confirmed by ROC curve analysis (AUC 0.758, $p = 0.002$; sensitivity 60% and specificity 74% for a reduction of 16 ppb).

Conclusion: These data confirm the potential of this biomarker in predicting clinical response to biologic treatment in patients with severe asthma in order to guide clinical decisions and evaluate a shift to other biologic therapy.

Keywords: benralizumab; biologic; biomarker; dupilumab; mepolizumab; nitric oxide; omalizumab; severe asthma.

FULL TEXT LINKS

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. 2024 Jun 16:1-11.

doi: 10.1080/14656566.2024.2366991. Online ahead of print.

[Asthma management with triple ICS/LABA/LAMA combination to reduce the risk of exacerbation: an umbrella review compliant with the PRIOR statement](#)

[Rossella Laitano](#)¹, [Luigino Calzetta](#)², [Matteo Matino](#)¹, [Elena Pistocchini](#)¹, [Paola Rogliani](#)¹

Affiliations expand

- PMID: 38864834
- DOI: [10.1080/14656566.2024.2366991](https://doi.org/10.1080/14656566.2024.2366991)

Abstract

Introduction: According to Global Initiative for Asthma (GINA) guidelines, long-acting muscarinic antagonists (LAMAs) should be considered as add-on therapy in patients with asthma that remains uncontrolled, despite treatment with medium-dose (MD) or high-dose (HD) inhaled corticosteroids (ICS)/long-acting β_2 -agonist (LABA) combinations. In patients ≥ 18 years, LAMA may be added in triple combination with an ICS and a LABA. To date, the precise efficacy of triple ICS/LABA/LAMA combination remains uncertain concerning the impact on exacerbation risk in patients with uncontrolled asthma. Therefore, an umbrella review was performed to systematically summarize available data on the effect of triple ICS/LABA/LAMA combination on the risk of asthma exacerbation.

Methods: An umbrella review has been performed according to the PRIOR statement.

Results: The overall results obtained from 5 systematic reviews and meta-analyses suggest that triple ICS/LABA/LAMA combination reduces the risk of asthma exacerbation. HD-ICS showed a greater effect particularly in reducing severe asthma exacerbation, especially in patients with evidence of type 2 inflammation biomarkers.

Conclusions: The findings of this umbrella review suggest an optimization of ICS dose in triple ICS/LABA/LAMA combination, based on the severity of exacerbation and type 2 biomarkers expression.

Keywords: Asthma; exacerbation; triple combination; type 2 biomarkers; umbrella review.

SUPPLEMENTARY INFO

Publication types expand

FULL TEXT LINKS

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

1

J Allergy Clin Immunol Pract

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. 2024 Jun 20:S2213-2198(24)00645-7.

doi: 10.1016/j.jaip.2024.06.022. Online ahead of print.

[Risk of Asthma and Allergies in Children Delivered by Cesarean Section: A Comprehensive Systematic Review](#)

[Xiaowu Liu](#)¹, [Jieyi Zhou](#)², [Jianrong Chen](#)³, [Ling Li](#)⁴, [Lixia Yuan](#)⁵, [Shuqing Li](#)⁶, [Xin Sun](#)⁷, [Xu Zhou](#)⁸

Affiliations expand

- PMID: 38908434

- DOI: [10.1016/j.jaip.2024.06.022](https://doi.org/10.1016/j.jaip.2024.06.022)

Abstract

Background: It is currently unclear whether cesarean section increases the risk of allergic diseases in offspring.

Objective: To investigate the association between cesarean section and the risk of allergic diseases in offspring.

Methods: We searched PubMed, Embase, and the Cochrane Library for relevant studies up to October 12, 2023. Observational studies comparing the risk of allergic diseases in offspring delivered by cesarean section versus those delivered vaginally were included. Most-adjusted estimates from individual studies were synthesized by meta-analysis.

Results: A total of 113 studies were included, 70 of which had a low risk of bias. Compared with offspring delivered vaginally, offspring delivered by cesarean section had significantly greater risks of asthma (odds ratio [OR] 1.20, 95% CI 1.16 to 1.25), allergic rhinitis/conjunctivitis (OR 1.15, CI 1.09 to 1.22), atopic dermatitis/eczema (OR 1.08, CI 1.04 to 1.13), food allergies (OR 1.35, CI 1.18 to 1.54), and allergic sensitization (OR 1.19, CI 1.10 to 1.28). Cesarean section did not significantly increase urticaria risk. Sensitivity analyses including only studies with a low risk of bias, adjusted estimates, prospective data collection, large sample sizes, or outcomes from medical records generally supported these findings. Offspring age, study region latitude, economy type, and cesarean section rate accounted for some of the clinical heterogeneity. No data on allergic purpura were found.

Conclusion: Most-adjusted estimates suggest that cesarean section is associated with increased risks of asthma, allergic rhinitis/conjunctivitis, atopic dermatitis/eczema, food allergies, and allergic sensitization in offspring. The impact of cesarean section on urticaria and purpura remains uncertain.

Keywords: allergic diseases; cesarean section; meta-analysis; offspring; systematic review.

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Int Arch Allergy Immunol



. 2024 Jun 20:1-24.

doi: 10.1159/000539382. Online ahead of print.

The Association between Migration and Prevalence of Allergic Diseases: A Systematic Review and Meta-Analysis

[Qi Yi Ambrose Wong](#)^{1,2}, [Fook Tim Chew](#)^{1,2,3}

Affiliations expand

- PMID: 38901406
- DOI: [10.1159/000539382](https://doi.org/10.1159/000539382)

Abstract

Introduction: Allergic diseases remain of concern due to their increasing prevalence worldwide. Intrinsic and environmental risk factors have been implicated in the pathogenesis of allergic disease. Among the possible risk factors, migration has been associated with the manifestation of allergic diseases. We aimed to consolidate the existing evidence, review the hypotheses for the relationship between environmental factors and allergic disease, and provide a direction for future work.

Methods: This systematic review and meta-analysis complied with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The Web of Science database was searched in September 2023 to retrieve publications investigating the relationship between allergic rhinitis (AR), atopic dermatitis (AD), or asthma and the following factors: (i) migrant status (i.e., migrants vs. natives) or (ii) duration since migration among migrants. Risk of bias was assessed using the JBI critical appraisal tool. Details and findings from the included studies were also summarized and meta-analyses were conducted where appropriate.

Results: Fifty studies encompassing an estimated 3,755,248 individuals were reviewed. Articles investigated asthma (n = 46), AR (n = 16), and AD (n = 14). A variety of migration-related factors were also studied: movement of individuals across regions (n = 40), duration since immigration (n = 12), age at immigration (n = 9), and acculturation (n = 2). Migration status was not significantly associated with AD (pooled odds ratio [pOR] = 0.68, 95% confidence interval (CI) = 0.31, 1.49). Although AR prevalence was lower among immigrants than natives (pOR = 0.58, 95% CI = 0.45, 0.74), immigrants who had resided at least 10 years in the destination country had a higher risk of AR than immigrants with a duration of residence of less than 10 years (pOR = 8.36, 95% CI = 4.15, 16.81). Being an immigrant was also associated with a decreased risk of asthma (pOR = 0.56, 95% CI = 0.44, 0.72). Among immigrants, residing in the host country for at least 10 years was associated with increased asthma manifestation (pOR = 1.85, 95% CI = 1.25, 2.73). Immigrants who migrated aged 5 and below did not exhibit a significantly higher likelihood of asthma than migrants who immigrated older than 5 years (pOR = 1.01, 95% CI = 0.68, 1.50).

Conclusion: This review was limited by the primarily cross-sectional nature of the included studies. Objective diagnoses of allergic disease, such as using the spirometry of bronchodilator reversibility test for asthma rather than questionnaire responses, could add to the reliability of the outcomes. Furthermore, immigrant groups were mostly nonspecific, with little distinction between their country of origin. Overall, migration appears to be a protective factor for allergic diseases, but the protection subsides over time and the prevalence of allergic diseases among the immigrant group approaches that of the host population.

Keywords: Allergic rhinitis; Asthma; Atopic dermatitis; Epidemiology; Migration.

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Arch Dis Child

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. 2024 Jun 19;109(7):596-597.

doi: 10.1136/archdischild-2023-326280.

My experience with allergic rhinitis

[Christy Wing Man Leung](#)¹

Affiliations expand

- PMID: 38267079
- DOI: [10.1136/archdischild-2023-326280](https://doi.org/10.1136/archdischild-2023-326280)

No abstract available

Keywords: Allergy and Immunology; Paediatrics.

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

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Review



The Combination of Allergen Immunotherapy and Biologics for Inhalant Allergies: Exploring the Synergy

[Bianca Olivieri](#)¹, [Fatma Esra Günaydin](#)², [Jonathan Corren](#)³, [Gianenrico Senna](#)⁴, [Stephen R Durham](#)⁵

Affiliations expand

- PMID: 38897405
- DOI: [10.1016/j.anai.2024.06.016](https://doi.org/10.1016/j.anai.2024.06.016)

Abstract

The development of monoclonal antibodies that selectively target IgE and type 2 immunity has opened new possibilities in the treatment of allergies. Although they have been used mainly as single therapies that have shown efficacy in the management of asthma and other T2-mediated diseases, there is a growing interest in using these monoclonal antibodies in combination with allergen immunotherapy (AIT). AIT has transformed the treatment of allergic diseases by aiming to modify the underlying immune response to allergens rather than just providing temporary symptom relief. Despite the proven efficacy and safety of AIT, unmet needs call for further research and innovation. Combination strategies involving biologics and AIT exhibit potential in improving short-term efficacy, reducing adverse events, and increasing immunological tolerance. Anti-IgE emerges as the most promising therapeutic strategy, not only enhancing AIT's safety and tolerability but also providing additional evidence of efficacy compared to AIT alone. Anti-IL-4 receptor offers a reduction in side effects and an improved immunological profile when combined with AIT, however its impact on short-term efficacy appears limited. The combination of cat dander subcutaneous immunotherapy with anti-TSLP was synergistic with enhanced efficacy and altered immune responses that persisted for one year after discontinuation

compared to AIT alone. Long-term studies are needed to evaluate the sustained benefits and safety profiles of combination strategies.

Keywords: Dupilumab; IL-4; IgE; Omalizumab; TSLP; Tezepelumab; allergen; allergic rhinitis; biologics; cat dander; grass pollen; immunotherapy.

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Conflict of interest statement

Declaration of competing interest BO received an honorarium for a lecture from Bruschettini. FEG declares no conflicts of interests. JC received grants and personal fees from AstraZeneca, Genentech and Vectura, and has received grants from Optinose, Regeneron, Novartis, Pulmatrix, Sanofi and Teva Pharmaceuticals. GS declares grants for advisory boards, participation to meetings and lectures from AstraZeneca, GlaxoSmithKline and Sanofi. SD is a member of the Immune Tolerance Network Steering Committee, NIAID, NIH, USA, and an External Adviser for the CAUSE Committee, NIAID, NIH, USA. He declares grants from Revelo, ANGANY Inc., and the Immune Tolerance Network, NIAID, NIH, USA; consulting fees from ALK Abello, Revelo, and ANGANY Inc.; honoraria for lectures from ALK Abello, Abbott Labs, Torii, and Pneumo Update GmbH;

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J Asthma

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. 2024 Jun 17:1-9.

doi: 10.1080/02770903.2024.2370002. Online ahead of print.

Montelukast treatment response according to eosinophil-derived neurotoxin level in children with allergic rhinitis

[YongJu Lee](#)¹, [Hyo-Sun Ma](#)², [Zak Callaway](#)^{2,3}, [Chang-Keun Kim](#)²

Affiliations expand

- PMID: 38884630
- DOI: [10.1080/02770903.2024.2370002](https://doi.org/10.1080/02770903.2024.2370002)

Abstract

Eosinophil-derived neurotoxin (EDN) is an important biomarker of eosinophilic inflammation. This study evaluated Montelukast treatment response according to EDN concentration in children with perennial allergic rhinitis (PAR). Fifty-two children with PAR were recruited and took a combination of Montelukast (5mg) and Levocetirizine (5mg) "Mont/Levo Group" or only Montelukast (5mg) "Mont Group" for 4 weeks. All caregivers were instructed to record rhinitis symptoms for 4 weeks. EDN was measured before and after treatment. Daytime nasal symptom scores (DNSS) significantly decreased in both the Mont/Levo ($P = 0.0001$; $n = 20$) and Mont Group ($P < 0.0001$; $n = 20$), but there were no significant differences between the two groups. EDN concentration also significantly decreased after treatment in both groups ($P < 0.0001$ and $P < 0.001$, respectively). For secondary analysis, children with a high initial EDN concentration ($EDN \geq 53$ ng/mL) were placed in the "High EDN Group", while those with a lower initial EDN concentration ($EDN < 53$ ng/mL) were put in the "Low EDN Group". Both groups experienced significant reductions in DNSS after either treatment regimen ($P < 0.0001$ and $P = 0.0027$, respectively) but the High EDN Group had greater reductions. EDN concentrations in the High EDN Group decreased significantly from either treatment ($P < 0.0001$). We found that children with AR and a high serum EDN concentration may respond well to Montelukast treatment. A therapeutic strategy using EDN concentrations in patients with AR to evaluate therapeutic response may help improve quality of care.

Keywords: Levocetirizine; allergy; asthma; biomarker; eosinophil-derived neurotoxin; eosinophilic inflammation; perennial allergic rhinitis.

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Review

Chem Res Toxicol



. 2024 Jun 17;37(6):850-872.

doi: 10.1021/acs.chemrestox.4c00062. Epub 2024 Jun 4.

Protein Haptenation and Its Role in Allergy

[Maja Aleksic](#)¹, [Xiaoli Meng](#)²

Affiliations expand

- PMID: 38834188
- PMCID: [PMC11187640](#)
- DOI: [10.1021/acs.chemrestox.4c00062](#)

Abstract

Humans are exposed to numerous electrophilic chemicals either as medicines, in the workplace, in nature, or through use of many common cosmetic and household products. Covalent modification of human proteins by such chemicals, or protein haptenation, is a common occurrence in cells and may result in generation of antigenic species, leading to

development of hypersensitivity reactions. Ranging in severity of symptoms from local cutaneous reactions and rhinitis to potentially life-threatening anaphylaxis and severe hypersensitivity reactions such as Stephen-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN), all these reactions have the same Molecular Initiating Event (MIE), i.e. haptentation. However, not all individuals who are exposed to electrophilic chemicals develop symptoms of hypersensitivity. In the present review, we examine common chemistry behind the haptentation reactions leading to formation of neoantigens. We explore simple reactions involving single molecule additions to a nucleophilic side chain of proteins and complex reactions involving multiple electrophilic centers on a single molecule or involving more than one electrophilic molecule as well as the generation of reactive molecules from the interaction with cellular detoxification mechanisms. Besides generation of antigenic species and enabling activation of the immune system, we explore additional events which result directly from the presence of electrophilic chemicals in cells, including activation of key defense mechanisms and immediate consequences of those reactions, and explore their potential effects. We discuss the factors that work in concert with haptentation leading to the development of hypersensitivity reactions and those that may act to prevent it from developing. We also review the potential harnessing of the specificity of haptentation in the design of potent covalent therapeutic inhibitors.

Conflict of interest statement

The authors declare no competing financial interest.

- [259 references](#)
- [8 figures](#)

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS



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

1

Clin Pharmacokinet

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. 2024 Jun 21.

P2X3 Receptor Antagonist Eliapixant in Phase I Clinical Trials: Safety and Inter-ethnic Comparison of Pharmacokinetics in Healthy Chinese and Japanese Participants

[Xuening Li](#)¹, [Miwa Haranaka](#)², [Hui Li](#)¹, [Pei Liu](#)³, [Huijun Chen](#)⁴, [Stefan Klein](#)⁵, [Stefanie Reif](#)⁵, [Klaus Francke](#)⁵, [Christian Friedrich](#)⁵, [Kazuhito Okumura](#)⁶

Affiliations expand

- PMID: 38907175
- DOI: [10.1007/s40262-024-01387-y](https://doi.org/10.1007/s40262-024-01387-y)

Abstract

Background: Afferent neuronal hypersensitization via P2X3 receptor signaling has been implicated as a driver of several disorders, including refractory chronic cough, endometriosis, diabetic neuropathic pain, and overactive bladder. Eliapixant, a selective P2X3 receptor antagonist, has been in clinical development for all four disorders.

Objective: This paper describes pharmacokinetic (PK) and safety data from two phase I studies of eliapixant in healthy Japanese and Chinese participants and compares those data within the two populations and with previous multiple dose data from Caucasian participants.

Methods: Two separate phase I, single-center, randomized, placebo-controlled studies were conducted with healthy male participants. The Japanese study was single-blind and the Chinese study was double-blind. Eliapixant was administered as an oral amorphous solid dispersion immediate-release tablet in strengths of 25 mg, 75 mg, and 150 mg. PK characteristics after a single dose (SD) and at steady state (multiple dose [MD], twice daily), adverse events (AEs), and tolerability were evaluated. A post hoc comparison of PK characteristics after SD of eliapixant in Japanese and Chinese participants, and after MD of eliapixant in Japanese, Chinese, and Caucasian participants, was performed.

Results: Overall, 36/39 participants enrolled in the Japanese/Chinese studies, respectively (mean [standard deviation] age 25.4 [6.5] and 26.7 [5.0] years, respectively). After SD

administration, maximum plasma concentration (C_{max}) was higher among Japanese than Chinese participants in the 25 mg and 75 mg dose groups, but comparable in the 150 mg dose group. The area under the concentration-time curve (AUC) was comparable between Japanese and Chinese participants in the 25 mg and 75 mg dose groups, but lower among Japanese participants in the 150 mg group. Half-lives after SD and MD administration were also comparable in Japanese and Chinese participants. The post hoc analysis included 26 Japanese, 30 Chinese, and 50 Caucasian participants. Comparable exposure ($C_{max,md}$ and $AUC[0-12]_{md}$) was observed after MD administration of eliapixant in Chinese and/or Japanese compared with Caucasian participants (geometric mean inter-ethnic ratios close to 1). The trough plasma concentration after eliapixant 150 mg MD, which was assumed to be relevant to eliapixant efficacy, was comparable across all ethnicity groups. Most AEs reported in the Japanese (eliapixant 75 mg SD, $n = 2$; eliapixant 150 mg MD, $n = 2$) and Chinese participants (eliapixant 25 mg SD, $n = 7$; eliapixant 75 mg SD, $n = 6$; eliapixant 150 mg SD, $n = 7$; eliapixant 150 mg MD, $n = 9$; placebo SD, $n = 5$; placebo MD, $n = 1$) were of mild intensity. Higher incidences of AEs in the Chinese population were likely due to differing standards of AE reporting between investigators.

Conclusion: Eliapixant was well tolerated by Japanese and Chinese participants. The inter-ethnic evaluation demonstrated similar PK characteristics across Japanese, Chinese, and Caucasian participants.

Registration: ClinicalTrials.gov identifier numbers: [NCT04265781](#) and [NCT04802343](#).

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- [23 references](#)

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[Review](#)



. 2024 Jun 21.

doi: 10.1007/s11882-024-01155-9. Online ahead of print.

Managing Symptoms of Systemic Sclerosis for the Allergist-Immunologist

[Mehreen Elahee](#)¹, [Robyn T Domsic](#)²

Affiliations expand

- PMID: 38904933
- DOI: [10.1007/s11882-024-01155-9](https://doi.org/10.1007/s11882-024-01155-9)

Abstract

Purpose of review: Systemic sclerosis (SSc) is a chronic, multisystem, autoimmune disease characterized by fibrosis, vasculopathy and immune system dysregulation. We provide a comprehensive review of features of systemic sclerosis that can potentially present to the allergist.

Recent findings: A thorough understanding of the management options is crucial for clinicians involved in the care of patients with SSc to optimize clinical outcomes. Management of systemic sclerosis has drastically changed in the last decade and continues to evolve. This review provides an overview of management strategies for the various symptoms including skin, upper and lower airway, gastrointestinal and vascular manifestations. Institution of treatment early in the disease, including referral to rheumatology or specialized scleroderma centers, can help to both prevent and manage disease complications, and improve patient quality-of-life. While the landscape of systemic sclerosis management has evolved, we continue to recognize that there is still a need for better biomarkers and targeted therapies.

Keywords: Cough; Dyspnea; Interstitial Lung disease; Pruritus; Scleroderma; Systemic sclerosis.

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Review

Drugs

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. 2024 Jun 21.

doi: 10.1007/s40265-024-02047-y. Online ahead of print.

[Drugs Targeting Cough Receptors: New Therapeutic Options in Refractory or Unexplained Chronic Cough](#)

[Laurent Guilleminault](#)^{1,2}, [Stanislas Grassin-Delyle](#)^{3,4}, [Stuart B Mazzone](#)⁵

Affiliations [expand](#)

- PMID: 38904926

- DOI: [10.1007/s40265-024-02047-y](https://doi.org/10.1007/s40265-024-02047-y)

Abstract

Refractory chronic cough is a disabling disease with very limited therapeutic options. A better understanding of cough pathophysiology has led to the development of emerging drugs targeting cough receptors. Recent strides have illuminated novel therapeutic avenues, notably centred on modulating transient receptor potential (TRP) channels, purinergic receptors, and neurokinin receptors. By modulating these receptors, the goal is to intervene in the sensory pathways that trigger cough reflexes, thereby providing relief without compromising vital protective mechanisms. These innovative pharmacotherapies hold promise for improvement of refractory chronic cough by offering improved efficacy and potentially mitigating adverse effects associated with current recommended treatments. A deeper comprehension of their precise mechanisms of action and clinical viability is imperative for optimising therapeutic interventions and elevating patient care standards in respiratory health. This review delineates the evolving landscape of drug development in this domain, emphasising the significance of these advancements in reshaping the paradigm of cough management.

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BMC Pulm Med

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. 2024 Jun 20;24(1):288.

Prevalence, clinical characteristics, and disease burden of chronic cough in Italy: a cross-sectional study

[Raffaele Antonelli Incalzi](#)¹, [Antonio De Vincentis](#)¹, [Vicky W Li](#)², [Ashley Martin](#)², [Danilo Di Laura](#)³, [Eileen Fonseca](#)⁴, [Helen Ding](#)⁵

Affiliations expand

- PMID: 38902654
- PMCID: [PMC11191261](#)
- DOI: [10.1186/s12890-024-03095-6](#)

Abstract

Background: Chronic cough has been associated with reduced health-related quality of life, negative impacts on sleep, work, and other daily activities, and increased use of health care resources. Little is known about the prevalence of chronic cough in Italy. In the present study we sought to estimate the prevalence of chronic cough in Italy, describe sociodemographic and clinical characteristics associated with chronic cough, and characterize the impact of chronic cough on overall health and wellness, work and other daily activities, and health care resource use.

Methods: We conducted a cross-sectional study to collect sociodemographic and health-related data from Italian residents who participated in the 2020 National Health and Wellness Survey (N = 10,026). To assess the characteristics and burden of chronic cough, adults who indicated that they had experienced chronic cough during the prior 12 months were compared with propensity score-matched controls without chronic cough.

Results: The estimated weighted lifetime and 12-month prevalence of chronic cough were estimated as 9.2% and 6.3%, respectively. Compared with matched controls, respondents with chronic cough had significantly lower measures of overall physical and mental health ($P < .001$ for both comparisons), and significantly higher rates of anxiety, depression, and sleep disorders ($P < .001$ for all comparisons). Chronic cough was significantly associated with higher rates of impairment of work and other activities ($P < .001$ for all comparisons) in the past 7 days, any-cause emergency department visits and hospitalizations in the prior

6 months ($P < .001$ for both comparisons), and more visits to general and specialist health care providers ($P < .001$ for both comparisons) in the prior 6 months.

Conclusions: In Italy, chronic cough affects an estimated 3.3 million adults annually and represents a significant burden to individuals and the health care system.

Take home message: Little is known about the prevalence of chronic cough in Italy. We found that, in Italy chronic cough represents a significant burden to individuals and the health care system, affecting an estimated 3.3 million adults annually.

Keywords: Chronic cough; Chronic disease; Cough; Health surveys; Italy.

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Conflict of interest statement

Raffaele Antonelli Incalzi and Antonio De Vincentis have no conflicts of interest to report. Vicky W. Li is an employee of Oracle Life Sciences, Seattle, WA, USA. Ashley Martin was an employee of Oracle Life Sciences, Seattle, WA, USA at the time of this work. Danilo Di Laura is an employee of MSD Italia. Eileen Fonseca and Helen Ding are employees of Merck Sharp & LLC, a subsidiary of Merck & Co., Inc., Rahway, NJ, USA and shareholders in Merck & Co., Inc., Rahway, NJ, USA.

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- [1 figure](#)

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Ann Palliat Med

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. 2024 Jun 17:apm-24-11.

doi: 10.21037/apm-24-11. Online ahead of print.

Provision of palliative care for people with chronic obstructive pulmonary disease: a narrative review

[Amy Pascoe](#)¹, [Catherine Buchan](#)¹, [Natasha Smallwood](#)²

Affiliations expand

- PMID: 38902988
- DOI: [10.21037/apm-24-11](https://doi.org/10.21037/apm-24-11)

Abstract

Background and objective: Chronic obstructive pulmonary disease (COPD) is characterized by persistent and progressive airflow restriction and is the third leading cause of death and disability, globally. People with severe COPD generally experience long-term functional decline punctuated by periods of acute exacerbation. Symptom burden can be severe and debilitating, and typically includes breathlessness, cough, fatigue, pain, anxiety, depression, and overall reduced quality of life. Understanding current palliative care needs and provisions in this group is an essential step to expanding access in future.

Methods: A narrative review of specialist and generalist (primary) palliative care provisions for people with COPD, with an emphasis on breathlessness symptom management. This paper aims to examine the current landscape of palliative care provision and highlight barriers and facilitators to palliative care access for people with severe COPD.

Key content and findings: People living with severe COPD, as well as the people who care for them, are routinely under-serviced in best-practice end-of-life care, despite having symptom burden that is comparable to that of people with advanced cancer. Barriers to palliative care in this group include lack of specialist palliative care resources, uncertainty surrounding prognostication, and poor recognition of need from both patients and clinicians. Routine early palliative care involvement, including integration of specialist palliative care into respiratory services and upskilling of other healthcare providers to adopt palliative care principals within usual care (primary palliative care), have been shown to improve outcomes indicative of high-quality end-of-life care in this group, including

symptom control, place of death, and legal preparations. Ongoing integration of specialist palliative care and professional education for generalist and non-palliative care specialist healthcare providers in the recognition and management of unmet palliative care needs is required to increase capacity beyond traditional specialist palliative care models.

Conclusions: Despite high level of symptom burden, many people with COPD miss out on palliative care. Expanding capacity of traditional specialist palliative care by upskilling generalist healthcare providers and integrating specialist palliative care into existing respiratory services is necessary to improve access for people with COPD.

Keywords: Palliative care; breathlessness; chronic obstructive pulmonary disease (COPD); health services; respiratory disease.

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IEEE J Biomed Health Inform

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. 2024 Jun 17:PP.

doi: 10.1109/JBHI.2024.3415479. Online ahead of print.

[Development of a miniaturized mechanoacoustic sensor for continuous, objective cough detection, characterization and physiologic monitoring in children with cystic fibrosis](#)

[Andreas Tzavelis](#), [John Palla](#), [Radhika Mathur](#), [Brittany Bedford](#), [Yung-Hsuan Wu](#), [Jacob Trueb](#), [Hee Sup Shin](#), [Hany Arafa](#), [Hyoyoung Jeong](#), [Wei Ouyang](#), [Jay Young Kwak](#), [Jennifer Chiang](#), [Sydney Schulz](#), [Tina M Carter](#), [Vittobai Rangaraj](#), [Aggelos K Katsaggelos](#), [Susanna A McColley](#), [John A Rogers](#)

- PMID: 38885105
- DOI: [10.1109/JBHI.2024.3415479](https://doi.org/10.1109/JBHI.2024.3415479)

Abstract

Cough is an important symptom in children with acute and chronic respiratory disease. Daily cough is common in Cystic Fibrosis (CF) and increased cough is a symptom of pulmonary exacerbation. To date, cough assessment is primarily subjective in clinical practice and research. Attempts to develop objective, automatic cough counting tools have faced reliability issues in noisy environments and practical barriers limiting long-term use. This single-center pilot study evaluated usability, acceptability and performance of a mechanoacoustic sensor (MAS), previously used for cough classification in adults, in 36 children with CF over brief and multi-day periods in four cohorts. Children whose health was at baseline and who had symptoms of pulmonary exacerbation were included. We trained, validated, and deployed custom deep learning algorithms for accurate cough detection and classification from other vocalization or artifacts with an overall area under the receiver-operator characteristic curve (AUROC) of 0.96 and average precision (AP) of 0.93. Child and parent feedback led to a redesign of the MAS towards a smaller, more discreet device acceptable for daily use in children. Additional improvements optimized power efficiency and data management. The MAS's ability to objectively measure cough and other physiologic signals across clinic, hospital, and home settings is demonstrated, particularly aided by an AUROC of 0.97 and AP of 0.96 for motion artifact rejection. Examples of cough frequency and physiologic parameter correlations with participant-reported outcomes and clinical measurements for individual patients are presented. The MAS is a promising tool in objective longitudinal evaluation of cough in children with CF.

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Expert Opin Ther Pat

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. 2024 Jun 17:1-18.

doi: 10.1080/13543776.2024.2364798. Online ahead of print.

[An updated patent review of TRPA1 antagonists \(2020 - present\)](#)

[Rosa Maria Vitale](#), [Luciano de Petrocellis](#)¹, [Pietro Amodeo](#)

Affiliations expand

- PMID: 38847054
- DOI: [10.1080/13543776.2024.2364798](https://doi.org/10.1080/13543776.2024.2364798)

Abstract

Introduction: TRPA1 is a nonselective calcium channel, a member of the transient receptor potential (TRP) superfamily, also referred to as the 'irritant' receptor, being activated by pungent and noxious exogenous chemicals as well as by endogenous algogenic stimuli, to elicit pain, itching, and inflammatory conditions. For this reason, it is considered an attractive therapeutic target to treat a wide range of diseases including acute and chronic pain, itching, and inflammatory airway diseases.

Areas covered: The present review covers patents on TRPA1 antagonists disclosed from 2020 to present, falling in the following main classes: i) novel therapeutic applications for known or already disclosed antagonists, ii) identification and characterization of TRPA1 antagonists from natural sources, and iii) synthesis and evaluation of novel compounds.

Expert opinion: Despite the limited number of TRPA1 antagonists in clinical trials, there is an ever-growing interest on this receptor-channel as therapeutic target, mainly due to the relevant outcomes from basic research, which unveiled novel physio-pathological mechanisms where TRPA1 is believed to play a pivotal role, for example the Alzheimer's disease or ocular diseases, expanding the panel of potential therapeutic applications for TRPA1 modulators.

Keywords: Alzheimer's disease; TRPA1; Transient receptor potential ankyrin 1; antagonists; cough; itch; ocular diseases; pain.

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

1

Editorial

N Z Med J

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. 2024 Jun 21;137(1597):9-12.

doi: 10.26635/6965.e1597.

[Thoracic Society of Australia and New Zealand position statement on chronic suppurative lung disease and bronchiectasis in children, adolescents and adults: what is new and relevant to Aotearoa New Zealand?](#)

[Paul Dawkins](#)¹, [Betty Poot](#)², [Sarah Mooney](#)³

Affiliations [expand](#)

- PMID: 38901044

- DOI: [10.26635/6965.e1597](https://doi.org/10.26635/6965.e1597)

No abstract available

Conflict of interest statement

Nil.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

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BMJ Open Respir Res

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. 2024 Jun 18;11(1):e002391.

doi: 10.1136/bmjresp-2024-002391.

National trend in the prevalence and mortality of COPD in South Korea from 2008 to 2017

[Sun-Hyung Kim](#) ^{#1,2}, [Jong Eun Park](#) ^{#3}, [Bumhee Yang](#) ^{1,2}, [So Young Kim](#) ^{3,4}, [Yeon Yong Kim](#) ^{5,6}, [Jong Hyock Park](#) ^{7,4,8}

Affiliations expand

- PMID: 38897613

- PMID: [PMC11191794](#)
- DOI: [10.1136/bmjresp-2024-002391](#)

Abstract

Background: Existing studies on chronic obstructive pulmonary disease (COPD) in Korea lack full population coverage, relying on small sample sizes. Therefore, this study aims to investigate the prevalence and mortality of COPD in the entire Korean population.

Methods: This serial cross-sectional study used national databases, linking the National Health Information Database (2008-2017) with Causes of Death Statistics. Identification of individuals with COPD used diagnostic codes (International Classification of Diseases-10: J41-J44) or a history of COPD-related hospitalisation, focusing on adults aged 40 and above. Prevalence and mortality rates, calculated for 2008-2017, encompassed both crude and age-standardised and sex-standardised measures. A multivariate Poisson regression model estimated the association between COPD and all-cause and cause-specific mortality, presenting incidence rate ratios (IRRs) and 95% CIs, using data from the year 2017.

Results: Age-adjusted COPD prevalence exhibited a notable increase from 2008 (7.9%) to 2017 (16.7%) in both sexes. The prevalences of diabetes mellitus, hypertension, dyslipidaemia, ischaemic heart disease, cancer, osteoporosis and tuberculosis were higher in the COPD group than in the group without COPD (p for all <0.001). The incidence of stroke and myocardial infarction (p for all <0.001) and overall mortality were higher in the COPD group (adjusted IRR 1.23, 95% CI 1.22 to 1.24, $p<0.001$). In particular, incidence rate and risk of mortality due to lung cancer were higher than that of those without COPD compared with other cancer types (adjusted IRR 2.51, 95% CI 2.42 to 2.60, $p<0.001$). It was significantly higher the incidence rate and risk of mortality among group with COPD than those without COPD in lower respiratory disease (adjusted IRR 16.62, 95% CI 15.07 to 18.33, $p<0.001$), asthma (adjusted IRR 6.41, 95% CI 5.47 to 7.51, $p<0.001$) and bronchiectasis (adjusted IRR 11.77, 95% CI 7.59 to 18.26, $p<0.001$), respectively.

Discussion: Our study showed that the prevalence of COPD is gradually increasing from 9.2% in 2009 to 16.7% in 2018. Furthermore, in overall (all-cause) mortality, it was significantly higher in group with COPD than in group without COPD. The mortality rate of group with COPD was much higher than the overall mortality rate but is gradually decreasing.

Keywords: COPD epidemiology; Chronic Obstructive; Pulmonary Disease.

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Conflict of interest statement

Competing interests: None declared.

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

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Review

Expert Rev Respir Med

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. 2024 Jun 18.

doi: 10.1080/17476348.2024.2369716. Online ahead of print.

[The impact of smoking on bronchiectasis and its comorbidities](#)

[David de la Rosa-Carrillo](#)¹, [José Ignacio de Granda-Orive](#)^{2,3}, [Layla Diab Cáceres](#)², [Fernando Gutiérrez Pereyra](#)¹, [Beatriz Raboso Moreno](#)⁴, [Miguel-Ángel Martínez-García](#)⁵, [Guillermo Suárez-Cuartin](#)⁶

Affiliations expand

- PMID: 38888096

- DOI: [10.1080/17476348.2024.2369716](https://doi.org/10.1080/17476348.2024.2369716)

Abstract

Introduction: Bronchiectasis, characterized by irreversible bronchial dilatation, is a growing global health concern with significant morbidity. This review delves into the intricate relationship between smoking and bronchiectasis, examining its epidemiology, pathophysiology, clinical manifestations, and therapeutic approaches. Our comprehensive literature search on PubMed utilized MESH terms including 'smoking,' 'smoking cessation,' 'bronchiectasis,' and 'comorbidities' to gather relevant studies.

Areas covered: This review emphasizes the role of smoking in bronchiectasis development and exacerbation by compromising airways and immune function. Interconnected comorbidities, including chronic obstructive pulmonary disease, asthma, and gastroesophageal reflux disease, create a detrimental cycle affecting patient outcomes. Despite limited studies on smoking cessation in bronchiectasis, the review stresses its importance. Advocating for tailored cessation programs, interventions like drainage, bronchodilators, and targeted antibiotics are crucial to disrupting the inflammatory-infection-widening cycle.

Expert opinion: The importance of smoking cessation in bronchiectasis management is paramount due to its extensive negative impact on related conditions. Proactive cessation programs utilizing technology and targeted education for high-risk groups aim to reduce smoking's impact on disease progression and related comorbidities. In conclusion, a personalized approach centered on smoking cessation is deemed vital for bronchiectasis, aiming to improve outcomes and enhance patients' quality of life in the face of this complex respiratory condition.

Keywords: Bronchiectasis; COPD; bronchial inflammation; comorbidities; smoking; smoking cessation.

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Review

ERJ Open Res

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. 2024 Jun 17;10(3):00850-2023.

doi: 10.1183/23120541.00850-2023. eCollection 2024 May.

Mortality prevention as the centre of COPD management

[Andriana I Papaioannou](#)¹, [Georgios Hillas](#)², [Stelios Loukides](#)³, [Theodoros Vassilakopoulos](#)⁴

Affiliations expand

- PMID: 38887682
- PMCID: [PMC11181087](#)
- DOI: [10.1183/23120541.00850-2023](#)

Abstract

COPD is a major healthcare problem and cause of mortality worldwide. COPD patients at increased mortality risk are those who are more symptomatic, have lower lung function and lower diffusing capacity of the lung for carbon monoxide, decreased exercise capacity, belong to the emphysematous phenotype and those who have concomitant bronchiectasis. Mortality risk seems to be greater in patients who experience COPD exacerbations and in those who suffer from concomitant cardiovascular and/or metabolic diseases. To predict the risk of death in COPD patients, several composite scores have been created using different parameters. In previous years, large studies (also called mega-trials) have evaluated the efficacy of different therapies on COPD mortality, but until recently only nonpharmaceutical interventions have proven to be effective. However,

recent studies on fixed combinations of triple therapy (long-acting β -agonists, long-acting muscarinic antagonists and inhaled corticosteroids) have provided encouraging results, showing for the first time a reduction in mortality compared to dual therapies. The aim of the present review is to summarise available data regarding mortality risk in COPD patients and to describe pharmacological therapies that have shown effectiveness in reducing mortality.

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Conflict of interest statement

Conflict of interest: A.I. Papaioannou has received honoraria from AstraZeneca, GlaxoSmithKlein, Novartis, Boehringer Ingelheim, Chiesi and ELPEN. Conflict of interest: G. Hillas has received honoraria from AstraZeneca, Boehringer Ingelheim, Chiesi, CSL Behring, ELPEN, Innovis, GSK, Menarini, Novartis, Pharmathen, Sanofi and UCB. Conflict of interest: S. Loukides has received honoraria for presentations and consultancy fees from AstraZeneca, Boehringer Ingelheim, Chiesi, ELPEN, GSK, Menarini, Novartis, Sanofi and Specialty Therapeutics. Conflict of interest: T. Vassilakopoulos has received honoraria from AstraZeneca, Boehringer Ingelheim, Chiesi, ELPEN, Innovis, GSK, Menarini, Novartis and Pharmathen.

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Editorial

Lung

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. 2024 Jun 17.

doi: 10.1007/s00408-024-00716-z. Online ahead of print.

Type 2 Biomarkers and Bronchiectasis

[Robert M Rutherford](#)¹, [Micheal J Harrison](#)²

Affiliations expand

- PMID: 38884648
- DOI: [10.1007/s00408-024-00716-z](https://doi.org/10.1007/s00408-024-00716-z)

No abstract available

- [8 references](#)

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Lung

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. 2024 Jun 17.

doi: 10.1007/s00408-024-00707-0. Online ahead of print.

Type 2 Biomarkers and Their Clinical Implications in Bronchiectasis: A Prospective Cohort Study

[Yen-Fu Chen](#)^{1,2,3}, [Hsin-Han Hou](#)⁴, [Ning Chien](#)⁵, [Kai-Zen Lu](#)⁶, [Ying-Yin Chen](#)⁷, [Zheng-Ci Hung](#)⁶, [Jung-Yien Chien](#)^{2,6}, [Hao-Chien Wang](#)^{6,8}, [Chong-Jen Yu](#)^{9,10,11}

Affiliations expand

- PMID: 38884647
- DOI: [10.1007/s00408-024-00707-0](https://doi.org/10.1007/s00408-024-00707-0)

Abstract

Purpose: Bronchiectasis is predominantly marked by neutrophilic inflammation. The relevance of type 2 biomarkers in disease severity and exacerbation risk is poorly understood. This study explores the clinical significance of these biomarkers in bronchiectasis patients.

Methods: In a cross-sectional cohort study, bronchiectasis patients, excluding those with asthma or allergic bronchopulmonary aspergillosis, underwent clinical and radiological evaluations. Bronchoalveolar lavage samples were analyzed for cytokines and microbiology. Blood eosinophil count (BEC), serum total immunoglobulin E (IgE), and fractional exhaled nitric oxide (FeNO) were measured during stable disease states. Positive type 2 biomarkers were defined by established thresholds for BEC, total IgE, and FeNO.

Results: Among 130 patients, 15.3% demonstrated $\text{BEC} \geq 300$ cells/ μL , 26.1% showed elevated $\text{FeNO} \geq 25$ ppb, and 36.9% had high serum total IgE ≥ 75 kU/L. Approximately 60% had at least one positive type 2 biomarker. The impact on clinical characteristics and disease severity was variable, highlighting BEC and FeNO as reflective of different facets of disease severity and exacerbation risk. The combination of low BEC with high FeNO appeared to indicate a lower risk of exacerbation. However, *Pseudomonas aeruginosa* colonization and a high neutrophil-to-lymphocyte ratio ($\text{NLR} \geq 3.0$) were identified as more significant predictors of exacerbation frequency, independent of type 2 biomarker presence.

Conclusions: Our study underscores the distinct roles of type 2 biomarkers, highlighting BEC and FeNO, in bronchiectasis for assessing disease severity and predicting exacerbation risk. It advocates for a multi-biomarker strategy, incorporating these with microbiological and clinical assessments, for comprehensive patient management.

Keywords: Pseudomonas aeruginosa; Blood eosinophil count; Bronchiectasis; Fractional exhaled nitric oxide; Immunoglobulin E; Type 2 biomarkers.

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