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

1

BMC Pulm Med

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. 2025 Dec 3;25(1):552.

doi: 10.1186/s12890-025-03952-y.

Evening administration of long-acting muscarinic antagonists in COPD - a randomized controlled trial

Pradeesh Sivapalan [#1,2], Valdemar Rømer [#3], Alexander Jordan [3], Niklas Dyrby Johansen [4,5], Manan Pareek [5,6], Daniel Modin [4,5], Alexander G Mathioudakis [7,8], Jørgen Vestbo [9], Anna Kubel Vognsen [3], Josefin Eklöf [3], John R Hurst [10], Tobias Wirenfeldt Klausen [3], Tor Biering-Sørensen [#4,5,11,12], Jens-Ulrik Staehr Jensen [#3,11]

Affiliations Expand

- **PMID: 41340061**

- **DOI: 10.1186/s12890-025-03952-y**

Abstract

Background: Night-time parasympathetic activation, diminished effect of long-acting muscarinic antagonists (LAMA) closer to end of the dosing period, and

frequent exacerbations in chronic obstructive pulmonary disease (COPD) during night suggests greater benefits of evening administration of once-daily LAMA.

Methods: We electronically invited 172,852 Danish COPD patients who used once-daily LAMA (including dual/triple therapy) to participate in a randomized controlled, digital platform, pragmatic trial comparing evening with morning LAMA administration. Of these, 10,011 patients consented and were randomized. National health registries were the main source for follow-up data. The primary endpoint was a composite of COPD exacerbations requiring hospitalization or all-cause death within one year. Secondary endpoints were moderate COPD exacerbations, all-cause hospitalization, intensive-care admission, non-invasive ventilation, all-cause mortality, and consumption of short-acting beta-2-agonists.

Results: A total of 10,011 COPD patients were randomized to evening (n=4,983) or morning (n=5,028) LAMA administration. We had complete (100%) follow-up on the primary and secondary outcomes. In the evening-LAMA group, 245 persons (5%) met the primary outcome compared with 249 persons (5%) in the morning-LAMA group (P=0.93). There were 61 (1%) intensive-care admissions in the evening-LAMA group versus 95 (2%) in the morning-LAMA group (P=0.046). Other secondary outcomes were neutral. Administration-time adherence was low in the evening-LAMA group being 73% at 6 months and 66% at 12 months among survey responders (65% and 63%, respectively).

Conclusions: Evening administration of LAMA did not reduce the incidence of COPD exacerbations requiring hospitalization or all-cause death. Poor adherence may have contributed to the negative study outcome. The trial serves as a proof-of-concept for decentralized digital trials.

Trial registration: Clinicaltrials.gov: NCT05563675, registered 28/09/2022 https://clinicaltrials.gov/study/NCT0556367 .

Keywords: COPD; Circadian variation; Long-acting muscarinic antagonists (LAMA); Randomized controlled trial.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The study was conducted in accordance with the principles of the Declaration of Helsinki. As this was a pragmatic, register-based RCT in which no changes were made to medication type or dose - only the timing of administration - a waiver was obtained from the regional re-search ethics committee. The waiver is included as a supplementary file.

- **33 references**

Supplementary info

Associated dataExpand

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2

Editorial

Ann Am Thorac Soc

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. 2025 Dec;22(12):1827-1828.

doi: 10.1513/AnnalsATS.202510-1079ED.

Neutrophil-to-Lymphocyte Ratio in Chronic Obstructive Pulmonary Disease: A Simple Marker with Complex Implications

W Blake LeMaster [1]

Affiliations Expand

- PMID: 41324346

- DOI: 10.1513/AnnalsATS.202510-1079ED

No abstract available

Comment on

- Neutrophil-to-Lymphocyte Ratio as a Biomarker in Clinically Stable Chronic Obstructive Pulmonary Disease: SPIROMICS Cohort.

Hoesterey DT, Dang H, Markovic D, Buhr RG, Tashkin DP, Barr RG, Belperio JA, Bowler RP, Bleecker ER, Couper DJ, Criner GJ, Cooper CB, Doerschuk CM, Dransfield MT, Drummond MB, Fawzy A, Freeman CM, Han MK, Hansel NN, Hastie AT, Hoffman EA, Huang YJ, Kaner RJ, Kanner RE, Kim V, Krishnan JA, Martinez FJ, O'Neal WK, Ortega VE, Paine R 3rd, Shrivastav AK, Wells JM, Woodruff PG, Curtis JL, Barjaktarevic I.Ann Am Thorac Soc. 2025 Dec;22(12):1881-1890. doi: 10.1513/AnnalsATS.202412-1265OC.PMID: 40920896

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AnnalsATS Final Version

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3

Clin Respir J

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. 2025 Dec;19(12):e70141.

doi: 10.1111/crj.70141.

Extracellular Matrix and Endothelial Activation Markers in the Bronchial and Pulmonary Arteries in COPD

Raquel Annoni [1 2], Jôse Mára de Brito [1 3], Salvatore Battaglia [4], Natália de Souza Xavier Costa [1], Ligia Braga Lopes Couceiro [1], Renata Calciolari Rossi [5], Marisa Dolhnikoff [1], Pieter S Hiemstra [6], Klaus F Rabe [7], Peter J Sterk [8], Thais Mauad [1]

Affiliations Expand

- PMID: 41316930

- PMCID: PMC12663766

- DOI: 10.1111/crj.70141

Abstract

in English, Portuguese

Background: Vascular alterations contribute significantly to the chronic obstructive pulmonary disease (COPD) pathophysiology. Thirty-nine percent of patients with COPD develop pulmonary hypertension, especially patients with the severe form of the disease. Cigarette-induced endothelial dysfunction is important in the pathogenesis of vascular alterations, even in the mild forms of the disease. This study investigates extracellular matrix (ECM) remodelling and endothelial activation in pulmonary (PMA) and bronchial muscular arteries (BMA) from non-smokers (NS), nonobstructed smokers (NOS) and patients with mild/moderate COPD.

Methods: Lung tissue samples from 44 patients undergoing lung resection were analysed. Morphometric parameters, ECM components (collagens, fibronectin, elastic fibres, tenascin-C and versican) and endothelial markers (VCAM-1, ICAM-1 and endothelin-1) were quantified in BMA and PMA using immunohistochemistry and morphometric analysis. Group differences and correlations with clinical parameters were assessed.

Results: COPD patients showed increased intimal thickness and fibronectin deposition in PMA, and larger adventitial areas in BMA compared to NS. NOS exhibited higher VCAM-1 expression in BMA and increased elastic fibre content in PMA. In COPD, elastic fibres and type-III collagen negatively correlated with smoking history (pack-years), while fibronectin positively correlated with age.

VCAM-1 expression in BMA correlated negatively with lung function (FEV_1 and FEV_1/FVC).

Conclusions: This study demonstrates for the first time ECM remodelling and endothelial activation in bronchial arteries of smokers and patients with COPD. Fibronectin emerges as a key ECM component in arterial remodelling in mild-moderate COPD. Understanding vascular changes may provide new insights into the regulation of bronchial circulation and the development of pulmonary hypertension in COPD.

Keywords: bronchial artery; chronic obstructive pulmonary disease; endothelial activation; extracellular matrix; fibronectin; pulmonary artery; vascular remodelling.

Conflict of interest statement

The authors declare no conflicts of interest.

- **29 references**
- **3 figures**

Supplementary info

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Lab Anim (NY)

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. 2025 Dec;54(12):338.

doi: 10.1038/s41684-025-01654-w.

Role of hypercapnia in COPD pathology

Alexandra Le Bras [1]

Affiliations Expand

- **PMID: 41298878**

- DOI: 10.1038/s41684-025-01654-w

No abstract available

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5

Ann Med

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. 2025 Dec;57(1):2588285.

doi: 10.1080/07853890.2025.2588285. Epub 2025 Nov 21.

A machine-learning model to identify concurrent vascular disease in symptomatic patients with chronic obstructive pulmonary disease

Yufeng Gu [1], Ping Chen [2], Shuhong Wang [3]

Affiliations Expand

- PMID: 41269047
- PMCID: PMC12642907
- DOI: 10.1080/07853890.2025.2588285

Abstract

Aim/introduction: Chronic obstructive pulmonary disease (COPD) is a complex, heterogeneous syndrome often accompanied by vascular diseases that worsen prognosis and quality of life. This study aimed to develop a machine learning model to identify concurrent vascular diseases in symptomatic COPD patients.

Materials and methods: We retrospectively analyzed data from 6,274 COPD patients treated between July 2010 and July 2018. Patients were randomly split into training and validation sets (7:3). After feature selection using LASSO regression, eight machine learning algorithms-including Logistic Regression, Random Forest, Gradient Boosting, Support Vector Machine, Neural Network, Convolutional Neural Network, AdaBoost, and Stacked Generalization (Stacking)-were applied to develop

and validate predictive models. Performance was evaluated using AUC, calibration curves, and decision curve analysis (DCA).

Results: The Stacking model achieved the highest AUC (0.867; 95% CI: 0.852-0.882), with 79.4% accuracy, 74.9% sensitivity, and 84.0% specificity. It also demonstrated excellent calibration and, on DCA, provided the highest net clinical benefit within the threshold probability range of 0.1-0.5. At a 0.2 threshold, the model could prevent approximately 35% of unnecessary interventions compared to a "treat-all" approach, while identifying about 75% of high-risk patients relative to a "treat-none" strategy.

Conclusions: The Stacking machine-learning model showed superior performance in identifying concurrent vascular disease among symptomatic COPD patients, offering strong discriminative ability, calibration, and clinical utility. It may serve as an effective decision-support tool to optimize diagnostic evaluation in this high-risk subgroup.

Keywords: Machine-learning; chronic obstructive pulmonary disease; prediction model; retrospective study; vascular disease.

Conflict of interest statement

No potential conflict of interest was reported by the author(s).

- 34 references
- 4 figures

Supplementary info

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Review

Ann Med

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. 2025 Dec;57(1):2587931.

doi: 10.1080/07853890.2025.2587931. Epub 2025 Nov 19.

Chronic obstructive pulmonary disease (COPD) and autoimmune diseases: unravelling complex interactions

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Affiliations Expand

- PMID: 41257445
- PMCID: PMC12632235
- DOI: 10.1080/07853890.2025.2587931

Abstract

Background: Chronic obstructive pulmonary disease (COPD) is a global healthcare problem, characterized by a progressive and irreversible decline in lung function, primarily due to airflow limitation caused by inflammation and emphysema. While smoking is the main risk factor, systemic inflammation also plays a significant role in the development and progression of the disease, particularly in relation to autoimmune conditions.

Research question: This literature review provides an overview of current evidence regarding the underlying pathophysiological mechanisms that link autoimmune inflammatory processes to COPD. It also examines the clinical relevance of these associations, with a focus on potential diagnostic and therapeutic implications.

Methods: To ensure a comprehensive perspective, a broad literature search was conducted in PubMed and Embase in March 2025, using a wide range of search terms related to COPD and multiple autoimmune conditions. Relevant studies of any design were included if they provided valuable insights into the interplay between autoimmune processes and COPD, while non-English publications and commentaries were excluded.

Results: Studies suggest a potential association between COPD and autoimmune processes, with chronic systemic inflammation playing a central role. The evidence points to immune dysregulation as a contributing factor to both COPD progression and its connection to autoimmune conditions.

Conclusion: The complex interactions between COPD and autoimmune diseases require further investigation. Gaining a better understanding of these interactions may provide new insights into managing patients with concurrent pulmonary and autoimmune conditions, emphasizing a growing area of clinical research.

Keywords: COPD; Chronic obstructive pulmonary disease; autoimmune diseases; autoimmunity.

Conflict of interest statement

The authors report there are no competing interests to declare.

- 227 references
- 1 figure

Supplementary info

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7

Practice Guideline

Arch Bronconeumol

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. 2025 Dec;61(12):766-782.

doi: 10.1016/j.arbres.2025.10.008. Epub 2025 Oct 14.

Update 2025 of the Spanish COPD Guidelines (GesEPOC): Pharmacological Treatment of Stable COPD

[Article in English, Spanish]

Marc Miravitlles [1], Myriam Calle [2], Jesús Molina [3], Pere Almagro [4], José-Tomás Gómez [5], Juan Antonio Trigueros [6], Efraín Sánchez-Angarita [7], Borja G Cosío [8], Ciro Casanova [9], José Luis López-Campos [10], Juan Antonio Riesco [11], Pere Simonet [12], David Rigau [13], Ainel Iskakova [13], Mariano Pastor Sanz [14], Patricia Sobradillo [15], Bernardino Alcázar-Navarrete [16], Noé Garin [17], Juan José Soler-Cataluña [18]

Affiliations Expand

- PMID: 41198528

- DOI: 10.1016/j.arbres.2025.10.008

Abstract

The Spanish COPD Guidelines (GesEPOC) were first published in 2012, and since then, several updates have incorporated new evidence regarding the diagnosis and treatment of COPD. GesEPOC is a clinical practice guideline developed with the collaboration of the scientific societies involved in COPD management and the Spanish Patients' Forum. Its recommendations are based on an evaluation of the evidence using the GRADE methodology and on a narrative description of the evidence in those areas where application of this methodology is not feasible. This article summarizes the updated recommendations on the pharmacological treatment of stable COPD, derived from the development of 12 PICO questions. The COPD treatment process comprises five stages: (1) diagnosis; (2) risk stratification; (3) characterization; (4) initiation and continuation of treatment; and (5) follow-up. For inhaled treatment selection, high-risk patients are classified into three phenotypes: non-exacerbator, eosinophilic exacerbator, and non-eosinophilic exacerbator. Treatable traits include general aspects, applicable to all patients-such as smoking cessation and inhaler technique-and more specific conditions, mainly affecting severe patients, such as chronic hypoxemia or chronic bronchial infection. The cornerstone of COPD treatment is long-acting bronchodilators, either as monotherapy or in combination, depending on the patient's risk level. Eosinophilic exacerbators should receive inhaled corticosteroids, whereas non-eosinophilic exacerbators require a detailed evaluation to identify the most appropriate therapeutic option. GesEPOC 2025 also includes recommendations on inhaled corticosteroid withdrawal, the introduction of biologics, and the indication for alpha-1 antitrypsin therapy. GesEPOC 2025 represents a more individualized approach to COPD treatment, tailored to the clinical characteristics of patients and their level of risk or complexity.

Keywords: COPD; Control; Guidelines; Phenotypes; Treatment.

8

Lancet Respir Med

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. 2025 Dec;13(12):e59.

doi: 10.1016/S2213-2600(25)00368-6. Epub 2025 Oct 28.

FeNO or no FeNO in COPD?

Huib A M Kerstjens [1], Maarten van den Berge [2]

Affiliations Expand

- PMID: 41173012

- DOI: 10.1016/S2213-2600(25)00368-6

No abstract available

Conflict of interest statement

HAMK declares research grants from GSK, Novartis, and Boehringer Ingelheim; fees from Sanofi for making a podcast; and fees for an advisory board from Sanofi, Novartis, and AstraZeneca, all paid to his institution. MvdB has received funding from GSK, Novartis, Roche, Genentech, Chiesi, and Sanofi, all paid to his institution. HAMK and MvdB contributed equally to this correspondence: conceiving the reaction, drafting, and finalising the work.

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Ann Med

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. 2025 Dec;57(1):2579789.

doi: 10.1080/07853890.2025.2579789. Epub 2025 Oct 31.

Comparison of the predictive performance of Cumulative Illness Rating Scale, Charlson Comorbidity Index and COMCOLD Index for moderate-to-severe exacerbations in elderly subjects with chronic obstructive pulmonary disease

Edoardo Pirera [1], Domenico Di Raimondo [1], Lucio D'Anna [2], Riccardo De Rosa [1], Martina Profita [1], Sergio Ferrantelli [1], Davide Paolo Bernasconi [3], Antonino Tuttolomondo [1]

Affiliations Expand

- PMID: 41170896
- PMCID: PMC12581735
- DOI: 10.1080/07853890.2025.2579789

Abstract

Background and objective: Chronic Obstructive Pulmonary Disease (COPD) is frequently associated with multiple comorbidities that influence clinical outcomes. This study aimed to compare the predictive performance of the Cumulative Illness Rating Scale (CIRS) with the Charlson Comorbidity Index (CCI) and COMCOLD Index for moderate-to-severe COPD exacerbations.

Materials and methods: We conducted a prospective observational study involving 200 COPD patients followed for 52 weeks. CIRS indices (Total Score, Severity Index, Comorbidity Index), CCI, and COMCOLD were calculated at baseline. The primary outcome was time-to-first moderate-to-severe exacerbation. Cox regression analyses and time-dependent receiver operating characteristic curves were used to assess prognostic performance at 12, 24, and 52 weeks.

Results: During follow-up, 66 patients (33%) experienced at least one moderate-to-severe exacerbation. All CIRS indices demonstrated significant correlations with respiratory parameters and symptom burden. In crude models, CIRS indices were significantly associated with exacerbation risk (CIRS-TS: HR 1.11, 95%CI 1.06-1.16; CIRS-SI: HR 1.16, 95%CI 1.09-1.23; CIRS-CI: HR 1.37, 95%CI 1.20-1.56; all $p < 0.001$), maintaining significance after adjustment for clinical covariates. CIRS indices demonstrated superior discriminative performance compared to CCI and COMCOLD, with CIRS-SI achieving the highest time-dependent AUC values across all timepoints (0.704, 0.679, and 0.778 at 12, 24, and 52 weeks, respectively).

Conclusion: CIRS provides superior prognostic accuracy compared to established comorbidity indices in identifying COPD patients at increased risk of exacerbations. These findings highlight the clinical relevance of incorporating a comprehensive, severity-weighted comorbidity assessment in COPD management, supporting the concept of COPD as a complex, multisystem disorder requiring an integrated approach to care.

Keywords: CIRS; COMCOLD; COPD; Charlson Comorbidity Index; Comorbidity; Cumulative Illness Rating Scale; acute exacerbation of COPD.

Plain language summary

In elderly patients with COPD, CIRS provided superior prognostic accuracy for moderate-to-severe exacerbations compared with the Charlson Comorbidity Index

and COMCOLD;The prognostic advantage of CIRS likely derives from its comprehensive, severity-weighted assessment of multimorbidity across multiple organ systems;Incorporating multidimensional comorbidity evaluation, such as CIRS, into clinical practice may improve risk stratification and support more personalized COPD management.

Conflict of interest statement

No potential conflict of interest was reported by the author(s).

- 40 references

Supplementary info

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Health Expect

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. 2025 Dec;28(6):e70480.

doi: 10.1111/hex.70480.

Experiences of Home-Based Pulmonary Rehabilitation With mHealth and Centre-Based Pulmonary Rehabilitation in People With Chronic Obstructive Pulmonary Disease: A Qualitative Study

Wen Sun [1], Caixia Qiu [1], Shungui Xu [1]

Affiliations Expand

- PMID: 41164855

- PMCID: PMC12572817

- DOI: 10.1111/hex.70480

No abstract available

Conflict of interest statement

The authors declare no conflicts of interest.

- **3 references**

Supplementary info

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Review

Sleep Med Clin

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. 2025 Dec;20(4):489-498.

doi: 10.1016/j.jsmc.2025.07.009. Epub 2025 Sep 10.

Hypercapnic Chronic Obstructive Pulmonary Disease and Overlap Syndrome

Justin A Fiala [1], John M Coleman 3rd [2]

Affiliations Expand

- **PMID: 41136080**

- **DOI: 10.1016/j.jsmc.2025.07.009**

Abstract

The role of noninvasive ventilation (NIV) in hypercapnic chronic obstructive pulmonary disease (COPD) respiratory failure and overlap syndrome have been confusing over the last several years. In addition, if able to understand the timing and indications for NIV use, the clinical practice approach is riddled with hurdles to obtain in the United States. NIV for acute respiratory failure secondary to COPD exacerbation and NIV to prevent extubation failure in this patient population are not discussed here. Evidence for NIV in acute hospitalization is clearly accepted; however, bridging NIV from inpatient to home in hypercapnic COPD patients is a

topic of debate, and a challenge for providers who are not experts in this space. This article discusses the evidence, interventions, timing, and insurance guidelines to assist health care providers.

Keywords: BPAP; COPD; Home mechanical ventilation; Non-invasive ventilation; OSA; Overlap syndrome.

Conflict of interest statement

Disclosures John Coleman serves on an Advisory Board for ResMed, Inc.

Supplementary info

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Lancet Glob Health

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. 2025 Dec;13(12):e2013-e2026.

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Global, regional, and national sepsis incidence and mortality, 1990-2021: a systematic analysis

GBD 2021 Global Sepsis Collaborators

Collaborators, Affiliations Expand

- PMID: 41135560

- DOI: 10.1016/S2214-109X(25)00356-0

Free article

Abstract

Background: The global burden of sepsis, a life-threatening dysregulated host response to infection leading to organ dysfunction, remains challenging to quantify.

We aimed to comprehensively estimate the global, regional, and national burden of sepsis, including the impact of the COVID-19 pandemic and underlying causes of sepsis-related deaths with co-occurring infectious syndromes.

Methods: We used multiple cause-of-death, hospital, minimally invasive tissue sampling, and linked death certificate and hospital record data representing 149 million deaths, covering 4290 location-years with mortality estimates from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2021 to capture explicit and implicit sepsis cases and deaths. We estimated age-location-sex-specific fractions of sepsis-related deaths from 195 underlying causes of death and 22 infectious syndromes from 1990 to 2021 using binomial logistic regression models, and estimated sepsis-related deaths using GBD cause-specific mortality estimates. Using 250 million hospital admissions and 7·82 million deaths from hospital data, representing 1310 location-years, we modelled case fatality rates by use of binomial logistic regression, applied to sepsis death estimates to estimate sepsis incidence by age, location, and year.

Findings: In 2021, we estimated 166 million (95% uncertainty interval 135-201) sepsis cases and 21·4 million (20·3-22·5) all-cause sepsis-related deaths globally, representing 31·5% of total global deaths. Sepsis-related deaths decreased between 1990 and 2019, followed by a surge in 2020 and 2021. As of 2021, individuals aged 15 years and older experienced increases across incidence (230%) and mortality (26·3%) since 1990. Those aged 70 years and older had the highest sepsis-related mortality in 2021 (9·28 million [8·74-9·86] deaths). Sepsis-related deaths from infectious underlying causes decreased from 11·8 million (11·1-12·5) in 1990 to 8·34 million (7·72-9·01) in 2019, then increased by 86·4% to 15·5 million (14·7-16·4) in 2021. Sepsis-related mortality due to non-infectious underlying causes of death increased from 4·69 million (4·35-5·05) in 1990 to 5·81 million (5·40-6·25) in 2021; the leading non-infectious underlying causes of death with sepsis were stroke, chronic obstructive pulmonary disease, and cirrhosis. In 2021, bloodstream infections inclusive of HIV and malaria (3·08 million [2·83-3·35]) and lower respiratory infections inclusive of COVID-19 (11·33 million [1·20-1·47]) were the most prominent infectious syndromes complicating sepsis-related deaths from non-infectious underlying causes, representing a consistent trend since 1990.

Interpretation: The global burden of sepsis increased in 2020 and 2021, reversing progress from 1990. Sepsis incidence and mortality increased in people aged 15 years and older, especially those aged 70 years and older, and as a complication of non-infectious underlying causes of death such as stroke, primarily through bloodstream infections and lower respiratory infections. The global burden of sepsis is substantial, and sepsis is increasingly a complication of non-infectious causes of death.

Funding: Gates Foundation, Wellcome Trust, and Department of Health and Social Care using UK aid funding managed by the Fleming Fund.

Conflict of interest statement

Declaration of interests Q E S Adnani reports grants or contracts from the Scientific Excellence Research Grant from Universitas Padjadjaran, Bandung, Indonesia, with

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“Honey-based polyherbal syrup composition to treat air pollution-induced inflammation and preparation method thereof” (filed 202511035171), “Process for preparing a caffeine free, antioxidant and nutrient rich beverage” (filed 202511042794), “A system and method of reusable filters for anti-pollution mask” (published 202011003559), “A system and method for electricity generation through crop stubble by using microbial fuel cells” (published 202011008531), “A system for disposed personal protection equipment (PPE) into biofuel through pyrolysis and method” (published 202111005659), “A novel herbal pharmaceutical aid for formulation of gel and method thereof” (published 202111023333), “Herbal drug formulation for treating lung tissue degenerated by particulate matter exposure” (published 202311035276), “A method to transform cow dung into the wall paint by using natural materials and composition thereof” (filed 202311085452), “Biodegradable packaging composition and method of preparation thereof” (filed 202511017848); leadership or fiduciary roles in other board, society, committee, or advocacy groups as an Executive Council Member for the Indian Meteorological Society, Jaipur Chapter (India) and a Member Secretary for the DSTPURSE Program; outside the submitted work. B Venkatesh reports grants or contracts from the Investigator Grant from the National Health and Medical Research Council of Australia and research grants from Baxter, all payments made to the George Institute for Global Health, outside the submitted work. Y Yasufuku reports grants or contracts from Shionogi & Co. Ltd (employment expenses are paid from the joint research fund provided by this pharmaceutical company to The University of Osaka. The joint research with this pharmaceutical company is unrelated to the content of this GBD study). G Zamagni reports support for the present manuscript from the Italian Ministry of Health (Ricerca Corrente 34/2017) and payments made to the Institute for Maternal and Child Health IRCCS Burlo Garofolo. All other authors declare no competing interests.

Supplementary info

MeSH termsExpand

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Editorial

Am J Respir Crit Care Med

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. 2025 Dec;211(12):2231-2233.

doi: 10.1164/rccm.202508-1834ED.

From Web to Collapse: Small Airway Disease Trajectory in Chronic Obstructive Pulmonary Disease

Naoya Tanabe [1], Stijn E Verleden [2]

Affiliations Expand

- PMID: 41123881

- DOI: 10.1164/rccm.202508-1834ED

No abstract available

Comment on

- Distinct Morphological Types of Small Airway Obstructions in Smokers with Emphysema and End-Stage Chronic Obstructive Pulmonary Disease.

Geudens V, De Fays C, Willems L, Vermaut A, Aerts G, Kerckhof P, Kaes J, Hooft C, Jin X, Beeckmans H, Mohamady Y, Aversa L, Goos T, Vermant M, Gyselinck I, Verhaegen J, Van Slambrouck J, Aelbrecht C, Higham A, Coudyzer W, Cortesi EE, Vanstapel A, McDonough JE, Carlon MS, Quarck R, Boone MN, Dupont LJ, Weynand B, Pilette C, Everaerts S, Van Raemdonck DE, Ceulemans LJ, Hogg JC, Hackett TL, Vos R, Wuyts WA, Janssens W, Jacob J, Vanaudenaerde BM, Gayan-Ramirez G.Am J Respir Crit Care Med. 2025 Dec;211(12):2307-2317. doi: 10.1164/rccm.202410-2101OC.PMID: 40802822

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14

Review

Heart Fail Rev

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. 2025 Dec;30(6):1525-1538.

doi: 10.1007/s10741-025-10566-3. Epub 2025 Oct 7.

Heart failure and chronic obstructive pulmonary disease. A combination not to be underestimated

Damiano Magrì [1], Emiliano Fiori [2], Piergiuseppe Agostoni [3 4], Michele Correale [5], Massimo Piepoli [6], Savina Nodari [7], Matteo Beltrami [8], Stefania Paolillo [9], Pasquale Perrone Filardi [9], Alberto Palazzuoli [10]; Working Group on Heart Failure of the Italian Society of Cardiology

Affiliations Expand

- PMID: 41053405

- PMCID: PMC12618358

- DOI: 10.1007/s10741-025-10566-3

Abstract

Chronic obstructive pulmonary disease (COPD) and heart failure (HF) frequently coexist and interact through complex and bidirectional hemodynamic mechanisms that amplify symptoms' burden and complicate clinical management. The present review explores the impact of COPD across the HF spectrum, particularly in HF with preserved ejection fraction (HFpEF), where comorbidities, such as COPD, exert a dominant role in disease expression. COPD-induced hyperinflation reduces cardiac preload and increases right ventricular afterload, while HF-related congestion impairs pulmonary function and gas exchange, illustrating a tight cardiorespiratory coupling. Diagnostic challenges stem from overlapping symptoms and the limited specificity of biomarkers, such as natriuretic peptides, especially in HFpEF. Cardiopulmonary exercise testing (CPET) emerges as a valuable tool for distinguishing between cardiac and pulmonary limitations and guiding individualized treatment strategies. From a therapeutic standpoint, β1-selective blockers are not only safe in COPD patients but are pivotal in those with HF with reduced ejection fraction (HFrEF), where they have been demonstrated to improve survival and reduce both HF and COPD exacerbations. Concerns regarding bronchodilator safety in HF remain largely theoretical, with current evidence supporting their continued use when clinically indicated. Ultimately, optimal care for patients with coexisting COPD and HF requires a phenotype-specific approach, incorporating insights from pathophysiology, diagnostic innovation, and evidence-based pharmacotherapy to improve outcomes in this challenging patient population.

Keywords: Cardiopulmonary exercise test; Cardiopulmonary interaction; Heart failure; Lung disease.

Conflict of interest statement

Declarations. Competing interests: The authors declare no competing interests.

- **105 references**
- **5 figures**

Supplementary info

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Editorial

Am J Respir Crit Care Med

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. 2025 Dec;211(12):2234-2235.

doi: 10.1164/rccm.202507-1793ED.

Targeted Lung Denervation in Chronic Obstructive Pulmonary Disease: Threading the Needle of Safe Interventions to Help the Sickest

Yukiko Kunitomo [1], Nirupama Putcha [1]

Affiliations Expand

- **PMID: 41052462**

- **DOI: 10.1164/rccm.202507-1793ED**

No abstract available

Comment on

- **Randomized Sham-controlled Trial of Targeted Lung Denervation in Patients with Chronic Obstructive Pulmonary Disease (AIRFLOW-3).**

Shah PL, Slebos DJ, Sue R, Bhatt SP, Ghattas C, Strange C, Degano B, Valipour A, Eisenmann S, De Cardenas J, Marquette CH, Soto-Soto J, Sciurba FC, Conway F, Tonkin J, Tana A, Marchetti N, Hartman JE, Heluain V, Guibert N, Criner GJ.Am J Respir Crit Care Med. 2025 Dec;211(12):2318-2329. doi: 10.1164/rccm.202502-0404OC.PMID: 40920914 Clinical Trial.

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16

COPD

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. 2025 Dec;22(1):2567022.

doi: 10.1080/15412555.2025.2567022. Epub 2025 Oct 2.

Lung Volume Reduction Therapies in Patients with Emphysema: A Systematic Review and Network Meta-Analysis

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Affiliations Expand

- PMID: 41037331

- DOI: 10.1080/15412555.2025.2567022

Free article

Abstract

Background: Severe emphysema, a major chronic obstructive pulmonary disease (COPD) phenotype characterized by hyperinflation, is associated with significant morbidity and mortality. Lung volume reduction (LVR) therapies, including surgical (LVRS) and bronchoscopic techniques (e.g. endobronchial valves (EBVs) and coils (ECs)), aim to reduce hyperinflation and improve outcomes, but their comparative efficacy and safety are unclear.

Methods: This network meta-analysis compared LVR therapies. We systematically evaluated LVRS, EBV, EC, intrabronchial valves (IBV), sealants (ELS), vapor ablation (BVA), or airway bypass stents (ABS) in adults with severe emphysema. The primary outcomes were early and overall mortality. The secondary outcomes included lung function (FEV1, RV reduction), exercise capacity (6MWD), quality of life (SGRQ), and adverse events. Bayesian analysis using R/BUGSNet was used to assess their effects and rankings.

Results: Twenty-six RCTs (4418 patients) were included. No LVR therapy significantly reduced mortality compared with standard medical care (SMC) (early mortality, 1.6%; overall mortality, 10.9%; and highest rates of LVRS). Compared with SMC, LVRS and EBV significantly improved FEV1, RV reduction, and the 6MWD; LVRS consistently ranked most effectively. After excluding the impact of collateral ventilation in the subgroup analysis, EC significantly improved the SGRQ and 6MWD, and a reduction in residual volume and IBV improved the SGRQ. LVRS, EBV, and EC had significantly higher adverse event rates than SMC did.

Conclusions: While no LVR therapy improved survival over SMC, LVRS and some bronchoscopic techniques (EBV, EC) significantly enhanced lung function, exercise capacity, and quality of life in severe emphysema patients. LVRS offers the greatest efficacy benefits but carries the highest risks. Bronchoscopic options (EBV, EC) provide safer and more effective alternatives, particularly for symptoms and functional improvement. Careful patient selection on the basis of fissure status and emphysema pattern is paramount.

Keywords: Emphysema; complication; efficacy; lung volume reduction.

Plain language summary

This network meta-analysis provides a comprehensive assessment of surgical and bronchoscopic lung volume reduction therapies for severe emphysema. The key findings are as follows:Compared with standard medical care, no LVR therapy significantly reduced mortality.LVRS and EBV are the most effective interventions for improving lung function (FEV1, RV reduction), exercise capacity (6MWD), and health-related quality of life (SGRQ). LVRS offers the greatest magnitude of benefit but carries the highest degree of procedural risk.EC is an effective alternative, particularly for improving symptoms and exercise tolerance, and may be suitable for patients with homogeneous disease or incomplete fissures where valves are less effective. The IBV also showed a potential benefit in SGRQ for selected patients.Patient selection is critical. Fissure integrity is paramount for the efficacy of endobronchial valves (EBV, IBV). LVRS requires careful assessment of surgical risk and emphysema patterns.Bronchoscopic techniques (EBV, EC and IBV) present a significantly safer alternative to LVRS in terms of mortality risk, expanding treatment options for higher-risk patients.However, evidence for other bronchoscopic techniques (ELS, BVA and ABS) remains limited.

Supplementary info

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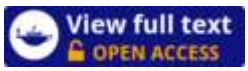

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Meta-Analysis

COPD

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. 2025 Dec;22(1):2564743.

doi: 10.1080/15412555.2025.2564743. Epub 2025 Oct 2.

Prevalence, Risk Factors, and Antibiotic Intervention of Lower Airway *Pseudomonas aeruginosa* Colonization in Patients with Stable Chronic Obstructive Pulmonary Disease: a Systematic Review and Meta-Analysis

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Affiliations Expand

- PMID: 41037326

- DOI: 10.1080/15412555.2025.2564743

Free article

Abstract

Background and objectives: Bacterial colonization or chronic infection occurs in the lower respiratory tract of patients with chronic obstructive pulmonary disease (COPD). Previous studies on Pseudomonas aeruginosa (PA) colonization in patients with stable COPD mainly focused on its impact on prognosis, such as leading to acute exacerbations and increased mortality. However, the prevalence of PA colonization remains unknown. Evidence-based medicine is lacking regarding the association of prior antibiotics and inhaled corticosteroids (ICSs) exposure with PA colonization, intervention with antibiotic therapy for acute exacerbations, and the effect of PA eradication. We conducted this systematic review and meta-analysis to investigate these issues and inform precise treatment and prevention.

Methods: We searched PubMed, Embase, Google Scholar, Cochrane, China National Knowledge Infrastructure (CNKI), and ClinicalTrials.gov for randomized controlled trials (RCTs) and observational studies. The primary outcome was prevalence. Secondary outcomes included previous antibiotic and ICS exposure, exacerbations after antibiotic therapy, and the eradication rate of PA with inhaled antibiotics (IAs).

Results: A total of 39 studies were included, comprising 32,753 cases. The pooled prevalence was 5.6% (95% CI 0.04-0.07). Previous exposure to antibiotics and ICSs was associated with increased PA colonization, with odds ratio (OR) values of (OR = 2.85, 95% CI 1.62-5.01) and (OR = 1.89, 95% CI 1.12-3.19), respectively. Exacerbations decreased within the next year after azithromycin treatment (standardized mean difference [SMD] = -0.43, 95% CI -0.77 to -0.10). The eradication rate of PA with IAs was 0.52 (95% CI 0.46-0.57), and IAs reduced exacerbations in the following year (SMD = -0.87, 95% CI -1.38 to -0.35).

Conclusion: The prevalence of PA colonization in stable COPD was approximately 5.6%. Prior exposure to antibiotics and ICSs increased the risk of PA colonization. Azithromycin therapy reduced exacerbations in PA colonized COPD patients. The eradication rate of PA within one year after IA therapy was about 52%, and exacerbations decreased.

Keywords: Pseudomonas aeruginosa; Stable COPD; antibiotics; colonization; eradication; prevalence.

18

Respirology

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. 2025 Dec;30(12):1124-1126.

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Hospital-At-Home for Respiratory Diseases-Opportunities and Challenges

Stephanie Q Ko [1 2 3], Adrian Kee [1 2]

Affiliations Expand

- **PMID: 41035150**
- **DOI: 10.1111/resp.70131**

No abstract available

Keywords: COPD; home care; hospital care; hospital-at-home; respiratory diseases.

- 15 references

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Cite

19

Pulm Ther

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. 2025 Dec;11(4):553-567.

doi: 10.1007/s41030-025-00318-x. Epub 2025 Sep 27.

Dyspnea in Chronic Obstructive Pulmonary Disease: Expert Assessment of Management in Clinical Practice

Nirupama Putcha [1], Diego J Maselli [2], Jessica Bon [3], Michael G Lester [4], M Bradley Drummond [5]

Affiliations Expand

- PMID: 41014472
- PMCID: PMC12623595
- DOI: 10.1007/s41030-025-00318-x

Abstract

Chronic obstructive pulmonary disease (COPD) is a multifaceted lung condition characterized by persistent airflow limitation that leads to chronic symptoms, including dyspnea, cough, and exacerbations. To date, a major focus for the assessment and management of COPD has been on mitigating exacerbations. However, dyspnea is the most common symptom of COPD and is responsible for substantial negative effects on patients' quality of life. Dyspnea is also a substantial contributor to the symptoms associated with acute exacerbations in COPD. Though a portion of the current recommendations for the assessment and management of COPD are dedicated to dyspnea treatment intervention strategies, there remains a need for improvement in communication between healthcare practitioners and their patients regarding the understanding of dyspnea and the implementation of key

nonpharmacologic and pharmacologic treatment options. This clinical commentary outlines practical considerations and recommendations for the real-world assessment and management of dyspnea in COPD, including underlying causes, patient and healthcare provider dialogue, measurement of severity, and management strategies.

Keywords: Chronic obstructive pulmonary disease; Dyspnea; Expert assessment; Management; Patient-reported outcomes; Real-world practice.

Plain language summary

Chronic obstructive pulmonary disease, or COPD, is a long-term disease of the lungs that can cause several symptoms, including cough, flare-ups (times when symptoms suddenly worsen, also known as exacerbations), and breathlessness (also referred to as dyspnea). Medications and other therapies for COPD mainly focus on reducing how often exacerbations happen or how bad they are. However, dyspnea is a major problem for patients with COPD, often making it difficult to live their everyday lives. Moreover, dyspnea is commonly seen in patients with COPD when they have an exacerbation. Although current recommendations for the management of COPD include strategies to help with dyspnea, patients may still need more information about their dyspnea and how to manage it. This could be due to several factors, including a disconnect in the dialogue patients have with their doctors regarding their experience of dyspnea. This article shares practical insights from respiratory doctors on how they help patients with COPD manage their dyspnea and provides an overview of the causes, measurement, and management of dyspnea.

Conflict of interest statement

Declarations. Conflict of Interest: Nirupama Putcha has served on advisory boards for Verona Pharma and AstraZeneca. Diego J. Maselli has served on consulting/advisory boards for GSK, AstraZeneca, Amgen, Sanofi/Regeneron, Insmed, and Verona Pharma; and has received speaker fees from GSK, AstraZeneca, Amgen, and Sanofi/Regeneron. Jessica Bon has received grant funding from the National Heart, Lung, and Blood Institute (NHLBI); has served on consulting/advisory boards for GSK, Sanofi/Regeneron, Verona Pharma, and Chiesi; and has received speaker fees from GSK and Sanofi/Regeneron. Michael G. Lester has served on consulting/advisory boards for Ryme Medical, Galvanize Therapeutics, and Verona Pharma. M. Bradley Drummond has served on consulting/advisory boards for GlaxoSmithKline, Boehringer Ingelheim, AstraZeneca, Verona, Genentech, Stratos Inc, Takeda, and Amgen and has received grant funding from National Institute of Health-NHLBI, Boehringer Ingelheim, Midmark, Teva and the American Lung Association. Ethical Approval: Given that this article is based on previously conducted studies and does not report any new research involving human participants or animals performed by any of the authors, there is no ethical compliance to declare.

- 90 references
- 1 figure

Full text links

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20

Observational Study

COPD

. 2025 Dec;22(1):2563218.

doi: 10.1080/15412555.2025.2563218. Epub 2025 Sep 26.

Resting Hyperinflation Predicts Incremental Shuttle Walk Distance in Chronic Obstructive Pulmonary Disease

Meera Srinivasan [1 2 3 4], David Touma [1 3], Kaj E C Blokland [1 3], Katrina O Tonga [2 3 5], David G Chapman [1 3 6], Gregory G King [1 2 3]

Affiliations Expand

- PMID: 40999915

- DOI: 10.1080/15412555.2025.2563218

Free article

Abstract

Rationale: The incremental shuttle walk test (ISWT) correlates closely with peak oxygen uptake in COPD and relates to important outcomes such as mortality, response to treatment and hospital readmission. Despite this, there is limited data on the physiological determinants of ISWT distance (ISWD) in COPD. Methods: In this exploratory, prospective observational study, spirometry, lung volumes, diffusion capacity (DLCO) and oscillometry were performed in patients with confirmed COPD. Patients then completed two ISWT with the results of the best test, measured by distanced walked taken. The determinants of ISWD and dyspnoea measured by BORG score were evaluated. Results: 25 COPD patients, mean (SD) age 71 (8.82) years, 48% female with a mean (SD) FEV1 Z-score -2.54 (0.83) were recruited. Median (IQR) ISWD was 350 (210-440) metres (mean (SD) 66.4 (27.9)% predicted distance). Most patients (85%) stopped due to inability to maintain walking speed with submaximal mean heart rate of 77.3 (10.1)% predicted and BORG dyspnoea score of 'severe' (median 5/10 (IQR 4-5.5)). Inspiratory capacity to

TLC ratio (IC/TLC) correlated strongly with ISWD, even when corrected for age and height (r_s = 0.59 p = 0.02). Oscillatory reactance (Xrs_5) and DLCO were also correlated with ISWD. There were no oscillometric or spirometric predictors of dyspnoea. Conclusion: Resting hyperinflation measured by IC/TLC, predicted ISWD despite submaximal dyspnoea, suggesting that hyperinflation may not be the mechanism that limits exercise performance, but rather reflects overall impairment in COPD.

Keywords: COPD; ISWT; exercise; forced oscillation technique; hyperinflation; inspiratory capacity; shuttle walk test.

Supplementary info

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21

Comparative Study

Adv Ther

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. 2025 Dec;42(12):5960-5977.

doi: 10.1007/s12325-025-03349-7. Epub 2025 Sep 25.

Real-World Comparative Effectiveness Study in Patients with Asthma Initiating Fluticasone Furoate/Vilanterol or Beclometasone Dipropionate/Formoterol Fumarate in General Practice in England

Ashley Woodcock [1], John Blakey [2,3], Arnaud Bourdin [4], Giorgio Walter Canonica [5,6], Christian Domingo [7], Alexander Ford [8], Rosie Hulme [8], Theo Tritton [8], Ines Palomares [9], Sanchayita Sadhu [10], Arunangshu Biswas [10], Manish Verma [11]

Affiliations Expand

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- **PMCID: PMC12618389**

- DOI: 10.1007/s12325-025-03349-7

Erratum in

- Correction to: Real-World Comparative Effectiveness Study in Patients with Asthma Initiating Fluticasone Furoate/Vilanterol or Beclometasone Dipropionate/ Formoterol Fumarate in General Practice in England.

Woodcock A, Blakey J, Bourdin A, Canonica GW, Domingo C, Ford A, Hulme R, Tritton T, Palomares I, Sadhu S, Biswas A, Verma M.Adv Ther. 2025 Dec;42(12):5978-5979. doi: 10.1007/s12325-025-03407-0.PMID: 41175324 Free PMC article. No abstract available.

Abstract

Introduction: We compared the real-world effectiveness of initiating beclometasone dipropionate/formoterol fumarate (BDP/FOR) versus fluticasone furoate/vilanterol (FF/VI) in a general practice (GP) asthma cohort in England.

Methods: Patients newly initiating BDP/FOR or FF/VI between 1 December 2015 and 28 February 2019 (index), were selected from anonymised Clinical Practice Research Datalink data. Baseline was < 12 months pre-index with ≤ 12 months follow-up post-index. Eligible patients were aged ≥ 18 years at index, had diagnosed asthma, ≥ 1 FF/VI or BDP/FOR prescription, medical records eligible for linkage to secondary care data and continuous GP-registration ≥ 12 months pre-index. Patients with chronic obstructive pulmonary disease, ≥ 1 fixed-dose inhaled corticosteroid/long-acting β_2-agonist, single-inhaler triple or biologic therapy at index were excluded. The primary study outcome was asthma exacerbation rate. Secondary outcomes included medication persistence and oral corticosteroid (OCS) use. Propensity scores were generated for each treatment comparison; inverse probability of treatment weighting adjusted for confounding in baseline characteristics between groups, applied to each outcome separately. Analyses considered intercurrent events (ICEs; treatment switching, discontinuation, loss to follow-up, death, rescue medication use).

Results: Weighted group standard mean differences showed adequate balance for most covariates. Patients initiating BDP/FOR (n = 46,809) and FF/VI (n = 3773) had numerically similar exacerbation rates per person per year (PPPY) while-on index treatment [measuring outcome until ICE; BDP/FOR, 0.1479 (n = 31,715); FF/VI, 0.1338 (n = 2547); rate ratio 0.9048, p = 0.2841]. Patients continuing uninterrupted index treatment for 12 months had a lower exacerbation rate PPPY for FF/VI [0.0681 (n = 384)] than BDP/FOR [0.1104 (n = 3342); rate ratio, 0.6162 (p = 0.0293)]. For patients initiating FF/VI versus BDP/FOR, treatment persistence was greater [hazard ratio, 0.76 (p < 0.0001)].

Conclusion: Overall, patients initiating FF/VI and BDP/FOR had numerically similar exacerbation rates; of the patients continuing 12 months' uninterrupted treatment, the FF/VI group had a lower exacerbation rate versus BDP/FOR. Patients initiating FF/VI were less likely to discontinue treatment than those initiating BDP/FOR.

Keywords: Asthma; Beclometasone dipropionate/formoterol fumarate; Comparative effectiveness; Fluticasone furoate/vilanterol; General practice; Real-world data; United Kingdom.

Plain language summary

We compared how well two common, daily, asthma treatments work, by comparing people with asthma in England who started treatment with beclometasone dipropionate/formoterol fumarate (abbreviated to BDP/FOR) with fluticasone furoate/vilanterol (abbreviated to FF/VI). Patients with asthma who started these medications between 1 December 2015 and 28 February 2019, were selected. The database included anonymised information, which meant the researchers could not tell who each patient was. It included information from general practice and hospital appointments. Patients with chronic obstructive pulmonary disease were excluded. The primary study question was whether rates of asthma attacks (or exacerbations) differed between patients starting BDP/FOR compared with FF/VI. We also looked at the proportion of patients who continued with their new treatment and how often, and at what dose, oral corticosteroids were needed. The characteristics of the patients in each treatment group were analysed and balanced to ensure a fair comparison. For every 100 patients in the study, overall there were 14 exacerbations per year with FF/VI (total of 3773 patients) and 15 exacerbations per year with BDP/FOR (total of 46,809 patients). Of the patients who continued uninterrupted treatment for 12 months, there were significantly fewer exacerbations with FF/VI (7 per 100 patients) than BDP/FOR (11 per 100 patients), although group sizes were smaller (384 and 3342 patients, respectively). Patients in the FF/VI group were 24% less likely to discontinue treatment than patients in the BDP/FOR group.

Conflict of interest statement

Declarations. Conflict of Interest: Ashley Woodcock has given lectures for Orion, and consulted for GSK and Orion. John Blakey reports grants or contracts from AstraZeneca, GSK and Novartis; consulting fees from Boehringer Ingelheim, Chiesi and GSK; payment or honoraria from AstraZeneca, Chiesi and GSK; support for attending meetings and/or travel from AstraZeneca, Boehringer Ingelheim and GSK; receipt of medical writing support from GSK and Teva; payment to their institution for advisory work from Asthma Australia; and unpaid advisory work from Asthma WA. Arnaud Bourdin has received grants, personal fees, non-financial support and other support from Actelion, AstraZeneca, Boehringer Ingelheim and GSK; personal fees, non-financial support and other support from Chiesi, Novartis and Regeneron; personal fees and non-financial support from Teva; personal fees from Gilead; non-financial support and other support from Roche; and other support from Nuvaira. Giorgio Walter Canonica reports having received research grants as well as being a lecturer or having received advisory board fees from: A.Menarini, AstraZeneca, Celltrion, Chiesi, Faes, Firma, Genentech, GSK, Hal Allergy, Innovacaremd, Novartis, OmPharma, RedMaple, Sanofi–Aventis, Sanofi–Regeneron, Stallergenes–Greer and Uriach Pharma. Christian Domingo declares having received financial aid for travel support and speakers' bureaus from ALK-Abello, Allergy Therapeutics, AstraZeneca, Chiesi, GSK, Hall Allergy, Inmunotek, A.Menarini Diagnostics, MSD, Novartis, Roxall, Sanofi and Stallergenes. Alexander Ford, Rosie Hulme and Theo Tritton are employees of Adelphi Real World, which received funding for this study from GSK. Ines Palomares, Arunangshu Biswas, Sanchayita Sadhu and Manish

Verma are GSK employees; Ines Palomares, Arunangshu Biswas and Manish Verma hold financial equities in GSK. Ethical Approval: This study was conducted according to GSK SOP52213 (Conducting Quality Control Review of Study Results generated using Existing Data in VEO and USVEO) and complied with all applicable laws regarding patient privacy. CPRD has NHS Health Research Authority (HRA) Research Ethics Committee (REC) approval to allow the collection and release of anonymised primary care data for observational research [NHS HRA REC reference number: 05/MRE04/87]. Each year, CPRD obtains Section 251 regulatory support through the HRA Confidentiality Advisory Group (CAG), to enable patient identifiers, without accompanying clinical data, to flow from CPRD contributing GP practices in England to NHS Digital, for the purposes of data linkage [CAG reference number: 21/CAG/0008]. The protocol for this research was approved by CPRD's Research Data Governance (RDG) Process (protocol number: 221602) and the approved protocol is available upon request. Linked pseudonymised data were provided for this study by CPRD. Data are linked by NHS Digital, the statutory trusted third party for linking data, using identifiable data held only by NHS Digital. Select general practices consent to this process at a practice level with individual patients having the right to opt-out. This study is based in part on data from the CPRD obtained under license from the UK Medicines and Healthcare products Regulatory Agency. The data are provided by patients and collected by the NHS as part of their care and support. The Office for National Statistics (ONS) was the provider of the ONS Data contained within the CPRD Data and maintains a Copyright© [2025], The Hospital Episode Statistics (HES) was the provider of HES-Admitted Patient Care and HES-Outpatient databases contained within the CPRD Data and maintain a Copyright© [2025] and Copyright© [2025] respectively. Linked data were re-used with the permission of The Health & Social Care Information Centre, all rights reserved. As this study used aggregate CPRD-HES data omitting patient identification, no patient contact or primary collection of data from human participants was required. The interpretation and conclusions contained in this study are those of the authors alone.

- 22 references
- 4 figures

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

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Nucl Med Commun

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. 2025 Dec 1;46(12):1186-1193.

doi: 10.1097/MNM.0000000000002052. Epub 2025 Sep 19.

Lung-to-heart ratio on thallium-201 myocardial perfusion imaging in patients with chronic obstructive pulmonary disease

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Affiliations Expand

- PMID: 40970439

- DOI: 10.1097/MNM.0000000000002052

Abstract

Background: In thallium-201 (Tl-201) stress myocardial perfusion imaging (MPI), elevated lung-to-heart ratio (LHR) can help to predict adverse cardiac events and identify coronary artery disease. However, few studies have evaluated the LHR values on Tl-201 MPI in patients with chronic obstructive pulmonary disease (COPD).

Objective: To examine whether LHR in COPD may be altered, considering the combined effects of hypoxia, inflammation, and capillary loss.

Methods: We retrospectively evaluated patients with normal Tl-201 pharmacologic stress MPI, no adverse cardiac events in the subsequent 2 years, and pulmonary function tests, coronary angiography, and echocardiography results obtained within 6 months. Patients with COPD (study group) were matched 1:1 by sex and age to controls with normal pulmonary function (control group). Subgroups within the study group were established based on COPD severity determined by spirometry. MPI images were interpreted using a 17-segment american heart association (AHA) model and a 0-4-point scale. LHR and right ventricle/left ventricle (RV/LV) ratios were also documented.

Results: Patients with severe COPD exhibited lower poststress LHR values than those with mild-to-moderate COPD. Compared with the control group, the moderate COPD group displayed higher stress LHR, stress RV/LV ratio, and tricuspid regurgitation maximum pressure gradient (TRmaxPG) values. Moreover, poststress LHR showed a positive correlation with the stress RV/LV ratio and TRmaxPG value. These findings were statistically significant ($P < 0.05$).

Conclusion: In Tl-201 pharmacologic stress MPI, our study suggests a nuanced relationship between COPD severity and LHR, emphasizing the need to reconsider normal LHR thresholds in COPD. Larger studies are warranted to validate and expand upon these findings.

Keywords: chronic obstructive pulmonary disease; lung-to-heart ratio; myocardial perfusion imaging.

- 28 references

Supplementary info

MeSH terms, SubstancesExpand

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Randomized Controlled Trial

Am J Respir Crit Care Med

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. 2025 Dec;211(12):2318-2329.

doi: 10.1164/rccm.202502-0404OC.

Randomized Sham-controlled Trial of Targeted Lung Denervation in Patients with Chronic Obstructive Pulmonary Disease (AIRFLOW-3)

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- PMID: 40920914

- DOI: 10.1164/rccm.202502-0404OC

Abstract

Rationale: AIRFLOW-3 was a 1:1 randomized, double-blind, sham-controlled trial of the D'Nerva targeted lung denervation (TLD) system in patients with chronic obstructive pulmonary disease (COPD). Objective: To evaluate the impact of TLD on COPD exacerbations compared with optimal medical
treatment. Methods: AIRFLOW-3 patients were symptomatic (COPD Assessment

Test score ⩾10) with moderate to very severe airflow obstruction (FEV_1 ≥25% but ⩽80% predicted) and Global Initiative for Chronic Obstructive Lung Disease E status (at least two moderate or one severe exacerbation during the previous 12 mo). The primary endpoint was a comparison of time to the first moderate or severe COPD exacerbation through 12 months between the treatment (TLD plus optimal medical treatment) and sham control groups (sham procedure plus optimal medical treatment). Secondary endpoints included the rate of severe COPD exacerbations, change in quality of life (St. George's Respiratory Questionnaire for COPD and Short Form-36 questionnaire), change in lung function (FVC, FEV_1, residual volume), and change in COPD Assessment Test score. Measurements and Main Results: 388 patients were randomized at a 1:1 ratio at 32 sites. There was no difference between treatment and the sham procedure in terms of the probability of participants having a moderate or severe COPD exacerbation (hazard ratio, 1.268; 95% confidence interval, 0.988-1.628). At 1 year, the TLD group had less dyspnea (>1-point improvement in Transitional Dyspnea Index, 35.4 vs. 24.1%; *P* = 0.021) compared with the sham group. *Post hoc* analyses suggests that failure to reach the primary endpoint was driven by an insufficient number of patients exhibiting an airway-predominant phenotype (lung hyperinflation without significant emphysema). Conclusions: AIRFLOW-3 failed to meet its primary endpoint. However, *post hoc* analyses identified a responder profile; a prospective multicenter randomized controlled trial is being designed to confirm these findings. Clinical trial registered with www.clinicaltrials.gov (NCT03639051).

Keywords: COPD; acetylcholine; anticholinergic; bronchoscopy; targeted lung denervation.

Comment in

- Targeted Lung Denervation in Chronic Obstructive Pulmonary Disease: Threading the Needle of Safe Interventions to Help the Sickest.

Kunitomo Y, Putcha N.Am J Respir Crit Care Med. 2025 Dec;211(12):2234-2235. doi: 10.1164/rccm.202507-1793ED.PMID: 41052462 No abstract available.

Supplementary info

Publication types, MeSH terms, Associated dataExpand

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Observational Study

Ann Am Thorac Soc

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. 2025 Dec;22(12):1881-1890.

doi: 10.1513/AnnalsATS.202412-1265OC.

Neutrophil-to-Lymphocyte Ratio as a Biomarker in Clinically Stable Chronic Obstructive Pulmonary Disease: SPIROMICS Cohort

Daniel T Hoesterey [1], Hong Dang [2], Daniela Markovic [3], Russell G Buhr [3 4], Donald P Tashkin [3], R Graham Barr [5], John A Belperio [3], Russell P Bowler [6], Eugene R Bleecker [7], David J Couper [2], Gerard J Criner [8], Christopher B Cooper [3], Claire M Doerschuk [2], Mark T Dransfield [9], M Bradley Drummond [2], Ashraf Fawzy [10], Christine M Freeman [11 12], MeiLan K Han [11], Nadia N Hansel [10], Annette T Hastie [13], Eric A Hoffman [14], Yvonne J Huang [11], Robert J Kaner [15], Richard E Kanner [16], Victor Kim [8], Jerry A Krishnan [17], Fernando J Martinez [15], Wanda K O'Neal [2], Victor E Ortega [18], Robert Paine 3rd [16], Abhishek K Shrivastav [18], J Michael Wells [9], Prescott G Woodruff [19], Jeffrey L Curtis [11 12], Igor Barjaktarevic [3]

Affiliations Expand

- PMID: 40920896

- DOI: 10.1513/AnnalsATS.202412-1265OC

Abstract

Rationale: Inflammation is central to chronic obstructive pulmonary disease (COPD) pathogenesis but incompletely represented in COPD prognostic models. The neutrophil-to-lymphocyte ratio (NLR) is a readily available inflammatory biomarker. Objectives: To explore the associations of NLR with smoking status, clinical features of COPD, and future adverse outcomes. Methods: We analyzed NLR calculated from the complete blood count of participants who currently or formerly smoked (*n* = 2,624) and tobacco-naive control subjects (*n* = 187) in the SPIROMICS multicenter observational cohort study. We assessed the stability of NLR at 6 weeks and 1 year, the association with select blood biomarkers, and the impact of smoking on NLR and cell counts. We stratified participants by NLR quartiles to compare cross-sectional clinical features at enrollment, prospectively observed exacerbations at 1 year, and mortality during longitudinal follow up. Results: Higher NLR quartiles were broadly associated with more severe clinical features of COPD. NLR values were repeatable at 6 weeks (intraclass correlation coefficient, 0.74) and 1 year (intraclass correlation coefficient, 0.62). The impact of smoking on NLR varied with the severity of airflow limitation, mediated by an interaction between smoking, forced expiratory volume in 1 second percent predicted, and neutrophil counts but not lymphocyte counts. The highest NLR quartile (>3.11) was associated with an increased risk of exacerbation over 1 year (adjusted odds ratio, 1.51; 95% confidence interval, 1.18, 1.92) and increased risk of mortality (adjusted hazard ratio, 1.41; 95% confidence interval, 1.20, 1.66) compared with quartiles 1-3. Conclusions: Elevated NLR in stable COPD is a widely available biomarker

associated with increased risk for exacerbation and death. The impact of cigarette smoking on NLR varies with disease severity.

Keywords: chronic obstructive pulmonary disease; cigarette smoking; inflammation; mortality; neutrophils.

Comment in

- **Neutrophil-to-Lymphocyte Ratio in Chronic Obstructive Pulmonary Disease: A Simple Marker with Complex Implications.**

LeMaster WB.Ann Am Thorac Soc. 2025 Dec;22(12):1827-1828. doi: 10.1513/AnnalsATS.202510-1079ED.PMID: 41324346 No abstract available.

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

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COPD

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. 2025 Dec;22(1):2550430.

doi: 10.1080/15412555.2025.2550430. Epub 2025 Sep 4.

Perceptions of Sedentary Behaviour in People with Chronic Obstructive Pulmonary Disease (COPD) Following a Recent Hospital-Managed Exacerbation: A Qualitative Exploration

Stefanie Harding [1 2], Angela Glynn [1], Alan Richardson [1], Ana-Carolina Gonçalves [3 4], Luke Hodgson [2 5]

Affiliations Expand

- **PMID: 40906070**

- **DOI: 10.1080/15412555.2025.2550430**

Free article

Abstract

Background: Individuals with chronic obstructive pulmonary disease (COPD) often lead sedentary lives, which is linked to negative health outcomes. Understanding the causes of this behaviour is essential for designing effective interventions. In the time following a hospital discharge, people with COPD may be especially sedentary and develop habits that contribute to this behaviour. Therefore, this is an important point at which to evaluate the reasons behind sedentary behaviour.

Methods: From one acute hospital in England, 12 participants with a recent COPD exacerbation were recruited. Following discharge, semi-structured interviews were conducted to identify perceptions of and barriers and facilitators to reducing sedentary behaviour. Reflexive thematic analysis was employed.

Findings: Two themes developed: "Focusing on survival" and "Loneliness, social isolation and lack of purpose". Factors contributing to sedentary behaviour include the need for rest, social isolation, symptom management, fear of dying or being readmitted to hospital from over-exertion, adherence to health professional advice, and lack of motivation and purpose. Concerns about socioeconomic disparities were noted. Participants were ready to embrace positive lifestyle changes.

Conclusion: Our study found some people with COPD, recently discharged from hospital, may adopt a sedentary lifestyle to manage symptoms and daily activities. Interviews highlight the need to tackle socioeconomic disparities, social support, and feelings of social disconnection. Misconceptions about sedentary behaviour being part of recovery underline the need for education for individuals with COPD and health professionals. The findings suggest strategies to reduce sedentary time, such as enjoyable activities, community involvement, and incorporating sedentary behaviour reduction into pulmonary rehabilitation.

Keywords: COPD exacerbation; Chronic obstructive pulmonary disease (COPD); hospital admission; qualitative study; sedentary behaviour.

. 2025 Dec;22(1):2544719.

doi: 10.1080/15412555.2025.2544719. Epub 2025 Aug 13.

Use of a Personalised Early Warning Decision Support System for Acute Exacerbations of Chronic Obstructive Pulmonary Disease: Results of the "Predict & Prevent" Phase III Trial

Eleni Gkini [1], Rajnikant L Mehta [2], Sarah Tearne [1], Lucy Doos [1], Sue Jowett [3], Nicola Gale [4], Alice M Turner [5]

Affiliations Expand

- PMID: 40799048

- DOI: 10.1080/15412555.2025.2544719

Free article

Abstract

Rationale: The Predict&Prevent trial was designed to provide a definitive randomised clinical trial of a personalised early warning decision support system, COPDPredict™.

Methods: Adults with ≥1 AECOPD were randomly assigned in a 1:1 ratio to use of a personalised early warning decision support system (COPDPredict™) or standard self-management plans with rescue medication (RM) (control). The primary outcome was number of hospital admissions for AECOPD at 12 months post-randomisation (intention to treat).

Results: Ninety (11%) of 789 screened patients were enrolled. Admissions per participant due to AECOPD at 12 months was lower with COPDPredict™: Incidence rate ratio (IRR) 0.64 (95% CI 0.19-2.17, $p = 0.478$). Exploratory Bayesian analysis and sensitivity analyses saw similar results. No significant differences were seen in inpatient days, visits to accident and emergency visits, and number of exacerbations. COPD Assessment Test (CAT) score benefits occurred at 3 and 6 months with COPDPredict™ (adjusted mean difference -3.8 points, 95% confidence interval (CI) -6.3 to -1.2, $p = 0.004$ and -3.0 points, 95% CI -5.7 to -0.4, $p = 0.025$, respectively) but was non-significant at longer periods ($p > 0.22$). There was not enough evidence to indicate a statistically significant treatment effect on the other outcomes.

Conclusions: COPDPredict™ failed to show a reduction in severe AECOPD events resulting in hospitalisations, although the number of admissions per participant was lower among users. The quality of life data (CAT scores) suggests that 6 months usage of COPDPredict™ period may be helpful to patients, with benefits exceeding the minimum clinically important difference throughout that time.

Trial registration: NCT04136418.

Keywords: Chronic obstructive pulmonary disease; clinical decision rules; digital health; randomised controlled trial; self-management.

Supplementary info

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Ann Am Thorac Soc

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. 2025 Dec;22(12):1853-1862.

doi: 10.1513/AnnalsATS.202412-1329OC.

Cough in Adults with Undiagnosed Respiratory Symptoms

Sheojung Shin [1], Jessica Poliwoda [1], G A Whitmore [2], Katherine L Vandemheen [1], Celine Bergeron [3], Louis-Philippe Boulet [4], Andréanne Côté [4], Stephen K Field [5], Erika Penz [6], R Andrew McIvor [7], Catherine Lemière [8], Samir Gupta [9], Paul Hernandez [10], Irvin Mayers [11], Mohit Bhutani [11], M Diane Lougheed [12], Christopher J Licskai [13], Tanweer Azher [14], Nicole Ezer [15], Martha Ainslie [16], Tetyana Kendzerska [1], Gonzalo G Alvarez [1], Sunita Mulpuru [1], Shawn D Aaron [1]

Affiliations Expand

- **PMID: 40788604**

- **DOI: 10.1513/AnnalsATS.202412-1329OC**

Abstract

Rationale: Cough is a common symptom of undiagnosed respiratory conditions. Objectives: To investigate cough in adults with undiagnosed respiratory symptoms and its association with quality of life (QoL), sleep quality, and healthcare utilization for respiratory illness. Methods: We used a case-finding strategy to find community-dwelling adults with respiratory symptoms but no previous history of diagnosed lung disease. Pre and postbronchodilator spirometry determined if participants met diagnostic criteria for asthma, chronic obstructive

pulmonary disease (COPD), or preserved ratio impaired spirometry, or if they had normal spirometry. Twelve questions from the Asthma Screening Questionnaire, COPD Assessment Test, and the St. George's Respiratory Questionnaire were used to develop a cough score. The 36-Item Short Form Survey and Global Sleep Assessment Questionnaire were used to assess QoL and sleep quality, respectively. Results: Adults with undiagnosed respiratory symptoms (*n* = 2,857; mean score, 57.8; 95% confidence interval [CI], 56.9 to 58.6) reported higher cough scores than age-matched control subjects (*n* = 231; mean score, 17.7; 95% CI, 15.6 to 19.8). Participants found to have asthma (*n* = 265; mean score, 61.0; 95% CI, 58.2 to 63.7) and COPD (*n* = 330; mean score, 61.8; 95% CI, 59.3 to 64.3) had higher cough scores than those with preserved ratio impaired spirometry (*n* = 172; mean score, 54.5; 95% CI, 51.1 to 58.0) or normal spirometry (*n* = 2,090; mean score, 57.0; 95% CI, 56.0 to 58.0). Higher cough scores were associated with decreased QoL (lower 36-Item Short Form Survey score; regression coefficient, -0.19; 95% CI, -0.22 to -0.17; *P* < 0.001), worse sleep quality (higher Global Sleep Assessment Questionnaire score; regression coefficient, 0.16; 95% CI, 0.14 to 0.18; *P* < 0.001), and higher healthcare utilization for respiratory illness (incidence rate ratio, 1.007; 95% CI, 1.004 to 1.010; *P* < 0.001). Conclusions: In adults with undiagnosed respiratory symptoms, cough was most severe in those with undiagnosed asthma or COPD and was independently associated with worse QoL, impaired sleep quality, and higher healthcare utilization for respiratory illness.

Keywords: asthma; chronic obstructive pulmonary disease; cough; quality of life; sleep.

Supplementary info

MeSH terms, Grants and fundingExpand

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. 2025 Dec;22(1):2542157.

doi: 10.1080/15412555.2025.2542157. Epub 2025 Aug 8.

Reassessing Gabapentinoids in Chronic Obstructive Pulmonary Disease: Emerging Respiratory Safety Concerns

A Alcántara Montero [1]

Affiliations Expand

- PMID: 40779400

- DOI: 10.1080/15412555.2025.2542157

Free article

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. 2025 Dec:201:108378.

doi: 10.1016/j.ypmed.2025.108378. Epub 2025 Jul 26.

Cigarette smoking and chronic disease in the United States, 2021-2023

Karin A Kasza [1], Richard J O'Connor [2], K Michael Cummings [3], Martin C Mahoney [2]

Affiliations Expand

- PMID: 40721112

- DOI: 10.1016/j.ypmed.2025.108378

Abstract

Objective: To quantify and describe the U.S. population of adults who smoke cigarettes daily and have chronic disease, determine their use of various products, and determine whether use of each product is associated with cigarette quitting.

Methods: PATH Study data collected in 2021 (Wave 6) and 2022/23 (Wave 7) were analyzed. Participants were adults who smoked cigarettes daily ages 40+ who were diagnosed with chronic obstructive pulmonary disease, chronic bronchitis, emphysema, congestive heart failure, heart attack, stroke, cancer, and/or diabetes as of 2021 (N = 1261). We determined in 2022/23 their past 12-month use of e-cigarettes, nicotine pouches, nicotine replacement therapy (NRT), and bupropion or

varenicline; we evaluated whether use differed by several characteristics, and whether use was associated with cigarette quitting.

Results: Among adults who smoked with chronic disease, 40 % were not recently advised by a clinician to quit smoking and 27 % did not plan to ever quit. Between 2021 and 2022/23, 16 % used e-cigarettes, 14 % used NRT, 8 % used bupropion or varenicline, 3 % used nicotine pouches. Overall, <6 % quit smoking in 2022/23; quit rates were higher for those who used e-cigarettes (9 %) and those who used NRTs (12 %) than those who did not use each respective product (5 % and 5 %).

Conclusions: There are 9.9 million people with chronic disease who smoke cigarettes daily in the U.S; findings highlight opportunity for healthcare providers to enhance efforts to help people quit smoking, opportunity to improve low use rates of FDA-approved smoking cessation pharmacotherapies, and potential for e-cigarettes as a smoking cessation tool.

Keywords: Adult; Chronic disease; Cigarette smoking; Electronic nicotine delivery systems; Longitudinal; Nicotine; Population; Smoking cessation; Tobacco products; United States.

Conflict of interest statement

Declaration of competing interest K. Michael Cummings provides expert testimony on the health effects of smoking and tobacco industry tactics in lawsuits filed against the tobacco industry. Martin C. Mahoney has provided expert testimony on the health effects of smoking in lawsuits filed against the tobacco industry. He has also received research support from Pfizer, Inc., for a clinical trial of smoking cessation, and has previously served on external advisory panels sponsored by Pfizer to promote smoking cessation in clinical settings.

Supplementary info

MeSH terms, SubstancesExpand

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. 2025 Dec;22(1):2532076.

doi: 10.1080/15412555.2025.2532076. Epub 2025 Jul 28.

Current Practices on Prescribing and Deprescribing for Patients on Long-Term Antibiotic Treatment for Chronic Pulmonary Conditions: An Umbrella Review by the European Society of Clinical Pharmacy (ESCP)

Ivana Tadic [1], Daniela Fialová [2], Ankie Hazen [3], Martin C Henman [4], Betul Okuyan [5], Francesca Wirth [6], Abdikarim Abdi [7], Silvana Urru [8], Kayla R Stover [9], Anita E Weidmann [1]

Affiliations Expand

- PMID: 40719419

- DOI: 10.1080/15412555.2025.2532076

Free article

Abstract

Purpose: Chronic pulmonary conditions require complex treatment strategies involving long-term antibiotic treatment, which carries the highest risk of antimicrobial resistance and adverse drug events (ADE). Specific guidance on prescribing and deprescribing can help reduce these risks and improve therapy effectiveness. The aim of the study was to determine prescribing and deprescribing practices for long-term antibiotic treatment (≥30 days) in preventing exacerbations of stable chronic pulmonary conditions in adult patients across all healthcare settings.

Patients and methods: This umbrella review was part of a larger registered study (PROSPERO, CRD42022381268) including systematic reviews and meta-analyses retrieved from PubMed, Cochrane Library, and PsycInfo. Outcomes of interest included condition, antibiotic, dose, duration, (de-) prescribing advice. Standardized methodological tools were used to assess methodological quality of the selected publications (ROBIS), facilitate data extraction (EPOC), and guide narrative summary of findings (PRIOR).

Results: In total, *n* = 14 publications were analyzed. (De-)prescribing advice is summarized for treatment (≥30 days) of chronic obstructive pulmonary disease, asthma, non-cystic fibrosis bronchiectasis, cystic fibrosis, and bronchiolitis obliterans syndrome. Macrolides are the most commonly recommended antibiotic for stable chronic pulmonary conditions. ADEs are the main reason for antibiotic discontinuation. Little consideration is given to emergence of antibiotic resistance.

Conclusion: There is a significant paucity of literature providing specific (de-)prescribing advice for clinical practice. More precise recommendations are required in view of patient safety.

Keywords: Chronic obstructive pulmonary disease; antibiotics; asthma; bronchiolitis obliterans syndrome; lung diseases; non-cystic fibrosis bronchiectasis.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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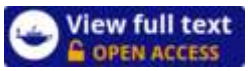

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. 2025 Dec;22(1):2482710.

doi: 10.1080/15412555.2025.2482710. Epub 2025 Apr 9.

Effectiveness of Interventions to Reduce Sedentary Behaviour in People with Chronic Obstructive Pulmonary Disease: A Systematic Review of Randomised Controlled Trials

Stefanie Harding [1 2], Alan Richardson [1], Angela Glynn [1], Luke Hodgson [2 3]

Affiliations Expand

- PMID: 40719387

- DOI: 10.1080/15412555.2025.2482710

Free article

Abstract

Background: Chronic obstructive pulmonary disease (COPD) affects over 300 million people and is the third leading cause of death. People with COPD spend a large amount of their day sedentary, which is associated with reduced life expectancy.

Methods: A systematic search was conducted across electronic databases, including Medline, CINAHL, PsycINFO, and Cochrane Library. Due to the heterogeneity of study design and siting of the activity monitor, a narrative synthesis was conducted.

Results: 1086 studies were identified; six met inclusion criteria, and two reported a decreased sedentary time. Nordic walking reduced sedentary time by 128 minutes/day compared to baseline, significantly more than the control group ($p < 0.01$). Another study using a behaviour change intervention reduced sedentary behaviour by 64 minutes/day compared to baseline, significantly more than the

control group (p = 0.018). Both studies were conducted for over 12 weeks, with a multi-modal approach incorporating behaviour change techniques, goal setting, education, self-monitoring and feedback. No studies focusing on reducing sedentary behaviour alone reported significant changes.

Conclusions: Few interventional studies have focused on reducing sedentary behaviour in people with COPD. Interventions that have effectively reduced sedentary time primarily focused on physical activity and adopted a multi-modal strategy. This suggests that future interventions could consider a multi-modal approach, which includes behaviour change and the incorporation of enjoyable light physical activities into daily living. We cannot conclude from the available evidence that solely targeting sedentary time will reduce sedentary behaviour. Longer interventions may reduce sedentary behaviour, but there is a lack of studies on both short- and long-term approaches.PROSPERO registration number CRD 42024510434.

Keywords: COPD; Chronic obstructive pulmonary disease; sedentary behaviour.

32

Randomized Controlled Trial

Am J Respir Crit Care Med

. 2025 Dec;211(12):2330-2339.

doi: 10.1164/rccm.202501-0170OC.

A Long-Term Physical Activity Coaching Program for Patients with Chronic Obstructive Pulmonary Disease: A Randomized Controlled Trial

Astrid Blondeel [1], Fien Hermans [1 2], Sofie Breuls [1], Marieke Wuyts [1 2], Stephanie Everaerts [3 4], Nikolaas De Maeyer [5], Eric Derom [6], Wim Janssens [3 4], Heleen Demeyer [1 2], Thierry Troosters [1]

Affiliations Expand

- PMID: 40700740

- DOI: 10.1164/rccm.202501-0170OC

Abstract

Rationale: Physical activity (PA) is decreased in patients with chronic obstructive pulmonary disease (COPD). PA coaching interventions are effective to improve PA in the short term, yet long-term effects are lacking. Providing an individualized step goal, feedback, and regular contact with a coach might be important aspects to obtain a long-term effect. Objectives: To investigate the effectiveness of a 12-month fully deployed PA coaching intervention to improve and maintain PA in patients with COPD, compared with a light coaching intervention. Methods: In this multicenter, single-blind randomized controlled trial, participants were randomized to either a full coaching intervention (including an activity tracker and a smartphone application with dynamic goal setting, regular feedback, and contact with a coach) or a light PA coaching group (including an activity tracker, a fixed step goal, and limited feedback or contact with a coach). Outcomes were assessed at baseline and at 6- and 12-month follow-up. Measurements and Main Results: One hundred fifty participants with COPD were randomized to the full (*n* = 77) and light (*n* = 73) coaching groups. No between-group differences were observed for objectively measured PA and perceived amount of PA measured with the Clinical Visit-PROactive Physical Activity instrument at 6-month follow-up (172 ± 367 steps/d [*P* = 0.64] and 2.5 ± 2.2 points [*P* = 0.26], respectively) and at 12-month follow-up (-43 ± 372 steps/d [*P* = 0.91] and 2.1 ± 2.2 points [*P* = 0.34], respectively). Responder rates were similar for the full and light coaching groups at 12 months (19% and 22%, respectively). Conclusions: A full coaching intervention providing dynamic individualized step goals, adequate feedback, and regular contact with a coach did not have additional effects on PA at 12 months compared with a light coaching intervention. Clinical trial registered with www.clinicaltrials.gov (NCT04139200).

Keywords: activity tracker; behavior change; chronic obstructive pulmonary disease; coaching; physical activity.

Comment in

- Can a Spark Light an Eternal Flame? Lessons from Physical Activity Coaching in Chronic Obstructive Pulmonary Disease.

Gloeckl R.Am J Respir Crit Care Med. 2025 Dec;211(12):2235-2237. doi: 10.1164/rccm.202507-1688ED.PMID: 41052454 No abstract available.

Supplementary info

Publication types, MeSH terms, Associated data, Grants and fundingExpand

Full text links

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Cite

33

COPD

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. 2025 Dec;22(1):2534002.

doi: 10.1080/15412555.2025.2534002. Epub 2025 Jul 23.

Risk of Severe Exacerbation Associated with Gabapentinoid Use in Patients with Chronic Obstructive Pulmonary Disease: A Population-Based Cohort Study

Omotayo Olaoye [1 2], Sophie Dell'Aniello [2], Pierre Ernst [1 2 3], Samy Suissa [1 2 3], Christel Renoux [1 2 3 4]

Affiliations Expand

- PMID: 40699157

- DOI: 10.1080/15412555.2025.2534002

Free article

Abstract

Evidence on the risk of adverse respiratory outcomes associated with gabapentinoids in patients with chronic obstructive pulmonary disease (COPD) remains limited. Thus, we aimed to assess the risk of severe COPD exacerbation associated with gabapentinoids. We assembled a base cohort of patients aged ≥ 55 years newly diagnosed with COPD between 1993 and 2021 using the UK's Clinical Practice Research Datalink, linked to the Hospital Episode Statistics, and Office for National Statistics datasets. Using a time-conditional propensity score (TCPS)-matched, new-user design, patients prescribed gabapentinoids with an indication of epilepsy, neuropathic pain, or other chronic pain were matched 1:1 with non-users with the same indication on age, sex, calendar year, COPD duration, and TCPS. Cox proportional hazards models were used to estimate the hazard ratios (HR) and 95% confidence intervals (CIs) of severe exacerbation associated with gabapentinoid use compared to non-use in the overall cohort, and by indication. The study cohort comprised 29,882 gabapentinoid users, including 1,256 with epilepsy, 19,155 patients with neuropathic pain, and 9,471 with other chronic pain matched 1:1 with non-users. Compared with non-use, gabapentinoid use was associated with an increased risk of severe exacerbation in the overall cohort (HR 1.43; 95% CI: 1.35-1.52), and among patients with epilepsy (HR 1.39; 95% CI: 1.11-1.74), neuropathic pain (HR 1.43; 95% CI: 1.32-1.54), and other chronic pain (HR 1.45; 95% CI: 1.31-1.60). These findings suggest that gabapentinoid use is associated with an increased risk of severe exacerbation among patients with COPD, consistent among patients with neuropathic pain, epilepsy, and other chronic pain.

Keywords: Chronic obstructive pulmonary disease (COPD); exacerbation; gabapentin; gabapentinoids; pregabalin.

Supplementary info

MeSH terms, SubstancesExpand

Full text links

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Cite

34

Ann Am Thorac Soc

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. 2025 Dec;22(12):1843-1852.

doi: 10.1513/AnnalsATS.202411-1230OC.

Gabapentinoids and Risk for Exacerbation of Chronic Obstructive Pulmonary Disease

Yuya Kimura [1 2], Taisuke Jo [3 4], Norihiko Inoue [5 6 7], Maho Suzukawa [2], Hiroki Matsui [3], Yusuke Sasabuchi [8], Hideo Yasunaga [3]

Affiliations Expand

- **PMID: 40668951**

- **DOI: 10.1513/AnnalsATS.202411-1230OC**

Abstract

Rationale: Data on the effect of gabapentinoids on patients with chronic obstructive pulmonary disease (COPD) are sparse, although the U.S. Food and Drug Administration has issued a safety warning for these medications, particularly in individuals with respiratory risk factors. Objectives: To investigate whether gabapentinoid use is associated with increased COPD exacerbations requiring systemic corticosteroids. Methods: Using a nationwide administrative claims database, we conducted a retrospective cohort study using an active-comparator new-user design. We identified patients with COPD and neuropathic or chronic pain who initiated gabapentinoid treatment between 2015 and 2022. Two active-comparator new-user cohorts were created: one with tricyclic antidepressants and the other with serotonin-noradrenaline reuptake inhibitors. Patient backgrounds

were balanced using overlapping propensity score weighting. Results: The primary outcome was the initial occurrence of COPD exacerbations requiring systemic corticosteroids. Hazard ratios (HRs) associated with gabapentinoids were assessed using a weighted Cox proportional hazards model. In the tricyclic antidepressant cohort (37,098 patients), gabapentinoids were associated with a higher incidence of the primary outcome (67.8 vs. 46.7 per 100 person-years; HR, 1.21 [95% confidence interval, 1.03-1.42]). In the serotonin-noradrenaline reuptake inhibitor cohort (48,480 patients), gabapentinoids were also linked to a higher incidence of the primary outcome (68.8 vs. 51.4 per 100 person-years; HR, 1.18 [95% confidence interval, 1.10-1.28]). Conclusions: Gabapentinoids may increase the risk of COPD exacerbations compared with other central nervous system-active medications at the same treatment stage for neuropathic or chronic pain, suggesting that their use should be limited to clearly beneficial cases.

Keywords: chronic obstructive; hypnotics and sedatives; pain; pulmonary disease.

Supplementary info

MeSH terms, Substances, Grants and fundingExpand

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Cite

35

Review

Expert Rev Respir Med

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. 2025 Dec;19(12):1181-1191.

doi: 10.1080/17476348.2025.2530207. Epub 2025 Jul 12.

Management of COPD exacerbations in hospital emergency departments

Pascual Piñera Salmerón [1 2], Esther Pulido Herrero [3 4], Raúl Perales Muñoz [5], Arturo Huerta García [6], Raúl Alonso Avilés [7], Cesar Cinesi Gómez [1], Juan González Del Castillo [5]; ; SEMES Working Groups on Respiratory Pathology, Noninvasive Ventilatory Therapies and Infections in the Emergency Department *

Affiliations Expand

- PMID: 40637110

- DOI: 10.1080/17476348.2025.2530207

Free article

Abstract

Introduction: Emergency departments (EDs) play a crucial role in managing exacerbation of COPD (ECOPD). However, there is currently no standardization of management criteria for ECOPD within the Spanish healthcare system. This document aims to outline the management of ECOPD in EDs in the context of 2025, serving as a guide for healthcare professionals working in emergency services.

Areas covered: Various aspects of the management of ECOPD in EDs are covered in this article, including severity classification, treatments (both pharmacological and nonpharmacological), criteria for hospital admission and discharge from the ED, treatment at discharge, palliative care, and management of frail patients.

Expert opinion: The authors, who are members of the Spanish Society of Emergency Medicine (SEMES), emphasize the importance of classifying the severity of the episode and the patient characteristics to tailor care to each individual. The authors also highlight the value of biomarkers, the appropriate use of ventilatory therapies for ECOPD patients, the importance of proper antibiotic management, and the establishment of clear referral protocols to prevent patients from feeling lost in the healthcare system. Finally, the need to personalize post-discharge treatments is underscored to enhance continuity of care and improve health outcomes.

Keywords: COPD; Emergency; coordination; diagnosis; exacerbation; guidelines; treatment.

. 2025 Dec;61(12):783-786.

doi: 10.1016/j.arbres.2025.06.008. Epub 2025 Jun 23.

COPD and Frailty: Results of a Study Using the Delphi Method

[Article in English, Spanish]

Roberto Bernabéu-Mora [1], Pilar Cubo Romano [2], Iñaki Martín Lesende [3], Elsa Naval Sendra [4], Juan José Soler-Cataluña [5], Francisco José Tarazona-Santabalbina [6]

Affiliations Expand

- PMID: 40628635

- DOI: 10.1016/j.arbres.2025.06.008

No abstract available

Supplementary info

Publication typesExpand

Full text links

37

J Affect Disord

. 2025 Dec 1:390:119798.

doi: 10.1016/j.jad.2025.119798. Epub 2025 Jul 1.

Causal association between chronic obstructive pulmonary disease and brain cortical structure: A Mendelian randomization study

Hai-Qiang Wang [1], Yong-Keng Feng [2], Xue-Bing Hu [1], Wei Wu [1], Xue Lai [1], Feng Gao [3], Bin Wang [4]

Affiliations Expand

- PMID: 40609654

- DOI: 10.1016/j.jad.2025.119798

Free article

Abstract

Background: Observational studies have demonstrated an association between chronic obstructive pulmonary disease (COPD) and structural changes in the brain cortex. However, the causality remains undetermined. This study aims to establish the causal impact of COPD and lung function on brain cortical structure (surface area (SA) and thickness (TH)).

Methods: Using Mendelian randomization (MR) analysis. Data from Genome-wide association studies (GWAS) of European ancestry were used. The inverse variance weighted (IVW) method was employed as the primary approach and sensitivity analyses were conducted to examine the robustness of the results.

Results: On the global scale, FVC was significantly positively correlated with brain cortical SA (β_{SA} = 1644.01 mm^2, P = 0.01). On a regional scale after Bonferroni correction, forced vital capacity (FVC) was found to be significantly positively correlated with the SA of the medial orbitofrontal without global weighted (β_{SA} = 30.94 mm^2, P = 0.00035) and the SA of the middle temporal without global weighted (β_{SA} = 55.37 mm^2, P = 0.0003). Forced expiratory volume in one second (FEV1) was significantly negatively correlated with the SA of the frontal pole with global weighted (β_{SA} = -3.40 mm^2, P = 0.0003). There were also suggestive evidence showing nominal associations of COPD and lung function with certain brain cortical structures.

Conclusion: These findings suggest that COPD and lung function affect brain cortical structure, indicating the presence of a lung-brain axis.

Keywords: Brain structure; Chronic obstructive pulmonary disease; Lung function; Mendelian randomization.

Conflict of interest statement

Declaration of competing interest The authors declare no conflict of interest related to this manuscript.

Supplementary info

MeSH termsExpand

Full text links

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Cite

38

COPD

. 2025 Dec;22(1):2512749.

doi: 10.1080/15412555.2025.2512749. Epub 2025 Jun 13.

Expression and Predictive Value of Angiopoietin-2 in Pulmonary Hypertension Associated with Chronic Obstructive Pulmonary Disease

Ruiqin Ni [1 2], Mengrong Xie [3], Jingying Zhang [1 2], Mingmei Zhong [1]

Affiliations Expand

- PMID: 40512521

- DOI: 10.1080/15412555.2025.2512749

Free article

Abstract

Clear and effective treatment for pulmonary hypertension (PH) caused by chronic obstructive pulmonary disease (COPD) has not been established, and thus promptly identifying patients with PH is of particular importance. In this study, by comparing Angiopoietin-2 expression in patients with COPD and COPD-PH, we analysed the risk factors of PH and evaluated the predictive value of these in PH. Therefore, this prospective study selected COPD of patients as research subjects, which were divided into COPD and COPD-PH groups according to whether they were complicated with PH. Lung function, general laboratory index, N-terminal pro brain b-type natriuretic peptide (NT-proBNP), Angiopoietin-2, and other cytokines levels were compared between the two groups, and the risk factors of COPD-PH were explored through multivariate binary regression analysis. Lastly, receiver operating characteristic curve was used in evaluating the predictive value of risk factors for COPD-PH. The results show that the COPD-PH group has higher Angiopoietin-2, logistic analysis showed that Angiopoietin-2, NT-proBNP, age, and FEV1%pred were independent risk factors for COPD-PH and had high predictive value for COPD-PH. The AUROC for Angiopoietin-2 and NT-proBNP for predicting COPD-PH were 0.646 and 0.751. When Angiopoietin-2 ≥ 39.55 pg/ml, NT-proBNP ≥ 134.03 pg/ml, the sensitivity for COPD-PH prediction was 44.7 and 93.6%, respectively, and the specificity rates were 83.1 and 49.2%, respectively. When Angiopoietin-2 was combined with NT-proBNP, enhanced the AUROC to 0.766, exceeding Angiopoietin-2 alone, which may be useful in the prediction of COPD-PH.

Keywords: Chronic obstructive pulmonary disease; angiopoietin-2; predictive value; pulmonary hypertension; risk factors.

Supplementary info

MeSH terms, SubstancesExpand

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Cite

39

Ann Med

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. 2025 Dec;57(1):2482864.

doi: 10.1080/07853890.2025.2482864. Epub 2025 Mar 20.

Regarding 'childhood respiratory risk profiles associate with lung function and COPD among the old population'

Xiaoyan Hu [1], Peng Sun [1]

Affiliations Expand

- PMID: 40111419
- PMCID: PMC11926891
- DOI: 10.1080/07853890.2025.2482864

No abstract available

Conflict of interest statement

No potential conflict of interest was reported by the author(s).

- 3 references

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40

Ann Med

. 2025 Dec;57(1):2477299.

doi: 10.1080/07853890.2025.2477299. Epub 2025 Mar 12.

Clinical characteristics and outcomes of chronic obstructive pulmonary disease patients with family history of chronic airway disease

Cong Liu [1 2 3 4], Qing Song [1 2 3 4], Ya-Ting Peng [1 2 3 4], Wei Cheng [1 2 3 4], Ling Lin [1 2 3 4], Tao Li [1 2 3 4], Xue-Shan Li [1 2 3 4], Yu-Qin Zeng [1 2 3 4], Ai-Yuan Zhou [5], Yan Chen [1 2 3 4], Shan Cai [1 2 3 4], Ping Chen [1 2 3 4]

Affiliations Expand

- PMID: 40074698
- PMCID: PMC11905302
- DOI: 10.1080/07853890.2025.2477299

Abstract

Background: Chronic Obstructive Pulmonary Disease (COPD) is a heterogeneous condition with different risk factors, including family history. This study aimed to explore association between a family history of chronic airway disease and features and outcomes of COPD.

Methods: Participants were obtained from the RealDTC study between December 2016 and December 2022. Data on demographics, pulmonary function, history of exacerbation at baseline, acute exacerbation during 1-year follow-up and survival status during 3-years follow-up were collected.

Results: 5020 patients were enrolled, with 1307 patients (26.0%) having a family history of chronic airway diseases. Compared with patients without a family history of chronic airway diseases, patients with a family history had a lower forced expiratory Volume in one second (FEV1), higher Modified Medical Research Council (mMRC) score and COPD Assessment Test (CAT) score, higher rate of acute exacerbation and hospitalization in the past year ($p < 0.05$) and rate of acute exacerbation and hospitalization during 1 year follow-up period ($p < 0.05$). It was an independent risk factor for acute exacerbation (OR = 2.196; 95% CI =1.873-2.576) and hospitalization (OR = 2.199; 95% CI =1.812-2.670). Over 3 years of follow-up, there were no significant differences in mortality rates and annual changes in FEV1 between two groups.

Conclusion: COPD patients with a family history of chronic airway disease are not rare, and they tend to have more severe symptoms and a higher risk of future

deterioration. In the management of COPD, special attention should be paid to patients with a family history of chronic airway disease.

Keywords: Chronic obstructive pulmonary disease; acute exacerbation; family history; hospitalization.

Conflict of interest statement

No potential conflict of interest was reported by the authors.

- **31 references**
- **1 figure**

Supplementary info

MeSH terms

- **1 year**
- **5 years**
- **10 years**
- **From 2025/11/30 to 2025/12/3**

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- **Free full text**
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Ann Med

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. 2025 Dec;57(1):2470954.

doi: 10.1080/07853890.2025.2470954. Epub 2025 Feb 26.

Childhood respiratory risk profiles associate with lung function and COPD among the old population

Chenyuan Qin [1], Jian Gao [2], Xingang Sang [3], Min Liu [1], Jue Liu [1 4 5 6]

Affiliations Expand

- PMID: 40009521

- PMCID: PMC11866643

- DOI: 10.1080/07853890.2025.2470954

Abstract

Background: Childhood, often characterized by multiple concurrent risk factors, holds significant influence over long-term respiratory outcomes, with the intricate interplay among these factors representing an intriguing but underexplored avenue for research. We aimed to determine if respiratory risk factors during childhood affect lung function and chronic obstructive pulmonary disease (COPD) in old age.

Methods: Participants were drawn from the Health and Retirement Study cohort. Latent class analysis (LCA) was applied with six variables used to develop the early-life respiratory risk profiles. Linear regressions and logistic regressions were used to assess the associations between childhood respiratory risk profiles and lung function, including peak expiratory flow (PEF) value, PEF value <80% of the predicted value and COPD.

Results: A total of 12,296 participants (5017 males and 7279 females) with an average age of 68 years were recruited. We identified six distinct childhood respiratory risk profiles: (1) 'Asthma and respiratory disorders in early childhood' (*n* = 241, 1.96%), (2) 'Unexposed or least exposed' (*n* = 3874, 31.51%), (3) 'Smokers at home' (*n* = 7609, 61.88%), (4) 'Ear problems and respiratory disorders in early childhood' (*n* = 162, 1.32%), (5) 'Allergic conditions and respiratory disorders in early childhood' (*n* = 220, 1.79%) and (6) 'Allergic conditions and respiratory disorders in later childhood' (*n* = 190, 1.55%). Profile 2 served as the reference. The highest reduction of PEF was seen for profile 1 (-30.07 L/min), followed by profile 6 (-22.24 L/min) and profile 5 (-18.47 L/min). Profile 6, profile 3 and profile 1 related to 1.98-, 1.52- and 1.66-fold increased risks of diminished PEF values, respectively. The highest risk of COPD was observed in profile 5 (aOR = 4.16, 95% CI: 3.75-4.57), followed by profile 6 (aOR = 4.10, 3.69-4.51), profile 4 (aOR = 3.70, 3.25-4.15), profile 1 (aOR = 3.46, 3.07-3.85) and profile 3 (aOR = 1.41, 1.25-1.57).

Conclusions: People exposed to early-life respiratory challenges experienced larger declines in lung function and increased risks of COPD later in life. Our findings underscore the importance of early-life respiratory health in shaping lung function trajectories.

Keywords: COPD; Respiratory risk; latent class analysis; lung function; old people; peak expiratory flow.

Conflict of interest statement

No potential conflict of interest was reported by the author(s).

- Cited by 2 articles
- 43 references
- 2 figures

Supplementary info

MeSH termsExpand

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2

Editorial

COPD

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. 2025 Dec;22(1):2467657.

doi: 10.1080/15412555.2025.2467657. Epub 2025 Feb 24.

Biologics in COPD: The Road is Still Long and Winding

Konstantinos Kostikas [1], Athena Gogali [1]

Affiliations Expand

- PMID: 39992256

- DOI: 10.1080/15412555.2025.2467657

Free article

No abstract available

Supplementary info

Publication typesExpand

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3

COPD

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. 2025 Dec;22(1):2449889.

doi: 10.1080/15412555.2025.2449889. Epub 2025 Jan 29.

Biologic Therapies for Chronic Obstructive Pulmonary Disease: A Systematic Review and Network Meta-Analysis of Randomized Controlled Trials

Tyler Pitre [1 2], Daniel Lupas [3], Jasmine Mah [4], Matthew Stanbrook [1], Alina Blazer [1], Dena Zeraatkar [5 6], Terence Ho [7]

Affiliations Expand

- PMID: 39877958

- DOI: 10.1080/15412555.2025.2449889

Free article

Abstract

Background: Despite limited breakthroughs in COPD pharmacotherapy, recent trials have shown promising results for biologics in COPD patients. However, robust evidence synthesis in this area is currently lacking.

Methods: We conducted a systematic review of MEDLINE, EMBASE, and Cochrane CENTRAL from inception to July 17, 2024, to identify randomized trials of biologic medications in patients with COPD. We performed a random effects frequentist network meta-analysis and present the results using relative risk (RR) and 95% confidence intervals (CI). We used the GRADE framework to rate the certainty of the evidence. Outcomes of interest included exacerbations, change in FEV1, change in quality of life, and serious adverse events.

Results: Dupilumab reduced exacerbations as compared to placebo (RR 0.68 [95% CI 0.59 to 0.79]) (high certainty). Benralizumab (RR 0.89 [95% CI 0.78 to 1]), itepekimab (RR 0.81 [95% CI 0.61 to 1.07]) and tezepelumab (RR 0.83 [95% CI 0.61 to 1.12]) may reduce exacerbations as compared to placebo (all low certainty). Dupilumab probably reduced exacerbations more than mepolizumab (RR 0.74 [95% CI 0.62 to 0.89]) (moderate certainty). Dupilumab may reduce exacerbations more than tezepelumab (RR 0.82 [95% CI 1.14]) (low certainty). For all patients, no treatment improved FEV1 above the pre-specified minimal clinically important difference (MCID) of 0.1 L. Dupilumab probably has no meaningful effect on FEV1 compared to placebo (MD 0.07 [95% CI 0.02 to 0.13]) (moderate certainty). However, in the subgroup of patients with blood eosinophils ≥300/mcL, both tezepelumab (MD 0.15 [95% CI 0.05 to 0.26]) and dupilumab (MD 0.13 [95% CI 0.06 to 0.19]) probably improved FEV1 above the MCID.

Conclusion: Dupilumab is effective at improving patient-relevant outcomes in COPD with higher eosinophil levels. Other biological therapies, including tezepelumab, have no important effect on patient-relevant outcomes.

Keywords: COPD; biologics; network meta-analysis.

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

1

Editorial

J Am Coll Cardiol

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. 2025 Dec 3:S0735-1097(25)10032-6.

doi: 10.1016/j.jacc.2025.10.046. Online ahead of print.

Frailty in Cardiovascular Disease: Time for a Universal Definition!

Abdulla A Damluji [1], Michael G Nanna [2], Venu Menon [3]

Affiliations Expand

- PMID: 41335081

- DOI: 10.1016/j.jacc.2025.10.046

No abstract available

Keywords: aged 80 and over; cognitive function; frailty; geriatric assessment; multimorbidity.

Conflict of interest statement

Funding Support and Author Disclosures Dr Damluji has received research funding from the Pepper Scholars Program of the Johns Hopkins University Claude D. Pepper Older Americans Independence Center, funded by National Institute on Aging grant P30-AG021334; and has received a mentored patient-oriented research career development award from the National Heart, Lung, and Blood Institute (K23-HL153771-01). Dr Nanna has received unrelated current research support from the American College of Cardiology Foundation, supported by the George F. and Ann Harris Bellows Foundation, the Patient-Centered Outcomes Research Institute, the Yale Claude D. Pepper Older Americans Independence Center (grant P30AG021342), and the National Institute on Aging (grant K76AG088428); and has received personal

fees from HeartFlow, Merck, and Novo Nordisk. Dr Menon has reported that he has no relationships relevant to the contents of this paper to disclose.

Supplementary info

Publication typesExpand

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2

Int J Cardiol Cardiovasc Risk Prev

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. 2025 Nov 17:27:200548.

doi: 10.1016/j.ijcrp.2025.200548. eCollection 2025 Dec.

Long-term body mass index variability and the risk of cardiometabolic multimorbidity in middle-aged and older adults: Insights from two prospective cohorts

Xiaoying Ren [1], Mengge Yang [1], Juan Tian [1], Xiaona Chang [1], Guang Wang [1], Jia Liu [1]

Affiliations Expand

- PMID: 41333715
- PMCID: PMC12666677
- DOI: 10.1016/j.ijcrp.2025.200548

Abstract

Background: Body mass index (BMI) variability is considered to be associated with an increased risk of various diseases. However, the association between long-term BMI variability and cardiometabolic multimorbidity (CMM) remains elusive, especially in middle-aged and older adults. This study aimed to explore their relationship in two prospective cohorts.

Methods: Data were analyzed from the UK Biobank and the China Health and Retirement Longitudinal Study (CHARLS). CMM was defined as the coexistence of two or three cardiometabolic diseases, including diabetes mellitus, coronary heart disease, and stroke. BMI measurements from three visits were utilized to assess BMI variability. Cox regression analysis was employed to estimate the relationship between BMI variability and CMM.

Results: The incidence of CMM increased across increasing tertiles of BMI variability, particularly in overweight and obese individuals (all *P* for trend <0.05). This trend was absent in lean subgroups. In the UK Biobank, among participants who were overweight or obese at baseline (BMI ≥25 kg/m^2), those in the highest tertile of BMI variability exhibited a higher burden of CMM compared to those in the lowest tertile (HR = 2.97, 95 %CI 1.98-4.48, *P* < 0.001). A similar association was observed in CHARLS among individuals overweight or obese at baseline (BMI ≥24 kg/m^2) (HR = 1.56, 95 %CI 1.09-2.35, *P* = 0.017). No significant association was found between BMI variability and CMM risk in participants with normal baseline BMI.

Conclusions: Higher BMI variability was significantly associated with an elevated risk of CMM in individuals with pre-existing overweight or obesity.

Keywords: Body mass index (BMI); Cardiometabolic multimorbidity (CMM); Variability.

Conflict of interest statement

The authors declare no competing interests.

- **39 references**
- **2 figures**

Proceed to details

Cite

3

Cardiology

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. 2025 Dec 1:1-16.

doi: 10.1159/000549181. Online ahead of print.

Association between lipid accumulation products and cardiometabolic multimorbidity in adults aged 50 years and older: Findings from the English Longitudinal Study of Ageing

Setor K Kunutsor, Sae Young Jae, Jari A Laukkanen

- **PMID: 41325416**
- **DOI: 10.1159/000549181**

Abstract

Introduction: The lipid accumulation product (LAP) is a sex-specific index that reflects visceral adiposity and lipid imbalance. This study aimed to investigate the prospective association between LAP and cardiometabolic multimorbidity (CMM), and to assess its value in risk prediction.

Methods: We analyzed data from 3,348 participants (mean age: 64 years; 54.9% women) in the English Longitudinal Study of Ageing who were free of hypertension, coronary heart disease, diabetes, and stroke at baseline (wave 4: 2008-2009). LAP was calculated using waist circumference (cm) and fasting triglyceride levels (mmol/L) via standardized sex-specific formulas. CMM was defined as having two or more of the following conditions by wave 10 (2021-2023): hypertension, cardiovascular disease, diabetes, or stroke. Multivariable logistic regression was used to estimate odds ratios (ORs) with 95% confidence intervals (CIs), and model performance was evaluated using discrimination metrics.

Results: During a 12-15 year follow-up period, 197 participants developed CMM. A restricted cubic spline analysis showed a linear association between LAP and CMM risk (p for nonlinearity = .23). Each 1 standard deviation increase in LAP was associated with higher odds of CMM (OR = 1.31; 95% CI: 1.16-1.49), which remained significant after adjusting for physical activity (OR = 1.30; 95% CI: 1.14-1.47). Similar trends were observed across LAP tertiles. Incorporating LAP into a model with conventional risk factors modestly improved discrimination (ΔC-index = 0.0064; p = .32), but significantly improved model fit (-2 log likelihood test, p < .001).

Conclusion: High LAP was independently and linearly associated with increased risk of CMM in older adults. While the inclusion of LAP modestly improved model fit, its added value in enhancing risk discrimination beyond established cardiometabolic risk factors was limited in this cohort.

S. Karger AG, Basel.

Full text links

Proceed to details

Cite

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Clin Transl Allergy

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. 2025 Dec;15(12):e70129.

doi: 10.1002/clt2.70129.

Atopic Multimorbidity in Adults With a Focus on Sensitization Patterns and T Cell Activation

Ariane Bialas [1], Marie Rabe [1], Niklas Artz [1], Andreas Boldt [2], Jan C Simon [1], Regina Treudler [1 3], Benjamin Klein [1]

Affiliations Expand

- PMID: 41311258
- PMCID: PMC12661119
- DOI: 10.1002/clt2.70129

Abstract

Background: Atopic diseases-including atopic dermatitis (AD), asthma (AA), and allergic rhinitis (AR)-are driven by Th2 inflammation and often occur together (atopic multimorbidity), along with non-atopic comorbidities. Chronic spontaneous urticaria (CSU) is an autoimmune mast cell-driven disease, but its relationship to classic atopic diseases remains unclear. This study investigated the association of CSU with classical atopic diseases as well as sensitization patterns and T cell activation in atopic multimorbidity.

Methods: We conducted a prospective, single-center study involving 123 participants who completed structured questionnaires regarding physician-diagnosed AD, AA, AR, and/or CSU, as well as non-atopic comorbidities and a history of type I sensitizations. AD patients (n = 22, with or without AR/AA, but not CSU) and healthy controls (n = 20) underwent additional immunophenotyping. Peripheral blood T cell subsets and T cell activation status were measured by flow cytometry and compared across groups.

Results: Individuals with atopic multimorbidity exhibited more frequent type I sensitizations, sleep disorders, and elevated serum IgE levels. CSU differed from classical atopic diseases regarding age of onset and duration and was therefore excluded from immunophenotyping. T cell subsets and activation in AD did not differ by presence of atopic multimorbidity but correlated with disease activity scores.

Conclusion: Our findings highlight the burden associated with atopic multimorbidity, demonstrated by increased serum IgE and sensitization rates in individuals with multiple atopic diseases. Importantly, T cell activation appeared to be more closely related to AD disease activity rather than the presence of classic atopic comorbidities.

Keywords: allergy; atopic dermatitis; atopy; type 2 immunity; urticaria.

Conflict of interest statement

B.K., A.r.B., M.R., and A.B. declare no conflicts of interest. N.A. reports personal fees from Sun Pharma. R.T. reports grants and personal fees from Sanofi-Genzyme

and Novartis, personal fees from ALK-Abello, Almirall, CSL Behring, AbbVie, Pfizer, LeoPharma, Novartis, and Viatris, which are all independent of the submitted work. J.C.S. reports grants and personal fees from Sanofi-Genzyme and Novartis, and personal fees from Lilly, Novartis, AbbVie, and LeoPharma.

- 39 references
- 5 figures

Supplementary info

Grants and fundingExpand

Full text links

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Cite

5

COPD

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. 2025 Dec;22(1):2582809.

doi: 10.1080/15412555.2025.2582809. Epub 2025 Nov 4.

Impact of Lung Function and COPD on the Prevalence and Mortality of CKM Syndrome: Evidence from a Cross-Sectional Study

Jisong Yan [1 2], Xingyao Tang [1 3], Minghui Shi [1 3], Wei Li [1], Tingting Huang [1], Yanan Cui [1], Yaodie Peng [1 4], Rui Su [1 4], Ting Yang [1], Ke Huang [1]

Affiliations Expand

- PMID: 41186419

- DOI: 10.1080/15412555.2025.2582809

Free article

Abstract

Background: Chronic obstructive pulmonary disease (COPD) and cardiovascular-kidney-metabolic (CKM) syndrome are major public health concerns, yet their interrelationship remains under-explored. This study investigates the impact of lung

function and COPD on the prevalence and mortality of CKM syndrome using data from the National Health and Nutrition Examination Survey (NHANES) 2007-2012.

Methods: A cross-sectional analysis of 5569 adults was conducted, defining CKM stages per the 2023 American Heart Association framework. Lung function was assessed *via* prebronchodilator spirometry, with COPD classified using GOLD criteria. Advanced CKM syndrome (stages 3-4) was the primary outcome. Associations were evaluated using survey-weighted logistic regression, restricted cubic splines (RCS), and cox proportional hazards models.

Results: Among participants, 10.7% had advanced CKM syndrome. COPD was significantly associated with advanced CKM(adjusted OR = 1.52 [1.11, 2.09]), with escalating risks across GOLD stages (GOLD stage II: OR = 2.13 [1.21, 3.74]; GOLD stage III-IV: OR = 4.38 [1.06, 18.02]). Pre-COPD conditions, including preserved ratio impaired spirometry (PRISm) (OR = 2.62 [1.66, 4.14]) and chronic bronchitis (OR = 2.60 [1.50, 4.53]), also showed significant associations. COPD increased all-cause mortality (HR = 1.40 [1.04, 1.89]) and cardiovascular-related mortality (HR = 1.81 [1.04, 3.14]) in individuals aged ≥50 with advanced CKM.

Conclusion: COPD is strongly associated with advanced CKM syndrome and increased mortality. These findings highlight the systemic impact of lung health on CKM progression and outcomes, emphasizing the need for integrated screening and management strategies targeting both pulmonary and cardiometabolic health, especially in older adults.

Keywords: CKM syndrome; COPD; mortality; multimorbidity.

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Observational Study

Ann Med

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. 2025 Dec;57(1):2579789.

doi: 10.1080/07853890.2025.2579789. Epub 2025 Oct 31.

Comparison of the predictive performance of Cumulative Illness Rating Scale, Charlson Comorbidity Index and COMCOLD Index for moderate-to-severe exacerbations in elderly subjects with chronic obstructive pulmonary disease

Edoardo Pirera [1], Domenico Di Raimondo [1], Lucio D'Anna [2], Riccardo De Rosa [1], Martina Profita [1], Sergio Ferrantelli [1], Davide Paolo Bernasconi [3], Antonino Tuttolomondo [1]

Affiliations Expand

- PMID: 41170896
- PMCID: PMC12581735
- DOI: 10.1080/07853890.2025.2579789

Abstract

Background and objective: Chronic Obstructive Pulmonary Disease (COPD) is frequently associated with multiple comorbidities that influence clinical outcomes. This study aimed to compare the predictive performance of the Cumulative Illness Rating Scale (CIRS) with the Charlson Comorbidity Index (CCI) and COMCOLD Index for moderate-to-severe COPD exacerbations.

Materials and methods: We conducted a prospective observational study involving 200 COPD patients followed for 52 weeks. CIRS indices (Total Score, Severity Index, Comorbidity Index), CCI, and COMCOLD were calculated at baseline. The primary outcome was time-to-first moderate-to-severe exacerbation. Cox regression analyses and time-dependent receiver operating characteristic curves were used to assess prognostic performance at 12, 24, and 52 weeks.

Results: During follow-up, 66 patients (33%) experienced at least one moderate-to-severe exacerbation. All CIRS indices demonstrated significant correlations with respiratory parameters and symptom burden. In crude models, CIRS indices were significantly associated with exacerbation risk (CIRS-TS: HR 1.11, 95%CI 1.06-1.16; CIRS-SI: HR 1.16, 95%CI 1.09-1.23; CIRS-CI: HR 1.37, 95%CI 1.20-1.56; all $p < 0.001$), maintaining significance after adjustment for clinical covariates. CIRS indices demonstrated superior discriminative performance compared to CCI and COMCOLD, with CIRS-SI achieving the highest time-dependent AUC values across all timepoints (0.704, 0.679, and 0.778 at 12, 24, and 52 weeks, respectively).

Conclusion: CIRS provides superior prognostic accuracy compared to established comorbidity indices in identifying COPD patients at increased risk of exacerbations. These findings highlight the clinical relevance of incorporating a comprehensive, severity-weighted comorbidity assessment in COPD management, supporting the concept of COPD as a complex, multisystem disorder requiring an integrated approach to care.

Keywords: CIRS; COMCOLD; COPD; Charlson Comorbidity Index; Comorbidity; Cumulative Illness Rating Scale; acute exacerbation of COPD.

Plain language summary

In elderly patients with COPD, CIRS provided superior prognostic accuracy for moderate-to-severe exacerbations compared with the Charlson Comorbidity Index and COMCOLD;The prognostic advantage of CIRS likely derives from its comprehensive, severity-weighted assessment of multimorbidity across multiple organ systems;Incorporating multidimensional comorbidity evaluation, such as CIRS, into clinical practice may improve risk stratification and support more personalized COPD management.

Conflict of interest statement

No potential conflict of interest was reported by the author(s).

- **40 references**

Supplementary info

Publication types, MeSH termsExpand

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Cite

7

Review

Ageing Res Rev

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. 2025 Dec:112:102897.

doi: 10.1016/j.arr.2025.102897. Epub 2025 Sep 9.

Prognostic effects of multimorbidity clusters on health outcomes in adults: A systematic review and meta-analysis

Jing Xi [1], Miao Miao [1], Polly W C Li [2], Doris S F Yu [3]

Affiliations Expand

- **PMID: 40934974**

- **DOI: 10.1016/j.arr.2025.102897**

Abstract

Background: Multimorbidity is an important global health concern. We evaluated the prognostic impacts of multimorbidity clusters on health outcomes in adults.

Methods: This study was registered in PROSPERO (CRD42024528148), and no funding was received. Eight databases (PubMed, EMBASE, Cochrane Library, Web of Science, PsycINFO, CINAHL, Wan Fang, and CNKI) were searched for longitudinal studies reporting the prognostic impacts of multimorbidity clusters. Methodological quality was assessed using Newcastle-Ottawa Scale. Data analysis incorporated narrative synthesis, random-effects meta-analysis, subgroup analysis, meta-regression, sensitivity analysis, and Egger's test.

Results: Forty articles identifying 12 multimorbidity clusters were included. Cardiometabolic multimorbidity (adjusted hazard ratio [HR]: 1.97, 95 % confidence interval [CI]: 1.76-2.21; adjusted odds ratio [OR]: 1.44, 95 % CI: 1.16-1.80) had strong prognostic impact on all-cause mortality, followed by cardiopulmonary (adjusted HR: 1.70, 95 % CI: 1.38-2.09), and digestive multimorbidity (adjusted HR: 1.46, 95 % CI: 1.11-1.93). It also predicted circulatory (adjusted HR: 3.41, 95 % CI: 2.27-5.12) and cancer mortality (adjusted HR: 1.32, 95 % CI: 1.04-1.67), activities of daily living disability (adjusted OR: 1.76, 95 % CI: 1.57-1.99), and depression (adjusted OR: 1.53, 95 % CI: 1.27-1.85). Multi-system multimorbidity predicted all-cause mortality (adjusted OR: 1.41, 95 % CI: 1.12-1.77) and activities of daily living disability (adjusted OR: 2.04, 95 % CI: 1.36-3.05). Cardiometabolic multimorbidity predicted a higher risk of all-cause mortality when identified using a pre-determined method.

Conclusion: Multimorbidity clusters strongly impact activities of daily living, depression, and mortality, with cardiometabolic multimorbidity warranting particular attention. However, due to methodological limitations, heterogeneity, Asian-dominant samples, and language bias, these results should be interpreted with caution.

Keywords: Meta-analysis; Multimorbidity cluster; Prognosis; Systematic review.

Conflict of interest statement

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

Supplementary info

Publication types, MeSH termsExpand

Full text links

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Cite

8

Diabetes Obes Metab

. 2025 Dec;27(12):6968-6978.

doi: 10.1111/dom.70095. Epub 2025 Sep 8.

Investigating multimorbidity trajectories in people living with MASLD diagnosis: A trajectory analysis using the UK Biobank

Fang Lu [1 2], Hailin Yang [1 2], Bingyang She [1 2], Qianhui Lu [3], Yining Bao [1 2], Wai-Kay Seto [4 5], William C W Wong [6 7], Man-Fung Yuen [8], Yingli He [9], Xinyuan He [10], Fanpu Ji [10], Lei Zhang [1 2 11 12]

Affiliations Expand

- PMID: 40919650
- PMCID: PMC12587229
- DOI: 10.1111/dom.70095

Abstract

Background: Metabolic dysfunction-associated steatotic liver disease (MASLD) is an emerging global health concern, and its presence increases the risk of multi-system diseases. This study aimed to investigate the multimorbidity trajectories of chronic diseases in people living with MASLD.

Methods: We identified 137 859 MASLD patients in UK Biobank and used 'propensity score matching' to match an equal number of non-MASLD controls. Diseases were reclassified into 472 categories based on the International Classification of Diseases, Tenth Revision (ICD-10) chapters. Multimorbidity trajectories post-MASLD diagnosis were mapped using validated trajectory analysis. We introduced the 'Multimorbidity Trajectory Position Index (MTPI)' to denote a disease's position across trajectories, highlighting its temporal pattern.

Results: Participants had a median age of 59 (52-64) years, with 65.6% being male. Over 13 years of follow-up, Phenome-wide association analysis (PheWAS) identified 128 diseases with elevated risks post-MASLD diagnosis, with obesity (HR: 8.77, 95% CI: 8.37-9.18), diabetes (HR: 4.34, 95% CI: 4.15-4.53), and sleep disorders (HR: 3.21, 95% CI: 3.01-3.42) showing the strongest associations. Trajectory analysis revealed 6637 common trajectories involving 69 diseases, grouped into metabolic, inflammatory, and cardiovascular clusters. These clusters are linked to downstream conditions, with intermediary diseases such as hypertension, diabetes, and inflammatory arthritis, ultimately leading to electrolyte imbalances and sepsis. MTPI demonstrated a gradient in disease progression, with early-stage conditions

showing low values, mid-stage conditions moderate values, and late-stage conditions high values.

Conclusion: People living with MASLD demonstrated multimorbidity trajectories involving co-occurrence of metabolic diseases, chronic inflammation, and cardiovascular diseases. If replicated, these pathways may serve as promising targets to improve late-life health in individuals with MASLD.

Keywords: UK Biobank; disease trajectory; metabolic dysfunction-associated steatotic liver disease; multimorbidity; non-alcoholic fatty liver disease.

Conflict of interest statement

The authors declare that they have no competing interests.

- 47 references
- 4 figures

Supplementary info

MeSH terms, Grants and fundingExpand

Full text links

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Cite

9

Review

Ageing Res Rev

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. 2025 Dec:112:102870.

doi: 10.1016/j.arr.2025.102870. Epub 2025 Aug 13.

Biomarkers of multimorbidity: A systematic review

Maria Beatrice Zazzara [1], Federico Triolo [2], Leonardo Biscetti [3], Ersilia Paparazzo [4], Marco Fiorillo [5], Davide Liborio Vetrano [6], Graziano Onder [7]; BIO-SIGN Study Investigators

Affiliations Expand

- PMID: 40816451

- DOI: 10.1016/j.arr.2025.102870

Free article

Abstract

The development of multiple chronic diseases in the same individual (i.e., multimorbidity) results from the loss of homeostasis across several biological systems. Identifying pathophysiological pathways common to multiple diseases, using accessible biomarkers, could increase our understanding of multimorbidity and improve its prognostication and management. We conducted a systematic review of peer-reviewed articles published till September 2024 that investigated biomarkers of multimorbidity. Due to study heterogeneity, a synthesis without meta-analysis was performed on 43 studies employing harvest plots based on direction of effect, sample size and study quality. Findings highlight how inflammatory and metabolic biomarkers, such as interleukin-6 (IL-6) and glycated haemoglobin (HbA1c) especially, but also triglycerides, low-density lipoprotein (LDL) cholesterol and kidney and liver markers, along with markers of neurodegeneration including Neurofilament Light Chain (NfL) and Phospho-Tau 217 (p-tau 217), were directly associated with multimorbidity. Nonetheless, evidence for hormonal and vascular activation markers, as well as more novel geroscience biomarkers, remains limited. These markers could have a key role in identifying individuals at high risk of developing or worsening multimorbidity. The review also highlights how methodological challenges, including heterogeneity in study design, populations, and multimorbidity definitions, impact on comparability and generalizability of findings. Addressing these gaps through standardized, longitudinal studies and multi-omics approaches is crucial to improve our understanding of the pathophysiological mechanisms of multimorbidity. In summary, this review outlines the independent association of diverse biomarkers with multimorbidity, opening to the possibility of identifying specific pathophysiological pathways for risk stratification and possible target of future personalized interventions.

Keywords: Aging; Biomarkers; Individualized care; Multimorbidy; Pathophysiological pathways.

Conflict of interest statement

Declaration of Competing Interest None of the authors declare conflicts of interest to disclose.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links

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Psychol Health Med

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. 2025 Dec;30(10):2207-2223.

doi: 10.1080/13548506.2025.2502841. Epub 2025 May 7.

Individual and joint associations of depression and physical multimorbidity with all-cause mortality: a prospective cohort study

Qingcui Wu [1], Zhilin Li [1], Naijian Zhang [1], Huijie Huang [1], Siting Wang [1], Yuanyuan Liu [1], Jiageng Chen [1], Jun Ma [1]

Affiliations Expand

- PMID: 40336250

- DOI: 10.1080/13548506.2025.2502841

Abstract

The study aimed to investigate the separate, interactive, and combined effects of depression and physical multimorbidity on all-cause mortality using data from the National Health and Nutrition Examination Survey (NHANES) 2005-2016. Depression was assessed using the Patient Health Questionnaire-9 (PHQ-9), and multimorbidity was defined as the presence of ≥ 2 chronic conditions. Cox proportional hazards models were used to assess these associations. During a median follow-up of 8.3 years (interquartile range, 5.4-11.4), 3,005 deaths occurred. After adjusting for potential confounders and multimorbidity, each one-point increase in depression score was associated with a 3% higher risk of mortality (hazard ratio [HR]: 1.03, 95% confidence interval [CI]: 1.02-1.04). Compared to those without depressive symptoms, mild and moderate to severe symptoms were linked to a 27% (HR: 1.27, 95% CI: 1.11-1.47) and 37% (HR: 1.37, 95% CI: 1.17-1.61) higher mortality risk, respectively. However, among women, only moderate to severe depression was significantly associated with increased mortality (HR: 1.50, 95% CI: 1.19-1.89). After adjusting for potential confounders and depression, multimorbidity was associated with a 64% higher mortality risk (HR: 1.64, 95% CI: 1.46-1.86). No significant interaction between depression and multimorbidity was found. Joint analysis showed that among participants without multimorbidity, moderate to severe depressive symptoms increased mortality risk (HR: 1.54, 95% CI: 1.09-2.17). In those

with multimorbidity, risk increased with depression severity, peaking at HR: 2.22 (95% CI: 1.85-2.65). These findings highlight depression and multimorbidity as independent mortality risk factors, with their combined presence further amplifying this risk.

Keywords: Depression; NHANES; all-cause mortality; chronic physical conditions; multimorbidity.

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

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Thorax

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. 2025 Dec 3:thorax-2025-223961.

doi: 10.1136/thorax-2025-223961. Online ahead of print.

Blood eosinophil-guided systemic corticosteroid duration in adults hospitalised for asthma exacerbation: a randomised, controlled, open-label, non-inferiority trial

Anthony Yii [1], Tunn Ren Tay [2], Ken Cheah Hooi Lee [3], Si Yuan Chew [3], Nicole Yu-Fang Sieow [2], Xue Ning Choo [2], Ming Ren Toh [2], Sean Chee Hong Loh [2], Pei Yee Tiew [3 4], Jansen Meng Kwang Koh [2], Augustine K H Tee [2], Mariko Siyue Koh [3 5]

Affiliations Expand

- **PMID: 41339088**

- **DOI: 10.1136/thorax-2025-223961**

Abstract

Objective: Systemic corticosteroids for 5-7 days are standard care for asthma exacerbations, but the optimal duration and potential for precision prescribing remain unclear. Biomarker-guided approaches could reduce corticosteroid exposure without compromising outcomes. We aimed to evaluate whether the blood eosinophil count can be used to safely reduce systemic corticosteroid exposure in hospitalised asthma exacerbations.

Methods: In this open-label, two-centre randomised trial, adults hospitalised for asthma exacerbation were assigned 1:1 to usual care (5 days prednisolone) or eosinophil-guided care using blood eosinophil counts obtained prior to corticosteroid administration (3 days if eosinophils <300 cells/μL; 5 days if ≥300 cells/μL). The primary outcome was non-inferiority of treatment failure rates

(composite of extension of steroid duration, mechanical ventilation or death), with a prespecified 20% non-inferiority margin.

Results: Among 110 randomised patients (55 per group), 60% were eosinophilic, and 40% non-eosinophilic. Treatment failure occurred in 6/55 (10.9%) of eosinophil-guided versus 4/55 (7.3%) of usual care patients, with a 3.6% absolute difference (95% CI -8.9% to 16.2%), meeting non-inferiority. Cumulative corticosteroid dose per patient was similar between groups but significantly lower for non-eosinophilic than eosinophilic exacerbations in the eosinophil-guided group (136 vs 214 mg; p=0.0004), a difference not observed in usual care (186 vs 211 mg; p=0.18). Length of stay, Asthma Control Questionnaire-5 change, additional steroid bursts at 14 days or time to next exacerbation up to 1 year showed no significant differences.

Conclusion: Eosinophil-guided therapy safely reduced systemic corticosteroid exposure in non-eosinophilic exacerbations while maintaining non-inferior outcomes in this proof-of-concept trial.

Trial registration number: NCT05417906.

Keywords: Asthma; Glucocorticoids.

Conflict of interest statement

Competing interests: None declared.

Supplementary info

Associated dataExpand

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Cite

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Case Reports

Cureus

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. 2025 Nov 30;17(11):e98175.

doi: 10.7759/cureus.98175. eCollection 2025 Nov.

Acute Eosinophilic Myocarditis and Heart Failure As the First Manifestation of Eosinophilic Granulomatosis With Polyangiitis (EGPA) in an Asthmatic Patient: A Diagnostic Challenge

Ei M Mon [1], Trisha Singh [1], Laith Aldabbagh [1], Aung Hein [1], Christopher J Boos [2 3]

Affiliations Expand

- PMID: 41333487
- PMCID: PMC12666236
- DOI: 10.7759/cureus.98175

Abstract

Eosinophilic granulomatosis with polyangiitis (EGPA) is a rare necrotizing vasculitis that affects multiple organ systems. Asthma is a hallmark clinical feature of the syndrome. Cardiac involvement is uncommon but constitutes one of the most severe and potentially life-threatening manifestations of the disease. We present a challenging diagnostic case of a 68-year-old woman with a history of asthma who presented with features suggestive of acute coronary syndrome and elevated cardiac troponin levels. Coronary angiography revealed only mild atheroma. The combination of a negative angiogram, marked eosinophilia, significantly elevated troponin, and cardiac dysfunction on imaging led to the diagnosis of EGPA-associated myocarditis. In this case, the disease initially manifested with cardiac symptoms, followed by subsequent renal impairment. Corticosteroid and immunosuppressive therapy effectively and rapidly controls disease activity. A multidisciplinary approach is essential in achieving optimal patient outcomes.

Keywords: acute kidney injury; asthma; eosinophilic granulomatosis with polyangiitis (egpa); heart failure; myocarditis; vasculitis.

Conflict of interest statement

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. Conflicts of interest: In compliance with the ICMJE uniform disclosure form, all authors declare the following: Payment/services info: All authors have declared that no financial support was received from any organization for the submitted work. Financial relationships: All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. Other relationships: All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

- 8 references
- 5 figures

Supplementary info

Publication typesExpand

Proceed to details

Cite

3

BMC Immunol

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. 2025 Dec 3.

doi: 10.1186/s12865-025-00777-6. Online ahead of print.

Efficacy and safety of Depemokimab in asthma with eosinophilic phenotype: a systematic review and meta-analysis of randomized controlled trials

Basir Afzaal Gill [#1], Anum Ijaz [#2], Noor Fatima [3], Arsalan Ahmed [4], Ayesha Noor [5], Samia Sharif [6], Ishrat Fatima [2], Amna Saeeda [7], Hansa Devi [8], Muhammad Nabeel Saddique [9 10 11]

Affiliations Expand

- PMID: 41331792

- DOI: 10.1186/s12865-025-00777-6

Abstract

Introduction: Asthma is a complex and heterogeneous disease that significantly impacts quality of life. Eosinophilic asthma, characterized by elevated eosinophil levels, leads to inflammation and hypersensitivity. Many patients remain inadequately managed, resulting in frequent exacerbations and hospitalizations despite standard treatment options. Depemokimab, a long-acting monoclonal antibody that targets IL-5, could offer a novel approach for managing severe eosinophilic asthma.

Methods: A systematic search was conducted across the PubMed, Cochrane Library, Embase, ClinicalTrials.gov, and Scopus databases up to January 2025. Dichotomous outcomes were pooled as risk ratios (RR), and continuous outcomes were represented as mean differences (MD) from baselines, with 95% confidence intervals (CIs), using a random-effects model. Statistical analysis was performed using RevMan (version 5.4).

Results: Two randomized controlled trials (n = 762) were included. Depemokimab significantly reduced the annualized rate of exacerbations (MD -0.59, 95% CI [-0.76 to -0.42], P < 0.00001) and improved the St. George's Respiratory Questionnaire (SGRQ) score (MD -2.93, 95% CI [-5.48 to -0.38], P = 0.02). It also significantly decreased the annualized rate of exacerbations requiring hospitalization or emergency department visits (RR 0.33, 95% CI [0.15 to 0.75], P = 0.008). No

significant differences were observed in changes to the Asthma Control Questionnaire (ACQ-5) score, pre-bronchodilator FEV1, or asthma-related diaries. Safety outcomes indicated significantly lower risks for pneumonia, nasopharyngitis, rhinitis, and back pain in the Depemokimab group. However, an increased risk of allergic rhinitis was noted (RR 2.71, 95% CI [1.22 to 6.02], P = 0.01). No significant differences were observed in serious adverse events or other adverse events.

Conclusion: Depemokimab demonstrates promising efficacy in reducing clinically significant exacerbations and improving quality of life measures in patients with severe eosinophilic asthma, with a generally favorable safety profile. However, the current evidence is limited to two trials with relatively short follow-up periods. Further research with larger, more diverse patient populations and extended long-term follow-up is needed to establish the drug's definitive place in therapeutic algorithms and to comprehensively evaluate potential long-term safety concerns before widespread clinical implementation can be recommended.

Keywords: Asthma; Depemokimab; Meta-Analysis; Monoclonal antibody.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: Ethics approval and consent to participate is not applicable as this study involves publicly available data. Consent for publication: Consent for publication is not applicable as this study involves publicly available data. Competing interests: The authors declare no competing interests.

- 21 references

Proceed to details

Cite

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Curr Opin Allergy Clin Immunol

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. 2025 Dec 2.

doi: 10.1097/ACI.0000000000001129. Online ahead of print.

Modifying the course of asthma: mechanisms and strategies for clinical remission

Benedetta Bondi [1 2], Diego Bagnasco [1 2], Fulvio Braido [1 2]

Affiliations Expand

- PMID: 41330485

- DOI: 10.1097/ACI.0000000000001129

Abstract

Purpose of review: Asthma management is ongoing a paradigm shift from symptom control and exacerbation prevention toward the more comprehensive goal of clinical remission. This review is timely because biologic therapies, precision medicine, and improved understanding of immunopathological mechanisms have made remission a realistic therapeutic goal. By integrating clinical, functional, and biological outcomes, remission offers a more comprehensive framework for assessing long-term disease control.

Recent findings: Recent evidence demonstrate that biologic drugs, such as Mepolizumab, Omalizumab, Dupilumab, Benralizumab, and Tezepelumab, allow clinical remission to be achieved in many patients affected by severe asthma particularly those who show a phenotyping polarized toward T2-High. Lifestyle change, particularly weight loss and smoking cessation, early intervention, and the use of allergen immunotherapy may increase the chances of achieving remission. Real-world data confirm that remission rates vary depending on the definition applied, going from clinical to complete remission, highlighting the lack of a universally shared definition of remission and the need for standardized criteria.

Summary: Clinical remission in asthma is now a feasible target. Achieving this goal requires a multidimensional approach that integrates biologics, early treatment, comorbidity management, and lifestyle interventions. Standardized definitions and biomarkers are essential to guide therapeutic decisions and predict long-term outcomes.

Keywords: asthma; biologics; clinical remission; precision medicine; severe asthma.

- 34 references

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BMC Pulm Med

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. 2025 Dec 1;25(1):551.

doi: 10.1186/s12890-025-03987-1.

Occupational airborne exposures and asthma mortality - examining asthma as the underlying and contributing cause of death

Kjell Torén [1 2], Nicola Murgia [3], Maria Åberg [4 5], Martin Andersson [6], Bengt Järvholm [6]

Affiliations Expand

- PMID: 41327278
- PMCID: PMC12667042
- DOI: 10.1186/s12890-025-03987-1

Abstract

Background: The aim was to elucidate whether occupational airborne exposures increases asthma mortality.

Methods: The study comprised men in the Swedish construction industry who participated in health controls in 1971-1993. Exposure was assessed using a job-exposure matrix with focus on exposures in the mid-1970s. Mortality from asthma in 1987-2015 was compared between 147,101 workers exposed to occupational airborne exposures and 26,879 foremen, using underlying and contributory cause of death from the Swedish Cause of Death Register. Mortality was assessed as relative risk with 95% confidence intervals using Poisson regression models adjusting for age, smoking, body mass index, and calendar time.

Results: Among exposed workers, there were 82 deaths with asthma as the underlying cause and 212 deaths with asthma as the contributory cause vs. ten and 21 deaths in the controls. The asthma mortality based on the underlying and contributory cause was 1.92 (1.31-2.83) in relation to inorganic dust, 2.17 (1.47-3.20) in relation to fumes, 1.60 (1.04-2.47) in relation to gases, and 1.79 (1.09-2.96) in relation to wood dust. Using only the underlying cause of death showed similar mortality estimates, but with wider confidence intervals including unity.

Conclusions: Occupational airborne exposures increased the asthma mortality, underscoring the need for further reduction of the airborne occupational exposures. Workers with asthma should be given information about the effects of exposure and support to decrease exposure. The study shows the importance of using both contributing and underlying cause of death in studies assessing asthma mortality risk in relation to air pollutants.

Keywords: Cohort; Epidemiology; Lung diseases; Relative risk; Work.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The study was approved by the Committee of Ethics at Umeå University 2016-308-31. The research was conducted in compliance with the Helsinki Declaration. A formal informed consent has not been obtained from the participants. This was deemed as unnecessary

according to the Swedish legislation and the Swedish Ethical Review Authority. The Authority's data protection officer can be reached at the following email address: https://dataskyddsombud@etikprovning.se . Competing interests: The authors declare no competing interests.

- **33 references**

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Hosp Pediatr

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. 2025 Dec 2:e2025008607.

doi: 10.1542/hpeds.2025-008607. Online ahead of print.

Comparing Illness Severity Classifications for Children Hospitalized With Asthma

Alexandra Byrne [1 2], Matt Hall [3], Jay Berry [4], Jordan Tyris [5], Mario Reyes [1 2], Joanna Perdomo [2 6], Kavita Parikh [5]

Affiliations Expand

- **PMID: 41325985**

- **DOI: 10.1542/hpeds.2025-008607**

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Review

Pulm Ther

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. 2025 Dec 1.

doi: 10.1007/s41030-025-00323-0. Online ahead of print.

Misconceptions of Traits to Predict Response to Inhaled Corticosteroid and Bronchodilator Therapies in Asthma: A Narrative Review

Guy Brusselle [1], Jodie Crawford [2], Peter G Gibson [3 4], David Leather [5], Alison Moore [6], John J Oppenheimer [7], Ian D Pavord [8], Marcus Stanaland [9], Emilio Pizzichini [5 10]

Affiliations Expand

- **PMID: 41324781**

- **DOI: 10.1007/s41030-025-00323-0**

Free article

Abstract

The "treatable traits" approach to asthma management has helped revolutionize severe asthma treatment with biologic therapy and includes using biomarkers to identify patients most likely to benefit from a specific treatment. The ability to understand which characteristics predict response to inhaled corticosteroid (ICS) or bronchodilator therapy in mild and moderate-to-severe asthma is also vital for physicians to provide treatment tailored to an individual's phenotype/endotype. Here, we identified studies of inhaled treatments in asthma exploring treatment outcomes based upon subgroups of baseline characteristics, including type 2 biomarkers, asthma attack history, baseline lung function, bronchodilator reversibility, patient age and age at asthma onset, body mass index, smoking status, sex, and ethnicity. We assessed the available evidence regarding the influence of each characteristic on lung function, asthma attacks or asthma control in patients with asthma following treatment with either ICS, ICS/long-acting β_2-agonist (LABA) therapy, or ICS/LABA/long-acting muscarinic antagonist therapy. Of all the characteristics examined, only type 2 biomarkers (blood eosinophil levels and fractional exhaled nitric oxide) appear to consistently predict treatment response, particularly regarding ICS. For all other characteristics, we found either evidence that baseline values are not predictive of response to inhaled treatment or mixed and inconclusive evidence requiring further investigation.

Keywords: Asthma; Biomarker; Eosinophil; Exacerbation; FeNO; Treatment response.

Conflict of interest statement

Declarations. Conflict of interest: Guy Brusselle has received speaker fees from and served on advisory boards for AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, MSD, Novartis, and Sanofi. Peter G. Gibson has received speaker's fees, and research grants from AstraZeneca, Chiesi, GSK, and Novartis. John J. Oppenheimer has served on adjudication committees or data and safety monitoring boards for AstraZeneca, GSK, Novartis, and Sanofi/Regeneron, and has received grants and personal fees from GSK. Ian D. Pavord has received speaker's honoraria for speaking at sponsored meetings from AstraZeneca, Aerocrine, Almirall, Sanofi/Regeneron, Menarini, and GSK, and payments for organizing educational events from AstraZeneca, GSK, and Sanofi/Regeneron. He has received honoraria for attending advisory panels with Sanofi/Regeneron, AstraZeneca, GSK, Merck, Circassia, Chiesi, and Areteia. He has received sponsorship to attend international scientific meetings from GSK, AstraZeneca, and Sanofi/Regeneron. David Leather and Emilio Pizzichini are former employees of GSK and David Leather holds financial equities in GSK. Jodie Crawford, Alison Moore, and Marcus Stanaland are employees of GSK and hold financial equities in GSK. Ethical Approval: Ethical approval was not required as this article is based on previously conducted studies and does not contain any new studies with human participants or animals performed by any of the authors.

- **84 references**

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Allergy

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. 2025 Dec 1.

doi: 10.1111/all.70131. Online ahead of print.

Allergic Rhinitis and Its Impact on Asthma (ARIA)-EAACI Guidelines-2024-2025 Revision: Part I-Guidelines on Intranasal Treatments

Bernardo Sousa-Pinto [1,2], Jean Bousquet [3,4,5], Rafael José Vieira [1,2], Holger J Schünemann [4,6,7], Torsten Zuberbier [3,4,6], Antonio Bognanni [6,7], Alkis Togias [8], Boleslaw Samolinski [9], Arunas Valiulis [10,11], Sian Williams [12], Anna Bedbrook [5], Wienczyslawa Czarlewski [5,13], Maria Jose Torres [14], Mohamed H Shamji [15], Mário Morais-Almeida [16], G Walter Canonica [7,17], Leticia de Las Vecillas [18], Mark S Dykewicz [19], Cristina Jacomelli [20], Ludger Klimek [21,22], Lucas Leemann [23], Olga Lourenço [24], Yuliia Palamarchuk [25], Nikolaos G Papadopoulos [26], Ana Margarida Pereira [1,27,28], Marine Savouré [29,30,31], Sanna K Toppila-Salmi [32,33], Maria Teresa Ventura [34,35], Juan José Yepes-Nuñez [36,37], Alvaro A Cruz [38], Giorgio Ciprandi [39], Bilun Gemicioglu [40], Mattia Giovannini [41,42], Brigita Gradauskiene [43], Tuomas Jartti [44], Miloš Jeseňák [45,46,47], Piotr Kuna [48], Violeta Kvedariene [49,50], Désirée E Larenas-Linnemann [51], Amir Ha Latiff [52], Yousser Mohammad [53,54], Ken Ohta [55], Padukudru A Mahesh [56], Isabella Pali-Schöll [57], Oliver Pfaar [58], Frederico S Regateiro [59,60,61,62], Nicolas Roche [63,64,65], Luís Taborda-Barata [62,66], Charlotte Suppli Ulrik [67,68], Marylin Valentin Rostan [69], Giovanni Viegi [70], Luo Zhang [71], Tari Haahtela [72], Ivan Cherrez-Ojeda [73,74], Juan Carlos Ivancevich [75], Nikolai Khaltaev [76], Arzu Yorgancioglu [77], Baharudin Abdullah [78], Mona Al-Ahmad [79], Maryam Ali Al-Nesf [80], Rita Amaral [1,2,81,82], Julijana Asllani [83], Karl-C Bergmann [3,4], Jonathan A Bernstein [84], Michael S Blaiss [85], Fulvio Braido [86,87], Paulo Camargos [88], Pedro Carreiro-Martins [89,90], Thomas Casale [91], Lorenzo Cecchi [92], Alessandro Fiocchi [93], Antonio F M Giuliano [94], George Christoff [95], Ieva Cirule [96], Jaime Correia de Sousa [97], Elisio M Costa [98], Stefano Del Giacco [99], Philippe Devillier [100], Dejan Dokic [101], Elham Hossny [102], Tomohisa Iinuma [103], Carla Irani [104], Zhanat Ispayeva [105], Kaja Julge [106], Igor Kaidashev [107], Kazi S Bennoor [108], Helga Kraxner [109], Inger Kull [110,111], Marek Kulus [112], Maciej Kupczyk [48], Andriy Kurchenko [113], Stefania La Grutta [114], Neven Miculinic [115], Lan Le Thi Tuyet [116], Michael Makris [117], Branislava Milenkovic [118], Sang Min Lee [119], Stephen Montefort [120], Andre Moreira [121,122,123], Joaquim Mullol [124,125], Rachel Nadif [65,126], Alla Nakonechna [127,128], Hugo E Neffen [129], Marek Niedoszytko [130], Dieudonné Nyembue [131], Robyn E O'Hehir [132], Ismail Ogulur [133], Yoshitaka Okamoto [134,135], Heidi Olze [136], Oscar Palomares [137], Petr Panzner [138], Vincenzo Patella [139,140,141], Ruby Pawankar [142], Constantinos Pitsios [143], Todor A Popov [144], Francesca Puggioni [145], Santiago Quirce [18], Agné Ramonaitė [146,147], Marysia Recto [148], Maria Susana Repka-Ramirez [149], Graham Roberts [150,151,152], Karla Robles-Velasco [73,74,153], Menachem Rottem [154,155], Marianella Salapatas [156], Joaquin Sastre [157], Nicola Scichilone [158], Juan-Carlos Sisul [159], Dirceu Solé [160], Manuel E Soto-Martinez [161], Milan Sova [162], Pongsakorn Tantilipikorn [163], Ana Todo-Bom [164], Vladyslav Tsaryk [113], Ioanna Tsiligianni [165,166], Marilyn Urrutia-Pereira [167], Erkka Valovirta [168], Tuula Vasankari [169,170], Dana Wallace [171], De Yun Wang [172], Margitta Worm [173], Osman M Yusuf [174], Mihaela Zidarn [175,176], Sara Gil-Mata [1,2], Manuel Marques-Cruz [1,2], Bassam Mahboub [177,178], Ignacio J Ansotegui [179], Antonino Romano [180,181], Werner Aberer [182], Maria Cristina Artesani [93], Elena Azzolini [17], Bruno Barreto [183], Joan Bartra [184,185], Sven Becker [186], Bianca Beghe [187], Attilio Boner [188], Ewa Borowiack [189,190], Jacques Bouchard [191], Melisande Bourgoin-Heck [192,193,194], Luisa Brussino [195,196], Roland Buhl [197], José Antonio Castillo-Vizuete [198,199], Denis Charpin [200], Niels H Chavannes [201,202], Marta Chełmińska [203], Lei Cheng [204], Ekaterine Chkhartishvili [205], Seong H Cho [206], Herberto Jose Chong-Neto [207], Deepa Choudhury [208], Derek K Chu [6,209], Cemal Cingi [210], Enrico Compalati [211], Raquel

Albuquerque Costa [1], Olga Mariana Cunha [212], Biljana Cvetkovski [213], Victoria Cardona-Dahl [214 215], Gennaro D'Amato [216], Janet Davies [217 218], Danilo Di Bona [219], Sandra N Gonzalez Diaz [220], Maria V Dimou [26], Maria Doulaptsi [221], Renato Ferreira-da-Silva [1 2], Radoslaw Gawlik [222], Mario Calvo-Gil [223], Ozlem Goksel [224], Maximiliano R Gómez [225], Maia Gotua [226], Christos Grigoreas [227], Ineta Grisle [228], Maria Antonieta Guzman [229], Rachel House Tan [230 231], Michael Hyland [232], Despo Ierodiakonou [233], Aspasia Karavelia [234], Paul Keith [235], Marta Kisiel [236], Tanja Soklic Kosak [237], Mitja Kosnik [238 239], Ilgim Vardaloglu Koyuncu [240], Vicky Kritikos [241 242], Justyna Litynska [189 190], Carlo Lombardi [243], Gilles Louis [244 245], Matteo Martini [246 247], Cem Meço [248 249 250], Eris Mesonjesi [251], Florin Mihaltan [252], Marcin Moniuszko [253], Robert N Naclerio [254], Kari C Nadeau [255], Sophia Neisinger [3 4], Markus Ollert [256 257], Michal Ordak [258], Giovanni Paoletti [7 145], Hae-Sim Park [259], Elena Parmelli [17 260], Edgar Arturo Perdomo-Flores [261], José Miguel Fuentes Pérez [262], Nhan Pham-Thi [263 264 265], Emmanuel Prokopakis [221], Inês Ribeiro-Vaz [1 2], Giovanni Rolla [195], Jan Romantowski [130], Philippe Rombaux [266], Philip W Rouadi [267 268], Maia Rukhadze [269], Dermot Ryan [270], Ewelina Sadowska [189 190], Daiju Sakurai [271], Laila Salameh [272], Faradiba Serpa Sarquis [273], Elie Serrano [274], Jane Da Silva [275 276], Michael Soyka [277], Krzysztof Specjalski [130], Vesna Tomic-Spiric [278 279], Katarina Stevanovic [3 4], Abirami Subramaniam [280], Maria Do Ceu Teixeira [281 282], Tuuli Thomander [1 283 284], Martina Vachova [285 286], Marianne van Hage [287 288 289], Pakit Vichyanond [290 291], Martin Wagenmann [292], Fanny Wai San Ko [293], Pascal Werminghaus [294], Paraskevi Vicky Xepapadaki [26], Yi-Kui Xiang [3 4 295], Qintai Yang [296], Daniela Rivero Yeverino [297], Jaron Zuberbier [136], João A Fonseca [1 2]

Affiliations Expand

- **PMID: 41324154**

- **DOI: 10.1111/all.70131**

Abstract

Background: Allergic rhinitis (AR) impacts quality of life, work and school productivity. Over the last years, an important body of evidence resulting from mHealth data has led to a better understanding of AR. Such advances have motivated an EAACI-endorsed update of the Allergic Rhinitis and its Impact on Asthma (ARIA) guidelines (ARIA 2024-2025). This manuscript presents the ARIA 2024-2025 recommendations for intranasal treatments, one of the mainstays for AR management.

Methods: The ARIA 2024-2025 guideline panel issued recommendations following the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) evidence-to-decision framework. Several sources of evidence were used to inform panel judgments and recommendations, including systematic reviews, evaluation of mHealth and pharmacovigilance data, as well as a survey of experts on costs.

Results: Eleven guideline questions concerning intranasal treatments for AR were prioritized, leading to recommendations. Overall, these questions concern the choice between different classes of intranasal medications-most notably, intranasal

corticosteroids (INCS), antihistamines (INAH), fixed combinations of INAH+INCS and decongestants-or between different individual medications within each class. Four questions had not been evaluated in previous ARIA guidelines, while for the other three there was a change in the strength or directionality of recommendations. Overall, recommendations point to the suggested use of INAH+INCS over INAH or INCS and INCS over INAH.

Conclusion: This ARIA 2024-2025 article supports patients, their caregivers, and healthcare professionals in choosing an intranasal treatment. However, decisions on AR treatment should consider the clinical variability of the disease, patients' values, and the affordability of medications.

Keywords: allergic rhinitis; guidelines; intranasal antihistamines; intranasal corticosteroids.

- 36 references

Supplementary info

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Laryngoscope Investig Otolaryngol

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. 2025 Nov 27;10(6):e70320.

doi: 10.1002/lio2.70320. eCollection 2025 Dec.

Cannabis Use and Risk of Chronic Rhinosinusitis and Sinus Surgery

Austin J Lee [1], Michael W Liu [1], David C Kaelber [2 3 4], Mohamad R Chaaban [5]

Affiliations Expand

- PMID: 41323660

- PMCID: PMC12658615

- DOI: 10.1002/lio2.70320

Abstract

Objective: While cannabis' link to asthma is well-studied, its impact on CRS is less clear. This study explores the association between cannabis use and rates of new-onset chronic rhinosinusitis (CRS), chronic rhinosinusitis with nasal polyps (CRSwNP), and functional endoscopic sinus surgery (FESS) rates.

Methods: The TriNetX Analytics Research Network was queried for adults ≥ 18 years old, stratified into cannabis user and non-user cohorts based on electronic health record data from January 2012 to December 2019. Separate cohorts of patients with pre-existing CRS-with and without cannabis use-were analyzed to evaluate associations with FESS. Primary outcomes were relative risks of new-onset CRS and CRSwNP encounter diagnosis and FESS 1, 2, and 5 years after initial cannabis use diagnosis.

Results: After 1:1 propensity score matching, cohorts analyzing CRS and CRSwNP included 73,091 patients each. Cannabis use was associated with reduced risk of unspecified CRS at 1 year (aRR = 0.87, 95% CI 0.80-0.95), 2 years (aRR = 0.84, 95% CI 0.78-0.90), and 5 years (aRR = 0.83, 95% CI 0.78-0.87). There was no difference in risk of CRSwNP at any timepoints. For FESS outcomes, matched cohorts included 5591 patients with pre-existing CRS; cannabis users had lower risk at 1 year (aRR = 0.67, 95% CI 0.47-0.96), 2 years (aRR = 0.64, 95% CI 0.46-0.88), and 5 years (aRR = 0.69, 95% CI 0.52-0.91).

Conclusions: Patients with cannabis use demonstrated significantly reduced risks in new-onset diagnoses of CRS and FESS compared to non-users. Further studies are warranted to examine the cause of this relationship.

Level of evidence: 4.

Keywords: cannabis use; chronic rhinosinusitis; functional endoscopic sinus surgery.

Conflict of interest statement

The authors declare no conflicts of interest.

- 55 references
- 1 figure

Full text links

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Editorial

Respirology

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. 2025 Nov 30.

doi: 10.1002/resp.70176. Online ahead of print.

Inhaled Corticosteroids for Asthma Treatment in Pregnancy: Benefit Versus Risk?

Vanessa E Murphy [1,2]

Affiliations Expand

- PMID: 41320708

- DOI: 10.1002/resp.70176

No abstract available

Keywords: LABA; asthma; congenital anomalies; exacerbations; inhaled corticosteroid; malformations; pregnancy.

- 10 references

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11

Occup Environ Med

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. 2025 Nov 30:oemed-2025-110183.

doi: 10.1136/oemed-2025-110183. Online ahead of print.

Atopy, asthma symptoms and eosinophilic airway inflammation in British woodworkers

Ruth Eleanor Wiggans [1 2], Jade Sumner [3], Edward W Robinson [3], Charlotte Young [3], Andrew Simpson [3], Timothy Yates [3], David Fishwick [3], Christopher M Barber [3 4]

Affiliations Expand

- PMID: 41320474

- DOI: 10.1136/oemed-2025-110183

Free article

Abstract

Objectives: Despite reducing exposures to wood dust, woodworkers remain at increased risk of asthma. There have been no recent studies of wood dust exposure, respiratory symptoms or asthma in British woodworkers. This cross-sectional study examined factors associated with asthma in British woodworkers across exposure groups.

Methods: Participants answered a reporter-delivered work and respiratory questionnaire, and underwent fractional exhaled nitric oxide (FE_{NO}), spirometry and specific IgE measurements. Wood dust exposure was assigned through a job-exposure matrix. Multiple regression evaluated associations between asthma and factors including exposure, atopy and current asthma symptoms (CAS).

Results: A total of 269 woodworkers participated. Median wood dust exposure was 2.00 mg/m^3 (IQR 1.14 mg/m^3). CAS, work-related respiratory symptoms (WRRS) and eosinophilic airway inflammation (FE_{NO}>40 ppb) were common, present in 46%, 11% and 19% of the cohort, respectively. Atopic woodworkers were more likely to have nasal symptoms (OR 2.13, 95% CI 1.18 to 3.85, p<0.05), WRRS (OR 2.78, 95% CI 1.11 to 6.92, p<0.05), asthma (OR 3.40, 95% CI 1.49 to 7.81, p<0.01) and FE_{NO}>40 ppb (OR 2.00, 95% CI 1.03 to 3.88, p<0.05). No effect was seen for airflow obstruction. Symptomatic workers were more likely to have WRRS and asthma (OR 4.29, 95% CI 2.12 to 8.69, p<0.001) but not FE_{NO}>40 ppb or airflow obstruction. A dose-response effect with wood dust exposure was not seen.

Conclusions: Asthma symptoms were prevalent among British woodworkers, even at low exposure levels. Atopy was associated with asthma, particularly among symptomatic woodworkers. Further studies should phenotype woodworkers at risk of asthma and inform approaches to reduce risk.

Keywords: allergy and immunology; asthma; respiratory function tests; wood; workers.

Conflict of interest statement

Competing interests: None declared.

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Pediatrics

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. 2025 Dec 1;156(Suppl 2):S55.

doi: 10.1542/peds.2025-074246N.

As-Needed Albuterol-Budesonide in Mild Asthma

Braden C Arnold [1], **Girish V Vitalpur** [1]

Affiliations Expand

- **PMID: 41320080**

- **DOI: 10.1542/peds.2025-074246N**

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Pediatrics

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. 2025 Dec 1;156(Suppl 2):S58.

doi: 10.1542/peds.2025-074246NE.

Factors Influencing the Initiation of Biologic Therapy in Children With Severe Asthma: Results of the Pediatric Asthma Noninvasive Diagnostic Approaches (PANDA) Study

Erik Anderson [1], Joyce E Yu [1]

Affiliations Expand

- PMID: 41320050

- DOI: 10.1542/peds.2025-074246NE

No abstract available

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Pediatrics

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. 2025 Dec 1;156(Suppl 2):S57-S58.

doi: 10.1542/peds.2025-074246ND.

Type 1 Immune Responses Related to Viral Infection Influence Corticosteroid Response in Asthma

Erik Anderson [1], Joyce E Yu [1]

Affiliations Expand

- PMID: 41320028

- DOI: 10.1542/peds.2025-074246ND

No abstract available

15

Review

Pediatr Pulmonol

. 2025 Dec;60(12):e71406.

doi: 10.1002/ppul.71406.

Changing the Underlying Causes of Recurrent Pneumonia In Children: A Systematic Review

Paz Quiñones Cabrera [1], M Gratzia Ordóñez Suquilanda [1], Jose A Castro-Rodriguez [2]

Affiliations Expand

- PMID: 41293969

- DOI: 10.1002/ppul.71406

Abstract

Background: Recurrent pneumonia (RP) is a common diagnosis in children, leading to increased morbidity rates, frequent hospitalizations, and longer treatments. Asthma has traditionally been the most common underlying cause. However, recently, other conditions have emerged. Therefore, our goal was to systematically analyze and compare the changes in the underlying causes of RP.

Methods: We searched four databases from their inception until November 2024 for studies in children under 18 years with RP, where the underlying causes were described. To compare changes in the prevalence of underlying causes, we divide them into periods I (1999-2013) and II (2014-2024).

Results: Twenty-two studies (n = 3440 children with RP) met the final criteria for analysis. In 94% of the patients, an underlying cause was identified. Among the 39 underlying conditions described, the top ten were asthma (15.9%), aspiration (14.1%), congenital heart diseases [CHD] (13.2%), lung/airway congenital malformations (10.7%), immunodeficiency (10.4%), bronchial hyperresponsiveness [BHR] (8.0%), neurological causes (8.02%), atopy (7.3%), gastroesophageal reflux disease [GERD] (4.5%), and recurrent upper respiratory tract infections [URTIs]

(3.7%). Notably, compared to Period I, a significant decrease was observed in asthma, aspiration, BHR, chronic rhinosinusitis, recurrent URTIs, middle lobe syndrome, CF, infections, obesity, foreign body aspiration, and pulmonary hemosiderosis/hemorrhage in Period II. In contrast, during Period II, a significant increase in lung/airway congenital malformations, immunodeficiency, CHD, atopy, neurological causes, PCD, bronchopulmonary dysplasia, hematologic diseases, and oromotor incoordination was observed.

Conclusions: In the last decade, the underlying causes of RP have changed, emphasizing the need for a more comprehensive and tailored diagnostic approach.

Keywords: airway abnormalities; aspiration; asthma; children; congenital heart disease; recurrent pneumonia; underlying causes.

- 27 references

Supplementary info

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EClinicalMedicine

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. 2025 Nov 1:90:103580.

doi: 10.1016/j.eclinm.2025.103580. eCollection 2025 Dec.

Global, regional and national estimates of the burden of childhood asthma attributable to NO_2 exposure for 204 countries and territories from 1990 to 2023: a Global Burden of Disease study 2023

Katrin Burkart [1], Sarah Wozniak [1], Susan Anenberg [2], Ana Pereda [1], Nora Gilbertson [1], Charlie Ashbaugh [1], Daniel Goldberg [2], Perry Hystad [3], Gaige H Kerr [2], Susan A McLaughlin [1], Arash Mohegh [2], Michael Brauer [1 4]

Affiliations Expand

- PMID: 41245534

- **PMCID: PMC12617645**

- **DOI: 10.1016/j.eclinm.2025.103580**

Abstract

Background: Asthma, a chronic lung condition characterised by inflammation and airway constriction, has been associated with nitrogen dioxide (NO_2) exposure, an association that particularly impacts children. Our study rigorously assessed this relationship and estimated the global burden of childhood asthma attributable to NO_2 exposure in 204 countries and territories from 1990 to 2023.

Methods: We systematically reviewed epidemiological studies evaluating NO_2's long-term impact on childhood asthma. Using burden of proof meta-regression methods that account for bias by adjusting for study-design covariates and quantify remaining unexplained between-study heterogeneity to incorporate into uncertainty, we estimated the relative risk of childhood asthma occurring as a function of NO_2 exposure. From this, we computed global and country-specific population attributable fractions (PAFs) - i.e., the proportional change in asthma risk that would occur if NO_2 exposure were reduced to a theoretical minimum exposure level range of 4.6-6.2 ppb. We applied PAFs to data from the 2023 Global Burden of Disease Study (GBD) to derive the asthma burden attributable to NO_2 exposure in children and youths under 20 years old. Burden of proof methods allowed us to further compute risk-outcome metrics quantifying the magnitude of the NO_2-asthma association and its strength of supporting evidence.

Findings: We identified a total of 27 cohort studies, spanning 12 countries, primarily in Europe and high-income North America, with some studies from Asia (China and Japan). A meta-regression log-linear risk curve of these studies produced a summary RR of 1.05 (95% UI 0.99-1.12) per 5 ppb NO_2 and Egger's regression indicated significant publication bias. We estimated a global PAF of 4.67% (95% uncertainty interval [UI]: -3.75 to 20.6; all UIs reported in this study are inclusive of between-study heterogeneity except where noted), yielding 233,000 (-250,000-956,000) years lived with disability (YLDs) attributable to NO_2 globally in 2023. GBD 2023 ranked NO_2 seventh among environmental risk factors contributing to YLDs in children for all causes and third for childhood asthma YLDs. Attributable burden estimates and trends varied significantly by GBD super-region. While NO_2-attributable childhood asthma burden has declined substantially since 1990 in the high-income and central Europe, eastern Europe, and central Asia super-regions, NO_2 remains a prominent environmental risk factor in these two super-regions, ranked third in both super-regions for paediatric asthma YLDs in 2023, contributing 57,100 (-63 600 to 242,000) and 6570 (-7050 to 30,200) YLDs, respectively. In South Asia, NO_2 ranks second as risk factor for pediatric asthma contributing to 20,100 (-17 600, 105,000) YLDs in 2023.

Interpretation: NO_2 pollution remains a top environmental risk for paediatric health, necessitating policy interventions targeting NO_2 pollution, especially in high-income locations and urban areas.

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United States Environmental Protection Agency (EPA) and certain motor vehicle and engine manufacturers, grant number 4977/20-11. The contents of this article do not necessarily reflect the views of HEI or its sponsors, nor do they necessarily reflect the views and policies of the EPA or motor vehicle and engine manufacturers. Additional funding for this study was received by the Gates foundation, grant no. OPP1152504 for MB, KB, and SW. SA, DG, AM and GHK were supported by NASA grant no. 80NSSC21K0511 and SA and GHK NIH grant no. P20ES036775.

Keywords: Burden of disease; Nitrogen dioxide; Pediatric asthma.

Conflict of interest statement

KB has received funding from the Gates Foundation, HEI, NIH and the IHME Innovation fund. MB has received funding from the Gates Foundation, and HEI. SA has received funding from NIH, NASA, NSF, NASA, NOAA, Wellcome Trust, Natural Resources Defense Council, Health Effects Institute. She has also received consulting fees from the US Department of Justice, ICF International and honoraria from the University of Maryland. In addition, she has received payments for her expert testimony from the Department of Justice and travel expenses from the American Geophysical Union. She participates on a Data Safety Monitoring Board or Advisory Board with the Environmental Protection Agency, National Academy of Science, World Health Organization, Clean Air Partners and has leadership or fiduciary role in the American Geophysical Union. DG has received funding from NASA and HEI. GHK has received funding from NASA, HEI and the Wellcome Trust; he has also received consulting fees from the US Department of Justice, The New York State Office of Attorney General, and the California Air Resources Board in addition to payments or honoraria from US Department of State International Visitor Leadership Program.

- 36 references
- 6 figures

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. 2025 Oct 28:15:102150.

doi: 10.1016/j.toxrep.2025.102150. eCollection 2025 Dec.

Occupational asthma following single exposure to polyurethane foam containing methylene diphenyl diisocyanate - A case report

Albin Stjernbrandt [1]

Affiliations Expand

• PMID: 41234293

• PMCID: PMC12605998

• DOI: 10.1016/j.toxrep.2025.102150

Abstract

Diisocyanates are a group of chemicals used in many different applications, such as plastics, foams, coatings, adhesives, and sealants. Prolonged occupational exposure can result in severe asthma. This case report presents a non-smoking male without any previous respiratory disease, where severe obstructive airway symptoms developed during a single event with high airborne exposure to polyurethane foam containing methylene diphenyl diisocyanate during the coating of a large vehicle. The subject was subsequently diagnosed with occupational asthma based on a significant variability in a two-week peak expiratory flow curve and a positive metacholine challenge. Despite aborted exposure and optimized asthma treatment, the subject continued to experience debilitating airway symptoms. This case report demonstrates that severe asthma can develop following a single exposure to polyurethane foam containing methylene diphenyl diisocyanate, underscoring the importance of preventive measures in workplaces where such chemicals are used.

Keywords: Asthma; Isocyanates; Occupational; Reactive airways dysfunction syndrome.

Conflict of interest statement

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.

• 22 references

• 1 figure

Supplementary info

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Cite

18

Ann Med

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. 2025 Dec;57(1):2581812.

doi: 10.1080/07853890.2025.2581812. Epub 2025 Nov 3.

Long-term effectiveness and safety of benralizumab in EGPA: a 3-year single-center experience

Federica Davanzo [1], Luca Iorio [1], Marta Codirenzi [1], Eleonora Fiorin [1], Gabriella Guarnieri [2], Alessia Achille [2], Fulvia Chieco Bianchi [2], Maria Rita Marchi [3], Andrea Vianello [2], Andrea Doria [1], Roberto Padoan [1]

Affiliations Expand

- **PMID: 41178590**
- **PMCID: PMC12584834**
- **DOI: 10.1080/07853890.2025.2581812**

Abstract

Objectives: Benralizumab emerged as a promising treatment option for eosinophilic granulomatosis with polyangiitis (EGPA). This study assessed the long-term effectiveness and safety of benralizumab in patients with severe asthma and relapsing-refractory EGPA.

Methods: This retrospective, single-center study evaluated patients treated with benralizumab (30 mg/8 weeks), followed for up to 36 months. Primary outcome included disease remission (defined as Birmingham Vasculitis Activity Score version 3 = 0 and prednisone dose ≤4 mg/day). Secondary endpoints were corticosteroid tapering, lung function, relapses, treatment failure and drug retention rates.

Results: The study included 33 EGPA patients (17 [51.5%] male; median age at benralizumab initiation 56 years [IQR: 47-62]). Before starting benralizumab, most patients were on corticosteroids (90.9%), prior treatments included mepolizumab (24.2%). Benralizumab showed effectiveness, with clinical remission rates increasing from 39.4% (95% CI: 22.9-57.9) at 3 months to 65.0% (95% CI: 40.8-84.6) at 36 months ($p < 0.001$). Corticosteroid use declined from 90.9% to 15.4%, eosinophil counts dropped from 850 (515-1367) to 0 (0-0) cells/μL, and BVASv3 decreased from 2 (2-5) to 0 (0-0), showing significant improvements ($p = 0.002$ and $p < 0.001$, respectively). Proportion of patients experiencing asthma exacerbations reduced, alongside improved lung function. Retention rates were 81.8% at 1 year, 72.6% at 2 years, and 62.4% at 3 years, with secondary failure due to uncontrolled sinonasal symptoms. Mild adverse events were observed in 21.2% of patients.

Conclusions: These findings support the long-term effectiveness and safety of benralizumab for EGPA, highlighting its role in inducing clinical remission, reducing corticosteroid dependence, and controlling disease activity.

Keywords: Asthma; Benralizumab; Eosinophilic granulomatosis with polyangiitis; Vasculitis.

Conflict of interest statement

RP reports being invited as a speaker or advisory board member by GSK, AstraZeneca, Sanofi, and CSL Vifor outside the current work. AV received research grants from CLS Behring, GSK, and AstraZeneca. All other authors declare they have no conflict of interest.

- **50 references**
- **2 figures**

Supplementary info

MeSH terms, SubstancesExpand

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Cite

19

Published Erratum

Adv Ther

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. 2025 Dec;42(12):5978-5979.

doi: 10.1007/s12325-025-03407-0.

Correction to: Real-World Comparative Effectiveness Study in Patients with Asthma Initiating Fluticasone Furoate/Vilanterol or Beclometasone Dipropionate/ Formoterol Fumarate in General Practice in England

Ashley Woodcock [1], John Blakey [2 3], Arnaud Bourdin [4], Giorgio Walter Canonica [5 6], Christian Domingo [7], Alexander Ford [8], Rosie Hulme [8], Theo Tritton [8], Ines Palomares [9], Sanchayita Sadhu [10], Arunangshu Biswas [10], Manish Verma [11]

Affiliations Expand

- PMID: 41175324

- PMCID: PMC12618407

- DOI: 10.1007/s12325-025-03407-0

No abstract available

Erratum for

- Real-World Comparative Effectiveness Study in Patients with Asthma Initiating Fluticasone Furoate/Vilanterol or Beclometasone Dipropionate/Formoterol Fumarate in General Practice in England.

Woodcock A, Blakey J, Bourdin A, Canonica GW, Domingo C, Ford A, Hulme R, Tritton T, Palomares I, Sadhu S, Biswas A, Verma M.Adv Ther. 2025 Dec;42(12):5960-5977. doi: 10.1007/s12325-025-03349-7. Epub 2025 Sep 25.PMID: 40996636 Free PMC article.

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Clinical Trial

Clin Ther

. 2025 Dec;47(12):1170-1175.

doi: 10.1016/j.clinthera.2025.09.020. Epub 2025 Oct 29.

A Novel Metered Dose Inhaler Formulation of Triple-Drug Fixed-Dose Combination of Vilanterol, Glycopyrronium, and Fluticasone Furoate: A Phase III, Randomized, Multicenter Trial to Evaluate the Efficacy and Safety in Indian Patients With Uncontrolled Asthma

Chintan Patel [1], Diptikant Sahoo [2], Vaishal Sheth [3], Manish Kumar Jain [4], Ravi Koppula [5], Sanjay Verma [6], Deepak Kumar [7], Jayanta Kumar Panda [8], Deven Parmar [9], Kevinkumar Kansagra [9], Hardik Pathak [10]

Affiliations Expand

- PMID: 41168047

- DOI: 10.1016/j.clinthera.2025.09.020

Abstract

Purpose: This study aimed to evaluate the efficacy and safety of a fixed-dose combination (FDC) of vilanterol 12.5 µg, glycopyrronium 25 µg, and fluticasone furoate 100 µg (VIL-GLY-FF)-metered dose inhaler (MDI) (developed by M/s. Zydus Healthcare Limited) in comparison with the approved FDC of indacaterol 150 µg, glycopyrronium 50 µg, and mometasone furoate 160 µg (IND-GLY-MF)-dry powder inhaler (DPI) in patients with persistent asthma.

Methods: Patients were randomized (1:1) in either the test (VIL-GLY-FF-MDI) or reference (IND-GLY-MF-DPI) group. Fixed-dose combinations were administered once daily for 12 weeks; for VIL-GLY-FF-MDI, patients were instructed to administer TWO actuations at 1 time in a day, doubling the final doses delivered of its components. For IND-GLY-MF-DPI, (Zydus Healthcare Limited, Ahmedabad) patients inhaled 1 capsule via the Respihaler device once daily. The primary objective was to compare the between-group difference in the change in trough forced expiratory volume in 1 second (FEV1) at week 12 from baseline.

Findings: A total of 256 patients were enrolled. The change in least square mean (SE) in trough FEV1 at week 12 from baseline was 287.15 (18.00) mL and 284.94 (17.93) mL for the test and reference groups, respectively. For a predefined -150 mL noninferiority margin, 2-sided 95% CIs (-47.83 to 52.26 mL) for the difference in the mean change in trough FEV1 (2.21 mL) between the 2 groups reported the noninferiority of VIL-GLY-FF-MDI to IND-GLY-MF-DPI. The test FDC was well tolerated.

Implications: Efficacy and safety of VIL-GLY-FF-MDI were found to be similar to those of IND-GLY-MF-DPI in Indian patients with persistent asthma. Clinical Trial Registry India identifier: CTRI/2024/01/061230.

Keywords: Asthma; Fluticasone Furoate; Glycopyrronium; Phase III; Randomized; Vilanterol.

Conflict of interest statement

Declaration of competing interest Kevinkumar Kansagra, Deven Parmar, and Hardik Pathak are employees of Zydus Lifesciences Ltd, Ahmedabad, India. All other authors have no conflicts of interest to declare.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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21

Review

Curr Opin Allergy Clin Immunol

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. 2025 Dec 1;25(6):488-492.

doi: 10.1097/ACI.0000000000001112. Epub 2025 Oct 1.

Depemokimab: a new long-acting anti-IL5 treatment for severe asthma and chronic rhinosinusitis with nasal polyps

David I Bernstein [1]

Affiliations Expand

- **PMID: 41158017**

- **DOI: 10.1097/ACI.0000000000001112**

Abstract

Purpose of review: Clinical data are reviewed pertaining to depemokimab, the first extended life anti-IL5 mAb, for treating severe eosinophilic asthma. This molecule was engineered through amino acid modification (YTE mutation) of the Fc region. This modification increases Fc receptor affinity and enables antibody recycling, thereby greatly extending serum half-life and will allow a dosing duration of 26 weeks.

Recent findings: Phase 1 and 3 clinical studies have demonstrated that depemokimab maintains drug concentrations and reduces peripheral eosinophils over a single 26-week dosing interval. A 52-week double-blinded, placebo-controlled (DBPC) Phase 3 study of patients with severe eosinophilic asthma demonstrated that depemokimab reduced annualized asthma exacerbations by 54% compared with placebo, the primary efficacy outcome. No significant differences between active and placebo arms were detected for secondary endpoints (e.g., symptoms, FEV1 and quality of life). Results of a noninferiority study comparing depemokimab, benralizumab and mepolizumab are pending. In a DBPC trial of chronic rhinosinusitis with nasal polyps (CRSwNP), depemokimab was also effective in reducing nasal polyp endoscopy scores and nasal obstruction.

Summary: Depemokimab could offer patients with severe persistent asthma a more convenient add-on treatment option than existing shorter acting biologics and thereby improve overall adherence.

Keywords: eosinophil; half-life; interleukin 5; mAb; severe asthma.

- **13 references**

Supplementary info

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22

Case Reports

Am J Ind Med

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. 2025 Dec;68(12):1048-1052.

doi: 10.1002/ajim.70035. Epub 2025 Oct 28.

Occupational Asthma to UV-Hardened Acrylate-Based Car Paint

Hille Suojalehto [1], Saara Eskola [2], Henna Kuparinen [3], Irmeli Lindström [1], Katri Suuronen [1]

Affiliations Expand

- PMID: 41157816
- PMCID: PMC12606393
- DOI: 10.1002/ajim.70035

Abstract

Products containing acrylates are used in the coating of metal surfaces. Previous case series have reported occupational asthma caused by various acrylates including solitary cases related to coating products. We report on a case of occupational asthma caused by a new type of UV-hardened car paint that included several reactive acrylates (tripropyleneglycol diacrylate, epoxy diacrylate, neopentylglycol propoxylate diacrylate and ethoxylated trimethylolpropane-triacrylate) in a car shop worker. The paint was sprayed a few times a day within 1-2 m distance from the patient. Two years after the product's introduction, this worker developed typical symptoms of occupational asthma, reversible airway obstruction, and eosinophilic airway inflammation. Workplace peak expiratory flow monitoring was typical for occupational asthma. The specific inhalation challenge showed positive early reaction, along with a significant post-challenge increase in nonspecific bronchial hyperresponsiveness and markers of T2 inflammation, further supporting occupational asthma. The patient's asthma symptoms significantly improved once exposure to the offending agent was ceased. This is the first reported case of occupational asthma confirmed with specific inhalation challenge to a new type of UV-hardened car paint containing reactive acrylates.

Keywords: acrylate; chemical; low-molecular-weight agent; occupational asthma; specific inhalation challenge.

Conflict of interest statement

The authors declare no conflicts of interest.

- 22 references
- 2 figures

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

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Cite

23

Pulm Ther

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. 2025 Dec;11(4):725-740.

doi: 10.1007/s41030-025-00327-w. Epub 2025 Oct 28.

Exacerbation Reduction in Patients with Asthma Following Escalation to FF/UMEC/VI from ICS/LABA: Retrospective Cohort Study

Alan P Baptist [1], Rosirene Paczkowski [2], Guillaume Germain [3], Jacob Klimek [4], François Laliberté [3], Robert C Schell [5], Sergio Forero-Schwanhaeuser [6], Alison Moore [7], Stephen G Noorduyn [8 9]

Affiliations Expand

- PMID: 41148557
- PMCID: PMC12623575
- DOI: 10.1007/s41030-025-00327-w

Abstract

Introduction: Despite fluticasone furoate/umeclidinium/vilanterol (FF/UMEC/VI) being available for asthma treatment in the US (United states) since 2020, real-world evidence on its clinical and economic benefits in patients with asthma is lacking. This study aimed to assess the effectiveness of FF/UMEC/VI (100/62.5/25 µg and 200/62.5/25 µg) in US patients with asthma previously on inhaled corticosteroid/long-acting β_2-agonists (ICS/LABA) using administrative claims data.

Methods: Retrospective, longitudinal, pre-post study utilizing data from the Komodo Health database between 09/09/2019 and 12/31/2023. Eligible adults with asthma had been treated with ICS/LABA prior to FF/UMEC/VI initiation (index date: first FF/UMEC/VI prescription). Rates of moderate-severe exacerbations, asthma-related healthcare resource utilization, oral corticosteroid (OCS) and short-acting β_2-agonist

(SABA) use, and asthma-related medical costs were evaluated pre- (12 months pre-index) and post-FF/UMEC/VI initiation (12 months post-index). Statistical analyses involved rate ratios (RRs) from a Poisson regression model, odds ratios (ORs) from logistic regression models, and mean differences from linear regression models. Exploratory analyses stratified these results by pre-index ICS/LABA combination and FF/UMEC/VI index dose.

Results: In total, 17,959 patients were included. Following FF/UMEC/VI initiation, odds of having ≥ 1 exacerbation were reduced by 52% (OR [95% confidence interval (CI)] 0.48 [0.46, 0.50]; P < 0.001), rate of moderate-severe exacerbations reduced by 38% (RR [95% CI] 0.62 [0.61, 0.64]; P < 0.001) and asthma-related hospitalizations by 25% (RR [95% CI] 0.75 [0.68, 0.83]; P < 0.001). Odds of ≥ 1 OCS dispensing were reduced by 36% (OR [95% CI] 0.64 [0.62, 0.67]; P < 0.001) and ≥ 1 SABA canister use by 54% (OR [95% CI]: 0.46 [0.44, 0.48]; P < 0.001) post initiation; mean annualized asthma-related medical costs were reduced by $1115 ([95% CI] [$ -1771, $ -459]; P < 0.001). Both FF/UMEC/VI dosage groups had similar results.

Conclusions: In patients who remain uncontrolled despite ICS/LABA treatment, escalating to FF/UMEC/VI is associated with reductions in asthma exacerbations, asthma-related hospitalizations, OCS use, SABA use, and asthma-related medical costs.

Keywords: Asthma, clinical practice; FF/UMEC/VI; Real-world evidence; Single-inhaler triple therapy; United States.

Conflict of interest statement

Declarations. Conflicts of Interest: Alan P. Baptist reports grant support from GSK, AstraZeneca, and Teva. Rosirene Paczkowski, Sergio Forero-Schwanhaeuser, Alison Moore, and Stephen G. Noorduyn are employees of GSK and hold financial equities in GSK. Stephen G. Noorduyn is also a PhD candidate at McMaster University. Guillaume Germain, Jacob Klimek, François Laliberté, and Robert C. Schell are employees of Analysis Group, a consulting company that has received research funds from GSK to conduct this study. Ethical Approval: The study was considered exempt research under 45 CFR § 46.104(d)(4) as it involved only the secondary use of data that were de-identified in compliance with the Health Insurance Portability and Accountability Act (HIPAA): specifically, 45 CFR § 164.514. Komodo Health has a standard license agreement, which includes restrictive covenants governing the use of the data.

- 24 references
- 4 figures

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24

Review

Cell Mol Immunol

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. 2025 Dec;22(12):1521-1532.

doi: 10.1038/s41423-025-01357-9. Epub 2025 Oct 27.

Immunotherapy for asthma

Hamida Hammad [1 2], Engi Ahmed [3 4 5], Bart N Lambrecht [3 4]

Affiliations Expand

- PMID: 41145900
- PMCID: PMC12660796
- DOI: 10.1038/s41423-025-01357-9

Abstract

Type 2^{high} asthma, which accounts for the majority of asthma cases, is driven by Th2 cells that produce cytokines such as IL-4, IL-5, and IL-13. These cytokines promote several features of the disease, including eosinophilia, IgE production, bronchial hyperresponsiveness (BHR), mucus hypersecretion, and susceptibility to exacerbations. In contrast, type 2^{low} asthma is characterized by the presence of neutrophils and reduced responsiveness to corticosteroids. In recent years, advances in our understanding of the distinct mechanisms at play in each asthma endotype have paved the way for the development of targeted therapies tailored to specific patient profiles. In this review, we first explore the underlying immunological mechanisms of various asthma endotypes. We also provide an overview of the different types of immunotherapies currently available to asthmatic patients and their clinical efficacy. Finally, we highlight emerging therapeutic strategies that hold promise for improving asthma management in the future.

Keywords: Asthma; allergens; biologics.; endotypes; immunotherapy.

Conflict of interest statement

Competing interests: The authors declare no competing interests.

- 149 references
- 3 figures

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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Cite

25

Review

Adv Ther

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. 2025 Dec;42(12):5950-5959.

doi: 10.1007/s12325-025-03392-4. Epub 2025 Oct 24.

Visualizing Improvements in Airway Dysfunction After Inhaled Therapy in Patients With Uncontrolled Asthma: A Narrative Review

Sam Tcherner [1 2], Ali Mozaffaripour [1 3], Cory Yamashita [4], Grace Parraga [5 6 7 8 9]

Affiliations Expand

- PMID: 41134514
- PMCID: PMC12618298
- DOI: 10.1007/s12325-025-03392-4

Abstract

Clinical trials investigating asthma therapies typically rely on pulmonary function tests including spirometry markers, such as forced expiratory volume in 1 s, to evaluate efficacy. While these measures provide insights into the action of bronchodilators on global lung function, their specific effects on the airways and the relationship between clinical improvements and airway dysfunction remains

poorly understood. In recent years, pulmonary functional imaging methods, such as hyperpolarized ^{129}Xe magnetic resonance imaging (MRI), have enabled the analysis of airway dysfunction in patients with asthma utilizing ventilation defect percent (VDP). In this narrative review, we summarize clinical evidence about the impact of inhaled bronchodilator therapies on airway dysfunction in patients with asthma, focusing on studies that utilized ^{129}Xe MRI to visualize and quantify MRI VDP. ^{129}Xe MRI VDP has been shown to be a well-tolerated and sensitive technique for enabling the visualization and quantification of airway functional changes over time in patients with asthma. This has been shown not only in a controlled clinical trial environment but also in a real-world setting, in patients with both controlled and poorly controlled asthma. A recent study evaluating single-inhaler triple therapy in patients with uncontrolled moderate-severe asthma, despite inhaled corticosteroid/long-acting β_2-agonist maintenance therapy, demonstrated that daily fluticasone furoate/umeclidinium/vilanterol (FF/UMEC/VI 200/62.5/25 µg) led to significantly improved ^{129}Xe MRI VDP after only 6 weeks, which was in line with broader central/distal airway function and quality of life improvements. These results highlight the capacity of ^{129}Xe MRI VDP to detect early responses to treatment. In addition, the mechanistic insights provided by ^{129}Xe MRI VDP also indicated that these benefits are likely due to the combination of UMEC (a long-acting muscarinic antagonist) and an efficacious inhaled corticosteroid, addressing undertreated inflammatory bronchoconstriction, helping to restore airway caliber and function that more closely resemble the airways of a healthy individual.Videos available for this article.

Keywords: 129Xe magnetic resonance imaging; Airway dysfunction; Asthma; Fluticasone furoate/umeclidinium/vilanterol; ICS/LAMA/LABA; Ventilation defect percent.

Conflict of interest statement

Declarations. Conflict of Interest: Sam Tcherner, Ali Mozaffaripour, and Cory Yamashita have no conflicts of interest pertaining to the work. Grace Parraga has received speaking honoraria from GSK, AstraZeneca, Polarean, and Sanofi, as well as study funding from AstraZeneca and GSK. Ethical Approval: As a narrative review, this article is based on previously conducted studies and does not contain any new studies with human participants or animals performed by any of the authors. As such, no additional approvals or informed consent were obtained above those collected as part of the original clinical studies.

- 29 references
- 2 figures

Supplementary info

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Cite

26

Allergy

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. 2025 Dec;80(12):3237-3250.

doi: 10.1111/all.70091. Epub 2025 Oct 13.

Antibiotics for Acute Wheezing and Asthma Exacerbations: An EAACI Position Paper and Systematic Review

Anne-Lotte Redel [1 2], Wojciech Feleszko [3], Marina Atanaskovic-Markovic [4], Alessandra Arcolaci [5], Avraham Beigelman [6], Cristina Boccabella [7], Matteo Bonini [8 9], Gert-Jan Braunstahl [1 2], Francesca Cefaloni [7], Aspasia Karavelia [10], Gerdien Tramper-Stranders [11 12]

Affiliations Expand

- PMID: 41078060

- DOI: 10.1111/all.70091

Abstract

Introduction: Antibiotics are frequently prescribed in preschool wheezing episodes and acute asthma exacerbations (AAEs), even though antibiotics are not recommended as standard AAE treatment.

Objective: To systematically present relevant literature about the clinical effects of antibiotics for AAE and conclude with recommendations.

Methods: Systematic search was conducted in Medline ALL, Embase, Web of Science Core Collection, and Cochrane Central Register of Controlled Trials. Primary outcomes included AAE duration and length of hospital stay, while secondary outcomes incorporated AAE severity, treatment failure, AAE recurrence risk, spirometry, health costs, and adverse events.

Selection criteria: Randomised controlled trials and cohort studies were included if they investigated the clinical effect of antibiotics in AAE compared to placebo/standard care.

Results: Fifteen studies were included. Evidence for clinical effects of antibiotics in AAE treatment is scarce. Macrolides seem to shorten AAE duration in children; for adults, there is a lack of data. Antibiotics were associated with a longer hospital admission in retrospective observational studies, without evidence in randomised

trials. Procalcitonin-guided treatment led to a reduction of antibiotic prescriptions without adverse outcomes.

Conclusion: Limited evidence is available that macrolides shorten AAE duration in preschool wheezers. For other age groups, there is no clear evidence of beneficial effects of antibiotics.

Keywords: antibiotics; asthma; exacerbation; treatment.

- 44 references

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

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Cite

27

Pulm Ther

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. 2025 Dec;11(4):753-763.

doi: 10.1007/s41030-025-00319-w. Epub 2025 Oct 6.

Switching to the Dry Powder Inhaler: Disease Control with a Lower Carbon Footprint

Christer Janson [1], Hanna Hisinger-Mölkänen [2], Lilla Tamasi [3], Ville Vartiainen [4 5], Lauri Lehtimäki [6 7]

Affiliations Expand

- PMID: 41051659

- PMCID: PMC12623521

- DOI: 10.1007/s41030-025-00319-w

Abstract

Introduction: Dry powder inhalers (DPIs) have a 20-40-fold lower carbon footprint compared to pressurized metered-dose inhalers (pMDIs). Switching from pMDI to DPI is therefore beneficial from an environmental perspective, but many health care professionals are concerned that this may worsen treatment outcomes in asthma and chronic obstructive pulmonary disease (COPD).

Methods: We analyzed patient outcomes and carbon footprints of switching inhaler treatment from pMDI to DPI. We performed a post hoc analysis on clinical outcomes data from a 12-week real-world, non-interventional study of adult patients with asthma or COPD who switched treatment from pMDI to the budesonide-formoterol Easyhaler DPI. Clinical end points included asthma control test (ACT), Mini-Asthma Quality of Life Questionnaire (Mini-AQLQ), lung function tests, and reliever use (asthma), and COPD assessment test (CAT), and modified Medical Research Council dyspnea scale (mMRC) (COPD). In the carbon footprint calculation, we used estimates from the Montreal Protocol for pMDI and for DPI the estimate as reported.

Results: Among all 237 patients (142 asthma, 95 COPD) by switching their treatment clinical improvements were observed in all the outcome measures ($p < 0.001$). Furthermore, the need for reliever medication decreased among patients with asthma ($p < 0.001$). The amount of estimated kg CO_2e emissions per year for maintenance treatment was 97.0% lower for the DPI than for pMDI. For reliever medication among patients with asthma, it was 99.6% lower. Among them, the emission savings could amount to approximately 131 kg CO_2e annually. This is of similar magnitude, as individual high-impact environmental actions such as eating a plant-based diet or purchasing green energy.

Conclusions: Our results show that disease control was maintained among patients with asthma or COPD when they switched from pMDI to DPI, while the carbon footprint of inhaler treatment was reduced.

Keywords: Asthma; Carbon footprint; Chronic obstructive pulmonary disease (COPD); Dry powder inhaler (DPI); Easyhaler®; Environmental sustainability; Pressurized metered-dose inhaler (pMDI).

Conflict of interest statement

Declarations. Conflict of interest: Christer Janson has received honoraria for educational activities and lectures from ALK, AstraZeneca, Chiesi, GlaxoSmithKline, Orion, Sanofi and Stallergenes, and has served on advisory boards arranged by ALK, AstraZeneca, GlaxoSmithKline, Orion, Sanofi and Stallergenes. Hanna Hisinger-Mölkänen is a former employee of Orion Corporation and reports consultation fees from AstraZeneca, Orion, MSD and GSK. Lilla Tamasi has received personal fees for lectures and advisory board meetings from AstraZeneca, Berlin Chemie, Chiesi, Orion and Sanofi. Ville Vartiainen is a former employee of Orion and has since received lecture and consultation fees from Orion Corporation. Lauri Lehtimäki has received personal fees for lectures and advisory board meetings from ALK, AstraZeneca, Berlin Chemie, Boehringer Ingelheim, Chiesi, GSK, Orion and Sanofi. Ethical Approval: This article is based on previously conducted study and does not contain any new studies with human participants. The original clinical study was approved by the Medical Research Council Scientific and Research Ethics Committee of Hungary and all procedures followed their ethical standards, as

well as those of the 1964 Declaration of Helsinki and its later amendments. Written informed consent was obtained from all study participants prior to study commencement.

- 29 references
- 1 figure

Full text links

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Cite

28

Review

Curr Opin Pediatr

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-
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. 2025 Dec 1;37(6):597-605.

doi: 10.1097/MOP.0000000000001514. Epub 2025 Oct 6.

Early-life viral infections and asthma: new cells and ideas

Jie Lan [1], Alysia McCray [1], Emma Brown [1], Taylor Eddens [1 2]

Affiliations Expand

- PMID: 41051175
- PMCID: PMC12594164
- DOI: 10.1097/MOP.0000000000001514

Abstract

Purpose of review: Asthma is among the most common conditions managed by pediatricians. This review summarizes recent advances in our immunologic understanding of asthma, focusing on cell types implicated in pathogenesis outside of the Th2 paradigm. Early-life respiratory viral infections are a key risk factor for the development of pediatric asthma. Literature detailing the epidemiologic and

immunologic connection between early-life viral infections and asthma is also reviewed.

Recent findings: Asthma is an umbrella term used clinically, but the underlying immune mechanisms can be highly variable. These differing endotypes of asthma can be driven by distinct granulocyte, CD4 + T-cell, and innate-cell subsets, all with therapeutic implications. Early-life viral infection is a well described risk factor for asthma development. Understanding the differences in the immune system early in life, focused on the lung milieu, has shed light on the mechanisms connecting these two conditions.

Summary: Early-life respiratory viral infections and asthma have high prevalence in pediatrics, with the former raising the risk for the latter. Understanding the immunologic mechanisms is critical in understanding this connection. Further, our understanding of the drivers of asthma in pediatrics has expanded beyond the canonical pathways.

Keywords: asthma; early-life viral infection; lung immunology.

Conflict of interest statement

There are no conflicts of interest.

- **141 references**
- **2 figures**

Supplementary info

Publication types, MeSH terms, Grants and fundingExpand

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Cite

29

Randomized Controlled Trial

Lancet Respir Med

-
-
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. 2025 Dec;13(12):1067-1077.

doi: 10.1016/S2213-2600(25)00287-5. Epub 2025 Sep 28.

Dupilumab versus omalizumab in patients with chronic rhinosinusitis with nasal polyps and coexisting asthma (EVEREST): a multicentre, randomised, double-blind, head-to-head phase 4 trial

Eugenio De Corso [1], G Walter Canonica [2], Enrico Heffler [2], Michal Springer [3], Tomasz Grzegorzek [4], Miguel Viana [5], Zsuzsanna Horváth [6], Joaquim Mullol [7], Philippe Gevaert [8], Justin Michel [9], Anju T Peters [10], Martin Wagenmann [11], Sherif Zaghloul [12], Mei Zhang [12], Mark Corbett [12], Scott Nash [13], James T Angello [12], Amr Radwan [14], Yamo Deniz [13], Antonio Martin [15], Peter W Hellings [16]

Affiliations Expand

- PMID: 41033334

- DOI: 10.1016/S2213-2600(25)00287-5

Abstract

Background: Chronic rhinosinusitis with nasal polyps (CRSwNP) is predominantly driven by type 2 inflammation. The biologics dupilumab and omalizumab, which target drivers and mediators of type 2 inflammation (interleukin [IL]-4/IL-13 signaling and immunoglobulin E [IgE], respectively), are efficacious in treating CRSwNP but direct comparisons are few. In EVEREST (EValuating trEatment RESponses of dupilumab versus omalizumab), the first head-to-head trial in respiratory biologics, we aimed to compare the efficacy and safety of dupilumab and omalizumab in patients with severe CRSwNP who had mild, moderate, or severe asthma.

Methods: EVEREST was an international, randomised, double-blind, phase 4 trial, conducted at 100 hospitals or clinical centres in 17 countries. Sites were selected with otolaryngology, pneumologist, allergist, and immunologist practices; needed to have previously conducted double-blind studies; and were required have nasal endoscopy and electrocardiogram machines. Eligible patients aged 18 years or older with severe uncontrolled CRSwNP (with a nasal polyp score of 5 or more [and ≥2 for each nostril]), symptoms of nasal congestion and loss of smell for at least 8 weeks before screening, and physician-diagnosed asthma. Patients were randomly assigned (1:1) to subcutaneous dupilumab 300 mg every 2 weeks or omalizumab weight-tiered and IgE-tiered dosing every 2 weeks or 4 weeks for 24 weeks, with background mometasone furoate nasal spray. Patients and investigators were masked to the study drugs. Primary endpoints were change from baseline in endoscopic nasal polyp score and University of Pennsylvania Smell Identification Test (UPSIT) at 24 weeks. Efficacy was assessed in the intention-to-treat population and safety was assessed in patients who received at least one dose of study medication. The trial was registered at ClinicalTrials.gov, NCT04998604.

Findings: Between Sept 27, 2021, and Dec 27, 2024, 819 individuals were screened for study inclusion, 459 were excluded (most common screen failures were: 167 did not meet nasal polyp score ≥5 or did not have ongoing symptoms of nasal congestion and loss of smell, 114 did not meet pre-bronchodilator FEV_1 ≤85% predicted normal, and 99 did not meet eligibility as per omalizumab drug-dosing), and 360 participants were randomly assigned (181 assigned to the dupilumab group

and 179 assigned to the omalizumab group). Of the 360 participants, 198 (55%) participants were male, 162 (45%) were female, and the mean age of the total population sample was 52 years (SD 13·1). Improvements were significantly greater with dupilumab than omalizumab for all primary and secondary efficacy endpoints at week 24. Least squares mean differences in change from baseline dupilumab over omalizumab were: nasal polyp score -1·60 (95% CI -1·96 to -1·25; p<0·0001) and UPSIT 8·0 (6·3 to 9·7; p<0·0001). 115 (64%) of 179 participants in the dupilumab group and 116 (67%) of 173 participants in the omalizumab group reported treatment-emergent adverse events, the most common of which were nasopharyngitis, accidental overdose, headache, upper respiratory tract infection, and cough. There were no deaths in the study.

Interpretation: Dupilumab was superior to omalizumab in patients with severe CRSwNP and coexisting asthma. These findings support the efficacy of dupilumab in patients with type 2 respiratory diseases versus an active biologic comparator, the known safety profiles of dupilumab and omalizumab, and could enable better treatment targeting for patients with CRSwNP and asthma in clinical practice.

Funding: Sanofi and Regeneron Pharmaceuticals.

Conflict of interest statement

Declaration of interests EDC is an advisory board member for and has received speaker fees or honoraria from AstraZeneca, Firma, GSK, Novartis, Regeneron, and Sanofi. GWC has received research or clinical trials grants from AstraZeneca, GSK, Menarini, and Sanofi Genzyme, and fees for lectures or advisory board participation from AstraZeneca, CellTrion, Chiesi, Faes Farma, Firma, Genentech, GSK, Guidotti-Malesci, HAL Allergy, Innovacaremd, Menarini, Novartis, OM-Pharma, Red Maple, Sanofi-Aventis, Sanofi-Genzyme, Stallergenes-Greer, and Uriach Pharma. EH reports consulting fees from Allergy Therapeutics, Almirall, Apogee Therapeutics, AstraZeneca, Bosch, Celltrion Healthcare, Chiesi, Lofarma, Novartis, Regeneron, and Sanofi; research grants from AstraZeneca and Chiesi; speaker fees or honoraria from AstraZeneca, Chiesi, GSK, Lofarma, and Sanofi; and travel support from AstraZeneca and GSK. MS reports research grants from Eli Lilly, Insmed, and Sanofi. MV has received speaker fees from Sanofi and advisory board and speaker fees from GSK. JMu is an advisory board member for, and has received research grants and speaker fees from Almirall, AstraZeneca, GSK, Glenmark, Lilly, Menarini, MSD, Noucor and Uriach Group, Regeneron Pharmaceuticals, Sanofi, and Viatris and MEDA. PG is an advisory board member for and has received clinical trial funding from AstraZeneca, Eli Lilly, Genentech, Insmed, Novartis, Regeneron Pharmaceuticals, Roche, and Sanofi. JMi is an advisory board member for and has received speaker fees or honoraria from AstraZeneca, GSK, Novartis, and Sanofi. ATP has received research support from AstraZeneca, Insmed, Regeneron Pharmaceuticals, and Sanofi, and is an advisory board member for AstraZeneca, Chiesi, Eli Lilly, GSK, Regeneron Pharmaceuticals, and Sanofi. MW reports research grants from ALK-Abelló, AstraZeneca, GSK, Novartis, Sanofi, and Takeda; is an advisory board member for ALK-Abelló, AstraZeneca, GSK, Novartis, and Sanofi; has received lecture fees from ALK-Abelló, Allergopharma, AstraZeneca, CSL Behring, Genzyme, GSK, HAL Allergie, Infectopharm, LETI Pharma, MSD, NeilMed, Novartis, Sanofi, Stallergenes Greer, and Takeda; and is a member of the executive

committee of the German Society of Allergology and Clinical Immunology (DGAKI). SZ, MZ, MC, JTA, and AM are employees of Sanofi and may hold stock or stock options. SN, AR, and YD are employees of Regeneron Pharmaceuticals and may hold stock or stock options. PWH is an advisory board member for and has received lecture fees and research grants from Regeneron Pharmaceuticals and Sanofi, and has received consulting and speaker fees from GSK, Regeneron Pharmaceuticals, Sanofi, and Viatris. All other authors declare no competing interests.

Supplementary info

Publication types, MeSH terms, Substances, Associated dataExpand

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Cite

30

Allergy

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. 2025 Dec;80(12):3331-3341.

doi: 10.1111/all.70085. Epub 2025 Oct 1.

Long-Term, Real-World Effectiveness of Allergen Immunotherapy in Children and Adolescents With Allergic Rhinitis and Asthma

Christian Woehlk [1,2], Thomas Stranzl [2], Marco Contoli [3], Nick Freemantle [4], Andreas Kallsoy Slaettanes [2], Julie Rask Larsen [2], Celeste Porsbjerg [1], Benedikt Fritzsching [5]

Affiliations Expand

- PMID: 41031547
- PMCID: PMC12666749
- DOI: 10.1111/all.70085

Abstract

Background: Respiratory allergies often begin in childhood and can progress over time, leading to increased disease burden. Allergen immunotherapy (AIT) is the only causal treatment for allergic respiratory diseases with disease-modifying potential.

While randomised trials support its efficacy in controlling allergic rhinitis (AR) and asthma symptoms, long-term real-world data in children remain limited.

Methods: This paediatric study (n = 11,036) was conducted within the pre-defined framework of the REACT study, based on protocol-specified objectives. Children (< 18 years) with physician-diagnosed AR, with or without pre-existing asthma, were included. AIT-treated patients were matched 1:1 to non-AIT controls. Effectiveness was assessed over 9 years by comparing AR and asthma medication prescriptions, using a public database covering all reimbursable AIT products. Relative differences were calculated across the full observation period.

Results: AIT-treated children (mean age 11.4 years; 62.1% male) exhibited greater reductions in AR medication use than controls (additional 9% reduction beyond 61% in controls). In children with asthma, AIT was associated with additional reductions in asthma medication use (-21% beyond -48% in controls), severe exacerbations (-21% beyond -36%), and new oral corticosteroid prescriptions (-33% beyond -41%). Age stratification revealed more pronounced AR medication reductions in younger children (0-11 years) than in adolescents (12-17 years).

Conclusion: This large-scale, real-world study supports the long-term effectiveness of AIT in children with AR, with or without asthma. The findings reflect improved disease control and suggest a disease-modifying effect of AIT. Early intervention, particularly in younger children, may help mitigate the progression of allergic disease.

Keywords: allergen immunotherapy; allergic rhinitis; asthma; children; prevention; real-world evidence.

Conflict of interest statement

C.W. is employed in the department of Global Research and Drug Discovery, ALK-Abelló. T.S. and A.K.S. are employees of ALK-Abelló. M.C. reports personal fees from ALK-Abelló during the conduct of the study; grants, personal fees, and non-financial support from Chiesi and GlaxoSmithKline, personal fees, and non-financial support from AstraZeneca, Boehringer Ingelheim, Novartis, and Zambon, and grants from the University of Ferrara (Italy), outside the submitted work. N.F. reports personal fees from Aimmune, Allergan, AstraZeneca, Grifols, Ipsen, MSD, Novartis, Sanofi Aventis, and Vertex, outside of the submitted work. J.R.L. is an employee of Novo Nordisk and a former employee of ALK-Abelló (at the time the work was conducted). C.P. reports grants from ALK-Abelló during the conduct of the study; grants and personal fees from Astra Zeneca, Chiesi, GSK, Novartis, Sanofi, and TEVA outside of the submitted work. B.F. reports personal fees from ALK-Abelló during the conduct of the study; speaker honorarium from Novartis and Merck Sharp & Dohme outside of the submitted work.

- **38 references**
- **4 figures**

Supplementary info

MeSH terms, Substances, Grants and fundingExpand

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31

Observational Study

J Asthma

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. 2025 Dec;62(12):2114-2124.

doi: 10.1080/02770903.2025.2558755. Epub 2025 Sep 29.

Mepolizumab reduced healthcare resource utilization and improved work productivity in patients with severe asthma during the REALITI-A 2-year study

Giorgio Walter Canonica [1 2], Arnaud Bourdin [3], Erika Penz [4], Lingjiao Zhang [5], Peter Howarth [6], Rafael Alfonso-Cristancho [5]

Affiliations Expand

- PMID: 40991264

- DOI: 10.1080/02770903.2025.2558755

Free article

Abstract

Objective: To assess the real-world impact of mepolizumab on healthcare resource utilization (HCRU) and work productivity and activity impairment (WPAI) in patients with severe asthma.

Methods: Asthma-related HCRU and WPAI were assessed over 2 years in the REALITI-A study-an international, prospective, observational cohort study in adults with severe asthma newly initiating mepolizumab (100 mg subcutaneous). Secondary endpoints of the study compared the proportion of patients with HCRU use, HCRU events, and WPAI component scores 12 months before mepolizumab initiation with 24 months follow-up. The relative rates of HCRU outcomes were calculated, with a treatment policy estimand for discontinuation.

Results: Patients (*N* = 822) had a mean age of 54 years and 63% were female. Hospitalization rates were reduced by 53% in the 0-12-month follow-up period ($p < 0.001$) and sustained for 24 months. The rates of asthma-related hospitalizations, emergency department visits, and outpatient visits reduced by 59-64% ($p < 0.001$) across the 24-month follow-up. The mean number of overnight hospital stays reduced from 2.4 in the pre-treatment period to 1.0 and 0.5 in the 0-12-month and 12-24-month follow-up periods, respectively. The WPAI Asthma activity impairment score was reduced from baseline by 47% and 55% at 12 and 24 months of follow-up. Overall work impairment was reduced by 62% and 74%.

Conclusions: Mepolizumab treatment reduced HCRU while improving activity and productivity in patients with severe asthma over 2 years. These data provide further evidence of real-world benefits of mepolizumab and may help inform healthcare system resource allocation.

Keywords: HCRU; Mepolizumab; activity; asthma; burden; costs; impairment; productivity; real world; severe asthma.

Prevalence of cough and associated symptoms among pilgrims in large mass gathering event 2024: a cross-sectional study

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Affiliations Expand

- **PMID: 40989229**

- PMCID: PMC12452582

- DOI: 10.1016/j.ijregi.2025.100733

Abstract

Objectives: Large mass gathering events significantly increase the risk of infectious disease transmission, particularly respiratory infections, due to unavoidable overcrowding and exposure to airborne pathogens. Therefore, this study aims to assess the prevalence of cough, its duration, and associated symptoms during the religious mass gathering event among pilgrims in the 2024 Hajj season.

Methods: This cross-sectional study was conducted during Hajj in Makkah, Saudi Arabia, in 2024. A face-to-face random interview utilizing a structured questionnaire was employed to collect data from 2,913 pilgrims, who were randomly selected as participants and were at least 18 years old. Baseline demographic data and clinical characteristics were compiled using descriptive statistics. Continuous variables were presented as means and standard deviations, while categorical data were illustrated as counts and percentages.

Results: Among 2913 Hajj pilgrims, the average age was 53.9 ± 11.8 years, and 1,173 (40.4%) reported cough symptoms. The highest prevalence was in the 50-64 age group (60.7%). Chronic diseases were significantly more common in patients with cough (53.3%). Diabetes (357 cases) and hypertension (330 cases) were the most common conditions. Of the 1,173 participants with cough, 10.3% reported no associated symptoms, while sore throat (30.8%) was the most common. Logistic regression confirmed chronic disease, nationality, and age as significant predictors of cough.

Conclusions: A significant number of cough symptoms were reported, with the highest incidence in older adults. Additionally, notable associations were identified between cough and pre-existing health conditions, particularly diabetes mellitus, hypertension, chronic heart disease, and asthma.. Future research should investigate the long-term effects of cough and its related symptoms or use of medications in mass gatherings.

Keywords: Chronic diseases; Cough; Hajj; Infectious diseases; Mass gatherings; Public Health; Respiratory symptoms.

Conflict of interest statement

The authors have no competing interests to declare.

- 27 references
- 2 figures

Full text links

33

Review

Curr Opin Allergy Clin Immunol

. 2025 Dec 1;25(6):493-499.

doi: 10.1097/ACI.0000000000001111. Epub 2025 Aug 22.

Can immunotherapy prevent the progression of airway disease?

Josefine Gradman [1 2], Susanne Halken [1 2]

Affiliations Expand

- PMID: 40920231

- DOI: 10.1097/ACI.0000000000001111

Abstract

Purpose of review: The potential of allergen immunotherapy (AIT) to prevent allergic airway disease progression are demonstrated. Though not all patients benefit equally, there is limited research on which patients may benefit most.In this article, we focus on factors that may influence the risk of progression and their influence on the preventive effects of AIT, and whether some patients may benefit more than others may.

Recent findings: Various factors including age, genetic predisposition, number of sensitizations and co-morbidities, can influence the risk of progression, especially from allergic rhinitis/rhinoconjunctivitis (ARC) to asthma. Early age and severity are associated with a higher risk of progression. Younger children with ARC may benefit most from AIT with respect to prevent development of asthma. The number of sensitizations may not influence the effect. Since early allergic multisensitization and multimorbidity is associated with a low chance of remission and high risk of progression of allergic airway disease this group would be an obvious target for preventive AIT, which remains to be investigated.

Summary: AIT might be considered at an earlier age than hitherto. Most AIT studies have not stratified the results based on sensitizations and comorbidities. We recommend existing randomized controlled trial data to be reevaluated for this purpose.

Keywords: airway disease; allergen immunotherapy; progression.

- **53 references**

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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Cite

34

Am J Respir Crit Care Med

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. 2025 Dec;211(12):2396-2399.

doi: 10.1164/rccm.202503-0721RL.

Normal FEV_1 without Reversibility in Asthma Trials: A Placebo Patient-Level Meta-Analysis

Simon Couillard [1 2 3], Samuel Mailhot-Larouche [1], Fleur L Meulmeester [2], Guy Brusselle [4], Philippe Lachapelle [1], Richard W Beasley [5], Jacob K Sont [2], Ewout W Steyerberg [6], Ian D Pavord [3], Njira Lugogo [7]; ORACLE2 Consortium

Affiliations Expand

- **PMID: 40824179**

- **DOI: 10.1164/rccm.202503-0721RL**

No abstract available

Supplementary info

Publication types, Grants and fundingExpand

Full text links

Cite

35

Ann Am Thorac Soc

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. 2025 Dec;22(12):1853-1862.

doi: 10.1513/AnnalsATS.202412-1329OC.

Cough in Adults with Undiagnosed Respiratory Symptoms

Sheojung Shin [1], Jessica Poliwoda [1], G A Whitmore [2], Katherine L Vandemheen [1], Celine Bergeron [3], Louis-Philippe Boulet [4], Andréanne Côté [4], Stephen K Field [5], Erika Penz [6], R Andrew McIvor [7], Catherine Lemière [8], Samir Gupta [9], Paul Hernandez [10], Irvin Mayers [11], Mohit Bhutani [11], M Diane Lougheed [12], Christopher J Licskai [13], Tanweer Azher [14], Nicole Ezer [15], Martha Ainslie [16], Tetyana Kendzerska [1], Gonzalo G Alvarez [1], Sunita Mulpuru [1], Shawn D Aaron [1]

Affiliations Expand

- PMID: 40788604

- DOI: 10.1513/AnnalsATS.202412-1329OC

Abstract

Rationale: Cough is a common symptom of undiagnosed respiratory conditions. Objectives: To investigate cough in adults with undiagnosed respiratory symptoms and its association with quality of life (QoL), sleep quality, and healthcare utilization for respiratory illness. Methods: We used a case-finding strategy to find community-dwelling adults with respiratory symptoms but no previous history of diagnosed lung disease. Pre and postbronchodilator spirometry determined if participants met diagnostic criteria for asthma, chronic obstructive pulmonary disease (COPD), or preserved ratio impaired spirometry, or if they had normal spirometry. Twelve questions from the Asthma Screening Questionnaire, COPD Assessment Test, and the St. George's Respiratory Questionnaire were used to develop a cough score. The 36-Item Short Form Survey and Global Sleep Assessment Questionnaire were used to assess QoL and sleep quality, respectively. Results: Adults with undiagnosed respiratory symptoms (*n* = 2,857; mean score, 57.8; 95% confidence interval [CI], 56.9 to 58.6) reported higher cough scores than age-matched control subjects (*n* = 231; mean score, 17.7; 95% CI, 15.6 to 19.8). Participants found to have asthma (*n* = 265; mean score, 61.0; 95% CI, 58.2 to 63.7) and COPD (*n* = 330; mean score, 61.8; 95% CI, 59.3 to 64.3) had higher cough scores than those with preserved ratio impaired spirometry (*n* = 172; mean

score, 54.5; 95% CI, 51.1 to 58.0) or normal spirometry (*n* = 2,090; mean score, 57.0; 95% CI, 56.0 to 58.0). Higher cough scores were associated with decreased QoL (lower 36-Item Short Form Survey score; regression coefficient, -0.19; 95% CI, -0.22 to -0.17; *P* < 0.001), worse sleep quality (higher Global Sleep Assessment Questionnaire score; regression coefficient, 0.16; 95% CI, 0.14 to 0.18; *P* < 0.001), and higher healthcare utilization for respiratory illness (incidence rate ratio, 1.007; 95% CI, 1.004 to 1.010; *P* < 0.001). Conclusions: In adults with undiagnosed respiratory symptoms, cough was most severe in those with undiagnosed asthma or COPD and was independently associated with worse QoL, impaired sleep quality, and higher healthcare utilization for respiratory illness.

Keywords: asthma; chronic obstructive pulmonary disease; cough; quality of life; sleep.

Supplementary info

MeSH terms, Grants and fundingExpa

Allergy

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. 2025 Dec;80(12):3454-3457.

doi: 10.1111/all.70001. Epub 2025 Aug 2.

Associations Between Blood Eosinophil Surface Proteins and Clinical Traits in Severe Asthma and Chronic Rhinosinusitis With Nasal Polyposis

Emeline Delaunay [1 2], Stephane Esnault [1 2 3], Arnaud Dendooven [1 2], Thomas Stoup [4], Thibaut Vanderhaegen [5], Louison Jan [5], Laurine Cadart [6], Cecile Chenivesse [7 8], Geoffrey Mortuaire [1 5], Guillaume Lefèvre [1 2]

Affiliations Expand

- PMID: 40751399
- PMCID: PMC12666750
- DOI: 10.1111/all.70001

No abstract available

Keywords: CRSwNP; disease severity; eosinophils; severe asthma; surface protein expression.

Conflict of interest statement

C. Chenivesse declares research grants from AstraZeneca, GSK, Santelys, and Novartis; personal fees from ALK-Abello, AstraZeneca, Boehringer-Ingelheim, Celtrion, Chiesi, Sanofi, and GSK; and congress support from AstraZeneca, Boehringer Ingelheim, Chiesi, Sanofi, and Novartis. G. Lefèvre received consulting fees, personal fees for advisory boards or meetings, and research funding from AstraZeneca and GSK. The rest of the authors declare that they have no relevant conflicts of interest.

- 6 references
- 1 figure

Supplementary info

Publication types, Grants and fundingExpand

Full text links

Proceed to details

Cite

2

Review

Ann Med

-
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. 2025 Dec;57(1):2537910.

doi: 10.1080/07853890.2025.2537910. Epub 2025 Jul 24.

Molecular profiling of exhaled breath condensate in respiratory diseases

Mario Malerba [1 2], Beatrice Purghè [3], Beatrice Ragnoli [1 2], Marcello Manfredi [3 4], Gianluca Baldanzi [3]

Affiliations Expand

- PMID: 40708204
- PMCID: PMC12302435
- DOI: 10.1080/07853890.2025.2537910

Abstract

Background: Respiratory disorders, , continue to pose a major global health burden. Their complexity and heterogeneity challenge accurate diagnosis, effective monitoring, and therapeutic decision-making. Exhaled breath condensate (EBC) provides a reliable, non-invasive means of sampling the molecular environment of the airways.

Aim: This review presents the state-of-the-art in EBC-based omics approaches-particularly metabolomics and proteomics-to characterize molecular signatures associated with chronic respiratory (e.g. asthma, chronic obstructive pulmonary disease, and rhinitis) and infectious diseases (e.g. COVID-19).

Results: We critically examine findings from studies applying nuclear magnetic resonance (NMR), mass spectrometry (MS), and sensor-based technologies to analyze EBC across various respiratory conditions. NMR, valued for its reproducibility and minimal sample preparation, consistently discriminates among disease phenotypes, identifies distinct metabotypes, and monitors treatment response over time. MS-based approaches afford enhanced sensitivity and specificity, enabling detailed profiling of inflammatory mediators, such as lipid-derived eicosanoids and amino acid derivatives. Proteomic studies reveal protein-level alterations associated with inflammation and tissue remodeling. In COVID-19 and long COVID, metabolomic and volatile compound profiling distinguishes affected individuals from healthy controls suggesting clinical potential. However, inconsistent sample processing and lack of analytical standardization remain limiting factors.

Conclusions: EBC profiling shows clear promise for improving diagnosis, monitoring, and stratification in respiratory medicine. Yet, translation into clinical practice is hindered by limited standardization and validation. Broader, longitudinal studies will be essential to establish robust molecular signatures across disease states. This review underscores the timely need to implement breathomics investigations to gain mechanistic insight into the underlying biology of respiratory diseases.

Keywords: Molecular profiling; breathomics; exhaled breath condensate; mass spectrometry; metabolome; nuclear magnetic resonance; proteome.

Conflict of interest statement

All the authors have no relevant affiliations of financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript.

- **124 references**
- **2 figures**

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links

Cite

3

Case Reports

Arch Bronconeumol

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-
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. 2025 Dec;61(12):794-796.

doi: 10.1016/j.arbres.2025.06.016. Epub 2025 Jul 5.

Stability of Asthma Biomarkers Over a Two-year Period Using Three Distinct Classifications in the MEGA Cohort

[Article in English, Spanish]

Diana Betancor [1], Manuel Jorge Rial [2], José María Olaguibel [3], Victoria Del Pozo [4], María José Alvarez Puebla [5], Ebymar Arismendi [6], Blanca Barroso [7], Irina Bobolea [6], Blanca Cárdaba [4], Jose Antonio Cañas [4], Javier Domínguez-Ortega [8], Astrid Crespo-Leshman [9], María Jesús Cruz [10], Alberto Garcia de la Fuente [6], Francisco-Javier González-Barcala [11], Jose Antonio Luna-Porta [8], Carlos Martínez-Rivera [12], Joaquim Mullol [13], Xavier Muñoz [14], Vicente Plaza [9], Santiago Quirce [8], Lorena Soto-Retes [9], Marcela Valverde-Monge [7], Joaquin Sastre [7]

Affiliations Expand

- PMID: 40707281

- DOI: 10.1016/j.arbres.2025.06.016

No abstract available

Supplementary info

Publication typesExpand

Full text links

Cite

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Ann Am Thorac Soc

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. 2025 Dec;22(12):1900-1910.

doi: 10.1513/AnnalsATS.202502-205OC.

Oscillometry Measures the Response to Acute Asthma Therapy in the Pediatric Emergency Department

Nidhya Navanandan [1], Ella Hagopian [2], John T Brinton [2], Melisa Tanverdi [1], Alec Edid [1], Chris Linn [1], Helio Sulbaran [1], Todd A Florin [3], Rakesh D Mistry [4], Max A Seibold [5 6], Stanley J Szefler [7], Andrew H Liu [7], Katharine L Hamlington [7]

Affiliations Expand

- PMID: 40705565

- DOI: 10.1513/AnnalsATS.202502-205OC

Abstract

Rationale: Oscillometry is a feasible and safe method to measure pulmonary function in children with asthma exacerbations in the emergency department (ED), but its utility to measure respiratory impedance as an objective marker of response to initial acute asthma treatments is unknown. Objectives: We sought to determine the associations between respiratory impedance-derived metrics and asthma exacerbation severity and treatment response in the pediatric ED. Methods: We conducted a prospective study of children, ages 4-18 years, who presented to a tertiary-care pediatric ED for asthma exacerbations. Respiratory system impedance was measured with oscillometry before and after initial treatment with inhaled bronchodilators and systemic corticosteroids. Regression models estimated the associations between respiratory impedance-derived metrics (low-frequency resistance, R7, a measure of total airway obstruction; frequency dependence of resistance, R7-19, a measure of peripheral airway resistance; and reactance area, AX, a measure of lung tissue stiffness and variability in ventilation), vital signs, and clinical outcomes. Receiver operating characteristic analyses were used to quantify the ability of respiratory impedance-derived metrics and vital signs to discriminate outcomes. Results: Of 177 participants, 144 (81%) completed a valid initial oscillometry assessment. Forty-seven percent had moderate or severe exacerbations, and 61% met the treatment response definition. Frequency dependence of resistance (R7-19: adjusted odds ratio [aOR], 1.39; 95% confidence interval [CI] = 1.08-1.83) and area of reactance (AX: aOR, 1.28; 95% CI = 1.05-1.58), were associated with higher odds of moderate or severe exacerbation. Greater

initial R7-19 was associated with decreased odds of treatment response (aOR, 0.75; 95% CI = 0.57-0.98). A combination of impedance-derived metrics and vital signs best differentiated exacerbation severity (area under the curve [AUC] = 0.73), treatment response (AUC = 0.69), and hospitalization (AUC = 0.78). Conclusions: Respiratory impedance-derived metrics (R7, R7-19, and AX), in combination with vital signs, can guide ED clinical decisions and improve outcomes for children with asthma exacerbations.

Keywords: health services; respiratory function tests; respiratory tract disease.

- Cited by 1 article

Supplementary info

MeSH terms, Substances, Grants and fundingExpand

Full text links

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Cite

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Allergy

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. 2025 Dec;80(12):3260-3273.

doi: 10.1111/all.16647. Epub 2025 Jul 19.

A Novel Questionnaire and Algorithm for Work-Related Asthma Screening and Surveillance: An EAACI Task Force Report

Mohamed F Jeebhay [1], Hille Suojalehto [2], Susan M Tarlo [3], Eva Suarthana [4], Paul Cullinan [5], Irmeli Lindström [2], Paola Mason [6], Xavier Munoz [7], Monika Raulf [8], Marcela Valverde [9], Jolanta Walusiak-Skorupa [10], Paul Henneberger [11]

Affiliations Expand

- PMID: 40682334

- PMCID: PMC12666758

- DOI: 10.1111/all.16647

Abstract

Introduction: Work-related exposures contribute to one in six new-onset adult asthma cases and exacerbation of one in five existing cases, which together are termed 'work-related asthma' (WRA). A valid and standardized WRA questionnaire is needed for workplace surveillance and epidemiological studies. This project aimed to review evidence on WRA questionnaires and algorithms to propose a standardized instrument.

Methods: A scoping review was conducted using PubMed, Embase, and Cochrane databases up to March 2021. Search terms focused on asthma, occupational diseases, questionnaires, surveys, and algorithms. High-quality studies were identified and data extracted on instrument construction, validation, and performance. Common questions were used to develop a questionnaire and algorithm for detecting suspected WRA.

Results: Six studies were included. The final WRA questionnaire consists of eight questions on general asthma symptoms, diagnosis, and medication; four on WRA symptoms; and two on work-related ocular-nasal symptoms. The algorithm calculates a WRA total score (WRATS) based on the general asthma and work-related symptoms. A score of ≥ 1 triggers a referral for further evaluation.

Conclusion: This is the first WRA questionnaire based on validated questionnaires. Evaluation of its performance and validation in diverse geographic and occupational settings are needed for further refinement and translation for broader applications.

Keywords: algorithm; asthma; questionnaire; surveillance; work-related.

Conflict of interest statement

Susan Tarlo has performed clinical consultations of patients at the request of the Ontario Workplace Safety and Insurance Board (WSIB) and the WSIB appeals tribunal. She has also received research funding from WSIB. The remaining authors declare no conflicts of interest in relation to this work.

- **35 references**
- **3 figures**

Supplementary info

Publication types, MeSH terms, Grants and fundingExpand

Full text links

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Editorial

Am J Respir Cell Mol Biol

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. 2025 Dec;73(6):821-822.

doi: 10.1165/rcmb.2025-0371ED.

"Scripts" Don't Lie: Sex and Age Shape Blood Immune Gene Expression in Asthma

Patricia Silveyra [1]

Affiliations Expand

- PMID: 40600924

- DOI: 10.1165/rcmb.2025-0371ED

No abstract available

Comment on

- Sex-biased Gene Expression Underlies Immune Dysfunction in Asthma.

Kay S, Rajeevan H, Son M, Kwah J, Ramirez M, Liu Y, Wang Z, Yan X, Nino G, Britto C, Chupp G, Gomez JL.Am J Respir Cell Mol Biol. 2025 Dec;73(6):884-896. doi: 10.1165/rcmb.2024-0565OC.PMID: 40587876

Supplementary info

Publication typesExpand

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AJRCMB Final Version

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Infection

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. 2025 Dec;53(6):2523-2531.

doi: 10.1007/s15010-025-02588-8. Epub 2025 Jun 25.

Evaluating the associations among asthma, asthma control and long COVID in U.S. adults

Chun-Tse Hung [1], Yu-Chien Hung [2], Chi-Won Suk [3], Chung-Hsuen Wu [4]

Affiliations Expand

- PMID: 40560299

- DOI: 10.1007/s15010-025-02588-8

Abstract

Objective: This study aimed to evaluate (1) the association between asthma and long COVID among U.S. adults and (2) the association between asthma control and long COVID among U.S. adults with asthma.

Methods: Data from the 2023 National Health Interview Survey were used. Adults aged ≥ 18 years were included. Asthma control was measured by the history of asthma attacks and emergency room (ER) visits for asthma. Multivariable logistic regression models were used to evaluate the associations. A sensitivity analysis was performed by stratifying long COVID severity.

Results: A total of 258,237,552 adults were included in this study. The prevalence of long COVID among U.S. adults in 2023 was 8.2%. When stratified by the presence of asthma, the prevalence was 15.2% for those with asthma and 7.6% for those without asthma ($P < 0.01$). After adjusting for covariates, adults with asthma had higher odds of long COVID than those without asthma (OR, 1.58; 95% CI, 1.37-1.83). This association was consistent across long COVID severity levels. Poor asthma control was associated with increased odds of long COVID (asthma attacks: OR, 1.47; 95% CI, 1.09-1.97; ER visits for asthma: OR, 1.52; 95% CI, 1.02-2.27).

Conclusion: Asthma was associated with increased odds of long COVID. Patients with poorly controlled asthma were associated with increased odds of long COVID. From a clinical perspective, it is crucial to proactively identify patients with asthma at increased risk of long COVID, especially those with certain comorbidities. Future research on specific symptoms and the duration of long COVID among patients with asthma will benefit clinical practice.

Keywords: Asthma; Asthma control; COVID-19; Long COVID; National Health Interview Survey; Post COVID-19 condition.

Conflict of interest statement

Declarations. Competing interests: The authors declare no competing interests.

- 27 references

Supplementary info

MeSH termsExpand

Full text links

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Cite

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Am J Respir Cell Mol Biol

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. 2025 Dec;73(6):835-848.

doi: 10.1165/rcmb.2024-0395OC.

IL-33 Induces a Protective Response against Irritant-induced Airway Inflammation and Dysfunction

Utako Fujii [1 2], Tomotaka Nishizawa [1 2], Yumiko Ishii [1 2], Emily Nakada [1 2], Kosuke Makita [1 2], Rui Sun [1 2], Toby McGovern [1 2], Arina Morozan [1 2], Rohin Chakraborty [1 2], James G Martin [1 2]

Affiliations Expand

- PMID: 40460408

- DOI: 10.1165/rcmb.2024-0395OC

Abstract

IL-33 released by injurious stimuli to airway epithelium activates innate lymphoid cells (ILCs) that express IL-13. IL-33 and ILCs have an important role in type 2 (T2)-high asthma, but their influence on airway dysfunction induced by irritants is unclear. We examined the effects of Cl_2 inhalation on IL-33 release, pulmonary ILCs, airway inflammation, and airway hyperresponsiveness (AHR). Cl_2 exposure resulted in IL-33 release and increased ILC2s in the airways of BALB/c mice. Inhibition of the IL-33 receptor did not alter AHR, but depletion of ILCs augmented AHR. Recombinant IL-33 given for 3 successive days to wild-type and $Rag1^{-/-}$ (recombinant activating gene-deficient) mice, deficient in mature T and B cells, further increased ILC2s and inhibited Cl_2-induced neutrophilia and AHR, whereas

Rag$^{-/-}$ IL2rγ$^{-/-}$ mice, lacking ILCs, did not show these effects. IL-33 increased IL-13 expression by ILC2s, and IL-13 neutralization exacerbated AHR, whereas IL-13 administration reduced AHR in Cl_2-exposed Rag1$^{-/-}$ mice. IL-33 biased alveolar macrophages toward the M2 phenotype, partly mediated by IL-13. Depletion with clodronate liposomes abrogated the IL-33 protective effect on AHR. The data suggest that the expansion of ILC2s by IL-33 activates a protective pathway involving IL-13 and macrophages against airway dysfunction and inflammation after inhalation of Cl_2.

Keywords: IL-10; IL-13; asthma; innate lymphoid cells; neutrophil.

Comment in

- **Regulating Neutrophilic Asthma with IL-33: Maybe We Shouldn't Block IL-33 after All?**

Bowles AH, Warren KJ.Am J Respir Cell Mol Biol. 2025 Dec;73(6):813-815. doi: 10.1165/rcmb.2025-0230ED.PMID: 40466037 No abstract available.

Supplementary info

MeSH terms, Substances, Grants and fundingExpand

Full text links

AJRCMB Final Version

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Multicenter Study

Arch Bronconeumol

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. 2025 Dec;61(12):749-756.

doi: 10.1016/j.arbres.2025.04.003. Epub 2025 Apr 26.

Early Failure, Late Failure, and Sustained Response to Biologics in Severe Asthma: A Long-term, Real-world, Multicentre study

[Article in English, Spanish]

D Dacal Rivas [1], E Martinez-Moragón [2], V Plaza [3], C Cisneros Serrano [4], C Benchimol [3], H Izaguirre Flores [5], S Sánchez-Cuéllar [6], M D Martínez-Pitarch [7], C Fernández Aracil [8], A Trisán Alonso [9], J C Serrano Rebollo [10], Z Vásquez

Gambasica [11], R M Díaz Campos [12], P Trujillo Mulato [13], I Escribano Gimeno [14], D Laorden [15], E Arismendi [16], N Marina Malanda [17], A De Diego Damia [18], M Ferrer Galvan [19], I Dávila [20], J Ortiz de Saracho Bobo [21], B G Cosio [22], L A Pérez de Llano [23]; REMOTE study group

Affiliations Expand

- PMID: 40348717

- DOI: 10.1016/j.arbres.2025.04.003

Abstract

Objectives: Only one-third of patients with severe asthma (SA) achieve a complete response to biologics. This study aims to characterize two types of failure: early (EF), occurring ≤12 months after biologic initiation, and late (LF), occurring at any time during follow-up after response has been achieved at 12 months.

Methods: This is a multicentre retrospective study of adults treated with the same biologic for ≥24 months. Response was defined as no severe exacerbations in the preceding 12 months, asthma control test ≥20, and no need for maintenance oral corticosteroids. Failure (EF or LF) was defined as non-achievement of any of these objectives.

Results: Two hundred and seventy-two patients were analysed with a mean follow-up of 46.1±19.4 months. At 12 months, 97/272 were classified as PF, but 40% of them recovered response on subsequent visits (by changing inhaled therapy in 74%). Among the 175 responders at 12 months, 124 (70.8%) maintained response throughout the study period, while 51 (29.1%) experienced SF; those patients had lower FEV1 values after 12 months of biological therapy. SF reverted in 36% of cases, with inhaled therapy changes in 41.6%. FEV1 decreased by ≥100mL in 12 of 16 cases who did not recover response after SF.

Conclusion: Most patients who achieve response at 12 months maintain it over time, but 29% of them suffer LF. Optimization of inhaled therapy can aid response recovery from EF or LF. Maximizing pulmonary function helps to prevent loss of response.

Keywords: Biologics; Early failure; Late failure; Long-term study; Severe asthma; Treatment response.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links

Cite

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J Pharm Pract

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. 2025 Dec;38(6):511-517.

doi: 10.1177/08971900251320740. Epub 2025 Feb 14.

Improvements in Asthma Control After Pharmacist Involvement in an Outpatient Pediatric Asthma Clinic

Lauren Anthony [1], Sandra Axtell [1], Bianca Nixon [1]

Affiliations Expand

- PMID: 39953701

- DOI: 10.1177/08971900251320740

Abstract

Background: Asthma is one of the most common pediatric disease states. However, current literature about outpatient pharmacy appointment effectiveness on pediatric asthma control is not widely available. Objective: To determine whether outpatient pharmacist visits in pediatric patients with asthma result in a measurable difference in asthma control, utilizing the validated asthma control test (ACT) and childhood asthma control test (C-ACT) scoring tools. Methods: This study enrolled 16 children ages 6-17 years old at an outpatient primary care clinic (November 2023-April 2024). The patients visited the outpatient pharmacist 2 to 3 times over a 12-week period. The primary outcome was the change in the patient's ACT or C-ACT from the baseline to the final study visit. Additional outcomes of interest included improvement in inhaler technique using a Vitalograph AIM® device, medication adherence rates, and change in emergent interventions from 6 months before enrollment compared to 3 months after the final visit. Results: The median improvement in asthma control test was 3 at the final study visit (4 or 12 weeks after counseling), which was statistically significant (P = 0.0348). This was an improvement from 50% of patients controlled at baseline to 100% at the final visit (P = 0.0053). Emergent interventions including oral steroid courses, emergency department visits, and hospitalization for asthma were less common after pharmacist intervention than before enrollment (P = 0.0464). Improvements in technique were seen at the initial visit using Vitalograph AIM® to visualize counseling points. Conclusion: Our study supports that outpatient pharmacist visits can have a measurable impact on pediatric asthma control.

Keywords: ambulatory care; asthma; pediatric; pharmacist; primary care.

Conflict of interest statement

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

Supplementary info

MeSH terms, SubstancesExpand

Full text links

Sage Journals

Proceed to details

Cite

11

Review

Paediatr Respir Rev

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. 2025 Dec:56:29-36.

doi: 10.1016/j.prrv.2024.10.004. Epub 2024 Nov 1.

New paradigms in acute viral bronchiolitis: Is it time to change our approach?

Jose A Castro-Rodriguez [1], Patricio Astudillo [2], Sandeep Puranik [3], Mark A Brown [4], Adnan Custovic [5], Erick Forno [3]

Affiliations Expand

- **PMID: 39592274**

- **DOI: 10.1016/j.prrv.2024.10.004**

Abstract

Viral bronchiolitis is the most common pediatric acute respiratory infection leading to hospitalization, and it causes a significant healthcare burden worldwide. Current guidelines recommend supportive management after many clinical trials on specific therapies failed to demonstrate benefits. However, several studies in the past decade have revealed that bronchiolitis may not be a homogeneous disease, but instead may constitute an umbrella comprised of different "endotypes" and "phenotypes" based on patient characteristics, etiology, pathophysiological

mechanisms, and clinical presentation. In this extensive review, we summarize the current evidence that several different types of bronchiolitis ("bronchiolitides") coexist, with different short- and long-term consequences on respiratory health and the risk of asthma development. Disease pathobiology, immune response, and clinical characteristics may differ between the two most prevalent viral agents, respiratory syncytial virus and rhinovirus. Recent randomized trials have shown that some subgroups of children may benefit from the use of systemic corticosteroids and/or bronchodilators. These findings also suggest that some children may benefit from individualized therapeutical approaches for viral bronchiolitis rather than following broad recommendations for treating all patients uniformly using only supportive management.

Keywords: Acute viral bronchiolitis; Asthma; Phenotypes; Recurrent wheezing; Respiratory syncytial virus; Rhinovirus; Viral infection.

Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Erick Forno reports financial support was provided by Riley Children's Foundation. The other 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.

- Cited by 1 article

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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Cite

12

Multicenter Study

J Adv Nurs

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. 2025 Dec;81(12):8200-8217.

doi: 10.1111/jan.16513. Epub 2024 Oct 25.

The Climate-Asthma Connection: Examining the Influence of Climate Change Anxiety on Asthma Control and Quality of Life: A Multi-National Study

Mohamed Hussein Ramadan Atta [1 2], Ahmed Abdelwahab Ibrahim El-Sayed [3 4], Fuad Taleb [5 6], Shimmaa Mohamed Elsayed [7], Sharaf Omar Al Shurafi [8], Asmaa Altaheri [9], Mokhtar Abdu Almoliky [10 11], Maha Gamal Ramadan Asal [12]

Affiliations Expand

- PMID: 39451046

- DOI: 10.1111/jan.16513

Abstract

Aims: This study aims to identify the impact of climate change anxiety and asthma control on asthmatics' quality of life and examine the moderating role of climate change anxiety in this linkage.

Method: A multi-national cross-sectional study was conducted in four Arabian countries on 1266 asthmatics selected by convenience sampling. Data were collected from November 2023 to February 2024 using a climate anxiety scale, mini-asthma quality of life questionnaire, and an asthma control questionnaire.

Results: Climate anxiety was higher among middle-aged participants, as well as those with longer disease durations and previous hospitalisations. Climate anxiety showed strong negative correlations with asthma control ($r = -0.704$, $p \leq 0.05$) and asthma quality of life ($r = -0.638$, $p \leq 0.05$). Climate anxiety and asthma control are powerful predictors of quality of life among asthmatics. Climate anxiety moderates the relationship between asthma control and quality of life, making it less positive ($B = -0.094$, $p > 0.001$). Covariates such as gender, age, comorbidities, employment status, disease duration, and previous hospitalisation showed significant associations with asthma quality of life.

Implications for nursing practice: Assessment and mitigation of climate anxiety among asthmatics is a key strategy for controlling asthma and improving the quality of life. So, nurses must incorporate climate anxiety assessment into the care plan for asthmatics.

Impact: Climate change is a global concern, and insights into how climate-related psychological stressors exacerbate asthma symptoms and overall health outcomes are necessary. The findings provide actionable data for healthcare professionals to underscore the need for integrated healthcare approaches considering environmental and psychological factors.

Reporting method: This study adheres to strengthening the reporting of observational studies in epidemiology (STROBE) statement.

Patient or public contribution: Clients with asthma across multiple nationalities actively contributed to our paper.

Keywords: asthma; climate anxiety; climate change; control; quality of life.

- **Cited by 2 articles**
- **84 references**

Supplementary info

Publication types, MeSH terms, Grants and fundingExpand

Full text links

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

1

JAMA

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. 2025 Dec 3.

doi: 10.1001/jama.2025.19748. Online ahead of print.

Climate Change, Allergic Rhinitis, and Sinusitis

Duncan A Meiklejohn [1], Neelima Tummala [2], M Lauren Lalakea [3]

Affiliations Expand

- **PMID: 41335404**
- **DOI: 10.1001/jama.2025.19748**

No abstract available

Plain language summary

This JAMA Insights explores how climate change could lead to increased incidence of allergic rhinitis and chronic rhinosinusitis due to such factors as air pollution and pollen levels.

Proceed to details

Cite

2

Expert Rev Respir Med

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. 2025 Dec 3.

doi: 10.1080/17476348.2025.2600110. Online ahead of print.

The current evidence regarding the efficacy of tezepelumab administered for asthma on T2-related comorbidities

Angelica Tiotiu [1 2]

Affiliations Expand

- PMID: 41334919

- DOI: 10.1080/17476348.2025.2600110

Abstract

Introduction: T2-comorbidities are the most common in severe asthma (SA) patients and have a negative impact on disease outcomes but also an important socio-economic burden. Treating SA and its comorbidities by one medication is a very exciting possibility for the clinicians. Several biologics used for SA showed benefits on T2-comorbidities, but currently more limited data exists for tezepelumab, most recently developed in this domain.

Areas covered: This paper summarizes the available evidence regarding the efficacy of tezepelumab on T2-comorbidities of SA. Electronic search queries were applied to PubMed and Medline databases by using the following terms: 'tezepelumab,' 'severe asthma,' 'allergic rhinitis' (AR), 'chronic rhinosinusitis,' 'nasal polyps' (CRSwNP), 'aspirin exacerbated disease (AERD),' 'atopic dermatitis' (AD), 'eczema,' 'chronique spontaneous urticaria' (CSU),'food allergy' (FA), 'eosinophilic esophagitis' (EE).

Expert opinion: Tezepelumab treatment showed undeniable benefits on CRSwNP and AERD by improving nasal and asthma outcomes. If the efficacy of tezepelumab on severe allergic asthma is well documented, current data is insufficient to conclude on its impact on AR. The effects of tezepelumab on AD and CSU were disappointing. No consistent data exists regarding FA and EE. Future studies are needed to confirm the efficacy of tezepelumab on AR, FA and EE.

Keywords: Efficacy; T2 comorbiditites; severe asthma; tezepelumab.

Proceed to details

Cite

3

Review

Acta Otorhinolaryngol Ital

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. 2025 Dec;45(6):369-379.

doi: 10.14639/0392-100X-A1260.

The nature of nasal discharge in chronic rhinosinusitis: a systematic review and meta-analysis using patient-reported outcomes

Ethan M Kallenberger [1], Asher T Ripp [1 2], Shaun A Nguyen [1], Erin E Briggs [1 3], Alexander N Duffy [1], Isabella V Schafer [1], Jess C Mace [4], Timothy L Smith [4], Zachary M Soler [1], Rodney J Schlosser [1 5]

Affiliations Expand

- PMID: 41334640

- DOI: 10.14639/0392-100X-A1260

Abstract

Objective: The objective of this study is to answer the question "What is the most common and severe type of nasal discharge in patients with chronic rhinosinusitis (CRS) at baseline as measured by patient-reported outcomes?".

Methodology: Two independent reviewers evaluated studies for inclusion, extracted data from included studies, and performed critical appraisal of studies. Data on the four Sino-Nasal Outcome Test 22 (SNOT22) discharge questions, demographic, and comorbidity data was collected. Meta-analysis of single means and proportions was performed for demographic, comorbidity, severity, and prevalence data.

Results: A total of 53 studies (n = 6584) were included for analysis. Postnasal drip (PND) was the most severe symptom (2.6, 95%CI: 2.2-3) and most prevalent (80.7%, 95%CI: 53.0-97.7). Patients without nasal polyps had a higher PND score than those with polyps (2.56 vs 2.40, 95%CI: 0.1-0.2). However, patients with polyps reported higher symptom scores for need to blow nose, runny nose, and thick nasal discharge (all $p < 0.0001$).

Conclusions: CRS patients experience PND at a higher prevalence and severity at baseline than the other three forms of nasal discharge captured by the SNOT22. Polyp status influences differing symptoms of nasal drainage. Comorbid asthma or allergies are associated with more severe PND and total SNOT22 scores.

Keywords: prevalence; quality of life; rhinosinusitis; sino-nasal outcome test.

Supplementary info

Publication types, MeSH termsExpand

Proceed to details

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4

BMC Immunol

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. 2025 Dec 3.

doi: 10.1186/s12865-025-00777-6. Online ahead of print.

Efficacy and safety of Depemokimab in asthma with eosinophilic phenotype: a systematic review and meta-analysis of randomized controlled trials

Basir Afzaal Gill [# 1], Anum Ijaz [# 2], Noor Fatima [3], Arsalan Ahmed [4], Ayesha Noor [5], Samia Sharif [6], Ishrat Fatima [2], Amna Saeeda [7], Hansa Devi [8], Muhammad Nabeel Saddique [9 10 11]

Affiliations Expand

- **PMID: 41331792**

- **DOI: 10.1186/s12865-025-00777-6**

Abstract

Introduction: Asthma is a complex and heterogeneous disease that significantly impacts quality of life. Eosinophilic asthma, characterized by elevated eosinophil levels, leads to inflammation and hypersensitivity. Many patients remain inadequately managed, resulting in frequent exacerbations and hospitalizations despite standard treatment options. Depemokimab, a long-acting monoclonal antibody that targets IL-5, could offer a novel approach for managing severe eosinophilic asthma.

Methods: A systematic search was conducted across the PubMed, Cochrane Library, Embase, ClinicalTrials.gov, and Scopus databases up to January 2025. Dichotomous outcomes were pooled as risk ratios (RR), and continuous outcomes were represented as mean differences (MD) from baselines, with 95% confidence

intervals (CIs), using a random-effects model. Statistical analysis was performed using RevMan (version 5.4).

Results: Two randomized controlled trials (n = 762) were included. Depemokimab significantly reduced the annualized rate of exacerbations (MD -0.59, 95% CI [-0.76 to -0.42], P < 0.00001) and improved the St. George's Respiratory Questionnaire (SGRQ) score (MD -2.93, 95% CI [-5.48 to -0.38], P = 0.02). It also significantly decreased the annualized rate of exacerbations requiring hospitalization or emergency department visits (RR 0.33, 95% CI [0.15 to 0.75], P = 0.008). No significant differences were observed in changes to the Asthma Control Questionnaire (ACQ-5) score, pre-bronchodilator FEV1, or asthma-related diaries. Safety outcomes indicated significantly lower risks for pneumonia, nasopharyngitis, rhinitis, and back pain in the Depemokimab group. However, an increased risk of allergic rhinitis was noted (RR 2.71, 95% CI [1.22 to 6.02], P = 0.01). No significant differences were observed in serious adverse events or other adverse events.

Conclusion: Depemokimab demonstrates promising efficacy in reducing clinically significant exacerbations and improving quality of life measures in patients with severe eosinophilic asthma, with a generally favorable safety profile. However, the current evidence is limited to two trials with relatively short follow-up periods. Further research with larger, more diverse patient populations and extended long-term follow-up is needed to establish the drug's definitive place in therapeutic algorithms and to comprehensively evaluate potential long-term safety concerns before widespread clinical implementation can be recommended.

Keywords: Asthma; Depemokimab; Meta-Analysis; Monoclonal antibody.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: Ethics approval and consent to participate is not applicable as this study involves publicly available data. Consent for publication: Consent for publication is not applicable as this study involves publicly available data. Competing interests: The authors declare no competing interests.

- 21 references

Proceed to details

Cite

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Allergy

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. 2025 Dec 1.

doi: 10.1111/all.70131. Online ahead of print.

Allergic Rhinitis and Its Impact on Asthma (ARIA)-EAACI Guidelines-2024-2025 Revision: Part I-Guidelines on Intranasal Treatments

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Albuquerque Costa [1], Olga Mariana Cunha [212], Biljana Cvetkovski [213], Victoria Cardona-Dahl [214 215], Gennaro D'Amato [216], Janet Davies [217 218], Danilo Di Bona [219], Sandra N Gonzalez Diaz [220], Maria V Dimou [26], Maria Doulaptsi [221], Renato Ferreira-da-Silva [1 2], Radoslaw Gawlik [222], Mario Calvo-Gil [223], Ozlem Goksel [224], Maximiliano R Gómez [225], Maia Gotua [226], Christos Grigoreas [227], Ineta Grisle [228], Maria Antonieta Guzman [229], Rachel House Tan [230 231], Michael Hyland [232], Despo Ierodiakonou [233], Aspasia Karavelia [234], Paul Keith [235], Marta Kisiel [236], Tanja Soklic Kosak [237], Mitja Kosnik [238 239], Ilgim Vardaloglu Koyuncu [240], Vicky Kritikos [241 242], Justyna Litynska [189 190], Carlo Lombardi [243], Gilles Louis [244 245], Matteo Martini [246 247], Cem Meço [248 249 250], Eris Mesonjesi [251], Florin Mihaltan [252], Marcin Moniuszko [253], Robert N Naclerio [254], Kari C Nadeau [255], Sophia Neisinger [3 4], Markus Ollert [256 257], Michal Ordak [258], Giovanni Paoletti [7 145], Hae-Sim Park [259], Elena Parmelli [17 260], Edgar Arturo Perdomo-Flores [261], José Miguel Fuentes Pérez [262], Nhan Pham-Thi [263 264 265], Emmanuel Prokopakis [221], Inês Ribeiro-Vaz [1 2], Giovanni Rolla [195], Jan Romantowski [130], Philippe Rombaux [266], Philip W Rouadi [267 268], Maia Rukhadze [269], Dermot Ryan [270], Ewelina Sadowska [189 190], Daiju Sakurai [271], Laila Salameh [272], Faradiba Serpa Sarquis [273], Elie Serrano [274], Jane Da Silva [275 276], Michael Soyka [277], Krzysztof Specjalski [130], Vesna Tomic-Spiric [278 279], Katarina Stevanovic [3 4], Abirami Subramaniam [280], Maria Do Ceu Teixeira [281 282], Tuuli Thomander [1 283 284], Martina Vachova [285 286], Marianne van Hage [287 288 289], Pakit Vichyanond [290 291], Martin Wagenmann [292], Fanny Wai San Ko [293], Pascal Werminghaus [294], Paraskevi Vicky Xepapadaki [26], Yi-Kui Xiang [3 4 295], Qintai Yang [296], Daniela Rivero Yeverino [297], Jaron Zuberbier [136], João A Fonseca [1 2]

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Abstract

Background: Allergic rhinitis (AR) impacts quality of life, work and school productivity. Over the last years, an important body of evidence resulting from mHealth data has led to a better understanding of AR. Such advances have motivated an EAACI-endorsed update of the Allergic Rhinitis and its Impact on Asthma (ARIA) guidelines (ARIA 2024-2025). This manuscript presents the ARIA 2024-2025 recommendations for intranasal treatments, one of the mainstays for AR management.

Methods: The ARIA 2024-2025 guideline panel issued recommendations following the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) evidence-to-decision framework. Several sources of evidence were used to inform panel judgments and recommendations, including systematic reviews, evaluation of mHealth and pharmacovigilance data, as well as a survey of experts on costs.

Results: Eleven guideline questions concerning intranasal treatments for AR were prioritized, leading to recommendations. Overall, these questions concern the choice between different classes of intranasal medications-most notably, intranasal

corticosteroids (INCS), antihistamines (INAH), fixed combinations of INAH+INCS and decongestants-or between different individual medications within each class. Four questions had not been evaluated in previous ARIA guidelines, while for the other three there was a change in the strength or directionality of recommendations. Overall, recommendations point to the suggested use of INAH+INCS over INAH or INCS and INCS over INAH.

Conclusion: This ARIA 2024-2025 article supports patients, their caregivers, and healthcare professionals in choosing an intranasal treatment. However, decisions on AR treatment should consider the clinical variability of the disease, patients' values, and the affordability of medications.

Keywords: allergic rhinitis; guidelines; intranasal antihistamines; intranasal corticosteroids.

- **36 references**

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Occup Environ Med

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Impact of World Trade Center dust exposure on upper-aero digestive tract disorders and sinonasal surgery: findings from patients seen in the Department of Otolaryngology - Head and Neck Surgery at Mount Sinai Hospital

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Affiliations Expand

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Abstract

Objective: We assessed upper-aero digestive tract disorders in World Trade Center (WTC) patients seen in the Otolaryngology - Head and Neck Surgery Department of a large New York City hospital system and the association between WTC exposure and sinonasal surgery for chronic rhinosinusitis (CRS).

Methods: Retrospective review of medical records of all WTC patients seen between July 2002 and December 2023. Primary exposure was measured by arrival date and exposure length to the disaster site. Primary outcomes were upper-aero digestive tract disorders and sinonasal surgery.

Results: 3118 WTC patients were reviewed. Of these, 1162 (37.3%) had CRS. CRS patients were more likely female (p=0.03) and had higher proportion of comorbid obstructive sleep apnoea (OSA) (p<0.0001), allergic rhinitis (p<0.0001) and gastro-oesophageal reflux disease (p<0.0001). 355 (31.0%) CRS patients underwent sinonasal surgery. Relative to the medically managed patients, surgical CRS patients were younger at time of 9/11 (p=0.006), had a higher proportion of comorbid OSA (p=0.02) and earlier exposure (arrival date 11 September-13 September prior to rainfall) (p=0.001). CRS patients with early exposure demonstrated significantly greater odds of undergoing sinonasal surgery compared with those with late exposure (adjusted OR 1.61; 95% CI 1.2 to 2.3).

Conclusions: Earlier arrival at WTC site increased the risk of needing surgery for responders with CRS. Higher levels of irritant exposure prior to rainfall on 14 September 2001 may have caused significant epithelial injury to the sinonasal mucosa of WTC patients, leading to an elevated prevalence of CRS requiring surgical intervention.

Keywords: Air pollution; Dust; Materials, exposures or occupational groups; Particulate Matter.

Conflict of interest statement

Competing interests: None declared.

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Allergic Rhinitis: Incidence and Remission From Childhood to Young Adulthood-A Prospective Study

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Review

Curr Opin Allergy Clin Immunol

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. 2025 Dec 1;25(6):488-492.

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Depemokimab: a new long-acting anti-IL5 treatment for severe asthma and chronic rhinosinusitis with nasal polyps

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- DOI: 10.1097/ACI.0000000000001112

Abstract

Purpose of review: Clinical data are reviewed pertaining to depemokimab, the first extended life anti-IL5 mAb, for treating severe eosinophilic asthma. This molecule was engineered through amino acid modification (YTE mutation) of the Fc region. This modification increases Fc receptor affinity and enables antibody recycling, thereby greatly extending serum half-life and will allow a dosing duration of 26 weeks.

Recent findings: Phase 1 and 3 clinical studies have demonstrated that depemokimab maintains drug concentrations and reduces peripheral eosinophils over a single 26-week dosing interval. A 52-week double-blinded, placebo-controlled (DBPC) Phase 3 study of patients with severe eosinophilic asthma demonstrated that depemokimab reduced annualized asthma exacerbations by 54% compared with placebo, the primary efficacy outcome. No significant differences between active and placebo arms were detected for secondary endpoints (e.g., symptoms, FEV1 and quality of life). Results of a noninferiority study comparing depemokimab, benralizumab and mepolizumab are pending. In a DBPC trial of chronic rhinosinusitis with nasal polyps (CRSwNP), depemokimab was also effective in reducing nasal polyp endoscopy scores and nasal obstruction.

Summary: Depemokimab could offer patients with severe persistent asthma a more convenient add-on treatment option than existing shorter acting biologics and thereby improve overall adherence.

Keywords: eosinophil; half-life; interleukin 5; mAb; severe asthma.

- 13 references

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Review

Rhinology

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. 2025 Dec 1;63(6):768-770.

doi: 10.4193/Rhin25.266.

Clinical management of dupilumab-induced blood eosinophilia in CRSwNP: a practical algorithm

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Affiliations Expand

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Abstract

Dupilumab is widely recognised as a highly effective therapy for severe chronic rhinosinusitis with nasal polyps (CRSwNP). A rise in blood eosinophil count (BEC) might occur during treatment across all approved indications. In CRSwNP, dupilumab-induced blood eosinophilia (DIBE) is typically of early onset, transient, and asymptomatic without impairing the drugâ€™s efficacy. A review including data from 11 clinical trials on all approved dupilumab indications reported eosinophilia-related clinical manifestations in only 7 of 4,666 patients receiving dupilumab. Real-world studies confirm DIBE is largely benign, with only rare AEs requiring dupilumab discontinuation such as eosinophilic pneumonia, especially in eosinophilic granulomatosis with polyangiitis (EGPA) patients. Such exceedingly rare events were mainly described within the first months of treatment, however late onset DIBE (after 6 months) has also been detected, especially in patients dependent on systemic corticosteroids.

Lancet Respir Med

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. 2025 Dec;13(12):1067-1077.

doi: 10.1016/S2213-2600(25)00287-5. Epub 2025 Sep 28.

Dupilumab versus omalizumab in patients with chronic rhinosinusitis with nasal polyps and coexisting asthma (EVEREST): a multicentre, randomised, double-blind, head-to-head phase 4 trial

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Abstract

Background: Chronic rhinosinusitis with nasal polyps (CRSwNP) is predominantly driven by type 2 inflammation. The biologics dupilumab and omalizumab, which target drivers and mediators of type 2 inflammation (interleukin [IL]-4/IL-13 signaling and immunoglobulin E [IgE], respectively), are efficacious in treating CRSwNP but direct comparisons are few. In EVEREST (EValuating trEatment RESponses of dupilumab versus omalizumab), the first head-to-head trial in respiratory biologics, we aimed to compare the efficacy and safety of dupilumab and omalizumab in patients with severe CRSwNP who had mild, moderate, or severe asthma.

Methods: EVEREST was an international, randomised, double-blind, phase 4 trial, conducted at 100 hospitals or clinical centres in 17 countries. Sites were selected with otolaryngology, pneumologist, allergist, and immunologist practices; needed to have previously conducted double-blind studies; and were required have nasal endoscopy and electrocardiogram machines. Eligible patients aged 18 years or older with severe uncontrolled CRSwNP (with a nasal polyp score of 5 or more [and ≥2 for each nostril]), symptoms of nasal congestion and loss of smell for at least 8 weeks before screening, and physician-diagnosed asthma. Patients were randomly assigned (1:1) to subcutaneous dupilumab 300 mg every 2 weeks or omalizumab weight-tiered and IgE-tiered dosing every 2 weeks or 4 weeks for 24 weeks, with background mometasone furoate nasal spray. Patients and investigators were masked to the study drugs. Primary endpoints were change from baseline in endoscopic nasal polyp score and University of Pennsylvania Smell Identification Test (UPSIT) at 24 weeks. Efficacy was assessed in the intention-to-treat population

and safety was assessed in patients who received at least one dose of study medication. The trial was registered at ClinicalTrials.gov, NCT04998604.

Findings: Between Sept 27, 2021, and Dec 27, 2024, 819 individuals were screened for study inclusion, 459 were excluded (most common screen failures were: 167 did not meet nasal polyp score ≥5 or did not have ongoing symptoms of nasal congestion and loss of smell, 114 did not meet pre-bronchodilator FEV_1 ≤85% predicted normal, and 99 did not meet eligibility as per omalizumab drug-dosing), and 360 participants were randomly assigned (181 assigned to the dupilumab group and 179 assigned to the omalizumab group). Of the 360 participants, 198 (55%) participants were male, 162 (45%) were female, and the mean age of the total population sample was 52 years (SD 13·1). Improvements were significantly greater with dupilumab than omalizumab for all primary and secondary efficacy endpoints at week 24. Least squares mean differences in change from baseline dupilumab over omalizumab were: nasal polyp score -1·60 (95% CI -1·96 to -1·25; p<0·0001) and UPSIT 8·0 (6·3 to 9·7; p<0·0001). 115 (64%) of 179 participants in the dupilumab group and 116 (67%) of 173 participants in the omalizumab group reported treatment-emergent adverse events, the most common of which were nasopharyngitis, accidental overdose, headache, upper respiratory tract infection, and cough. There were no deaths in the study.

Interpretation: Dupilumab was superior to omalizumab in patients with severe CRSwNP and coexisting asthma. These findings support the efficacy of dupilumab in patients with type 2 respiratory diseases versus an active biologic comparator, the known safety profiles of dupilumab and omalizumab, and could enable better treatment targeting for patients with CRSwNP and asthma in clinical practice.

Funding: Sanofi and Regeneron Pharmaceuticals.

Conflict of interest statement

Declaration of interests EDC is an advisory board member for and has received speaker fees or honoraria from AstraZeneca, Firma, GSK, Novartis, Regeneron, and Sanofi. GWC has received research or clinical trials grants from AstraZeneca, GSK, Menarini, and Sanofi Genzyme, and fees for lectures or advisory board participation from AstraZeneca, CellTrion, Chiesi, Faes Farma, Firma, Genentech, GSK, Guidotti-Malesci, HAL Allergy, Innovacaremd, Menarini, Novartis, OM-Pharma, Red Maple, Sanofi-Aventis, Sanofi-Genzyme, Stallergenes-Greer, and Uriach Pharma. EH reports consulting fees from Allergy Therapeutics, Almirall, Apogee Therapeutics, AstraZeneca, Bosch, Celltrion Healthcare, Chiesi, Lofarma, Novartis, Regeneron, and Sanofi; research grants from AstraZeneca and Chiesi; speaker fees or honoraria from AstraZeneca, Chiesi, GSK, Lofarma, and Sanofi; and travel support from AstraZeneca and GSK. MS reports research grants from Eli Lilly, Insmed, and Sanofi. MV has received speaker fees from Sanofi and advisory board and speaker fees from GSK. JMu is an advisory board member for, and has received research grants and speaker fees from Almirall, AstraZeneca, GSK, Glenmark, Lilly, Menarini, MSD, Noucor and Uriach Group, Regeneron Pharmaceuticals, Sanofi, and Viatris and MEDA. PG is an advisory board member for and has received clinical trial funding from AstraZeneca, Eli Lilly, Genentech, Insmed, Novartis, Regeneron Pharmaceuticals, Roche, and Sanofi. JMi is an advisory board member for and has

received speaker fees or honoraria from AstraZeneca, GSK, Novartis, and Sanofi. ATP has received research support from AstraZeneca, Insmed, Regeneron Pharmaceuticals, and Sanofi, and is an advisory board member for AstraZeneca, Chiesi, Eli Lilly, GSK, Regeneron Pharmaceuticals, and Sanofi. MW reports research grants from ALK-Abelló, AstraZeneca, GSK, Novartis, Sanofi, and Takeda; is an advisory board member for ALK-Abelló, AstraZeneca, GSK, Novartis, and Sanofi; has received lecture fees from ALK-Abelló, Allergopharma, AstraZeneca, CSL Behring, Genzyme, GSK, HAL Allergie, Infectopharm, LETI Pharma, MSD, NeilMed, Novartis, Sanofi, Stallergenes Greer, and Takeda; and is a member of the executive committee of the German Society of Allergology and Clinical Immunology (DGAKI). SZ, MZ, MC, JTA, and AM are employees of Sanofi and may hold stock or stock options. SN, AR, and YD are employees of Regeneron Pharmaceuticals and may hold stock or stock options. PWH is an advisory board member for and has received lecture fees and research grants from Regeneron Pharmaceuticals and Sanofi, and has received consulting and speaker fees from GSK, Regeneron Pharmaceuticals, Sanofi, and Viatris. All other authors declare no competing interests.

Supplementary info

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Allergy

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Long-Term, Real-World Effectiveness of Allergen Immunotherapy in Children and Adolescents With Allergic Rhinitis and Asthma

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Affiliations Expand

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- **PMCID: PMC12666749**

- DOI: 10.1111/all.70085

Abstract

Background: Respiratory allergies often begin in childhood and can progress over time, leading to increased disease burden. Allergen immunotherapy (AIT) is the only causal treatment for allergic respiratory diseases with disease-modifying potential. While randomised trials support its efficacy in controlling allergic rhinitis (AR) and asthma symptoms, long-term real-world data in children remain limited.

Methods: This paediatric study (n = 11,036) was conducted within the pre-defined framework of the REACT study, based on protocol-specified objectives. Children (< 18 years) with physician-diagnosed AR, with or without pre-existing asthma, were included. AIT-treated patients were matched 1:1 to non-AIT controls. Effectiveness was assessed over 9 years by comparing AR and asthma medication prescriptions, using a public database covering all reimbursable AIT products. Relative differences were calculated across the full observation period.

Results: AIT-treated children (mean age 11.4 years; 62.1% male) exhibited greater reductions in AR medication use than controls (additional 9% reduction beyond 61% in controls). In children with asthma, AIT was associated with additional reductions in asthma medication use (-21% beyond -48% in controls), severe exacerbations (-21% beyond -36%), and new oral corticosteroid prescriptions (-33% beyond -41%). Age stratification revealed more pronounced AR medication reductions in younger children (0-11 years) than in adolescents (12-17 years).

Conclusion: This large-scale, real-world study supports the long-term effectiveness of AIT in children with AR, with or without asthma. The findings reflect improved disease control and suggest a disease-modifying effect of AIT. Early intervention, particularly in younger children, may help mitigate the progression of allergic disease.

Keywords: allergen immunotherapy; allergic rhinitis; asthma; children; prevention; real-world evidence.

Conflict of interest statement

C.W. is employed in the department of Global Research and Drug Discovery, ALK-Abelló. T.S. and A.K.S. are employees of ALK-Abelló. M.C. reports personal fees from ALK-Abelló during the conduct of the study; grants, personal fees, and non-financial support from Chiesi and GlaxoSmithKline, personal fees, and non-financial support from AstraZeneca, Boehringer Ingelheim, Novartis, and Zambon, and grants from the University of Ferrara (Italy), outside the submitted work. N.F. reports personal fees from Aimmune, Allergan, AstraZeneca, Grifols, Ipsen, MSD, Novartis, Sanofi Aventis, and Vertex, outside of the submitted work. J.R.L. is an employee of Novo Nordisk and a former employee of ALK-Abelló (at the time the work was conducted). C.P. reports grants from ALK-Abelló during the conduct of the study; grants and personal fees from Astra Zeneca, Chiesi, GSK, Novartis, Sanofi, and TEVA outside of the submitted work. B.F. reports personal fees from ALK-Abelló

during the conduct of the study; speaker honorarium from Novartis and Merck Sharp & Dohme outside of the submitted work.

- 38 references
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Comparative Study

Allergy

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Comparison of Allergic Rhinitis Treatments on Patient Satisfaction: A MASK-air and EAACI Methodological Committee Report

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Affiliations Expand

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- DOI: 10.1111/all.70055

Abstract

Introduction: Satisfaction with treatments may affect medication adherence and use patterns, including the use of co-medication. We aimed to compare different medications for allergic rhinitis (AR) on (i) patients' satisfaction and (ii) co-medication use frequency.

Methods: We assessed data from the mHealth app MASK-air. We evaluated days on which users with self-reported AR had used-alone or in co-medication-intranasal corticosteroids (INCS), intranasal antihistamines (INAH), fixed combinations of INAH+INCS, or oral antihistamines (OAH). We built multivariable regression models to compare these different AR medication classes (as well as individual medications) on their (i) treatment satisfaction levels (measured using a specific daily visual analogue scale ['VAS satisfaction']) and (ii) odds of being used in co-medication.

Results: We assessed 28,177 days reported by 1691 MASK-air users. For all medication classes, co-medication usage was associated with lower treatment satisfaction. When used in monotherapy, OAH were associated with lower VAS satisfaction than INCS (-1.7 points; 95% CI = -2.7; -0.7) or INAH+INCS (-2.1 points; 95% CI = -3.5; -0.7). INCS displayed higher odds of being used in co-medication than OAH (OR = 1.3; 95% CI = 1.0; 1.6) or INAH+INCS (OR = 1.3; 95% CI = 0.8; 1.8). When comparing individual intranasal medications, fluticasone furoate and fluticasone propionate tended to be more frequently used in co-medication. Among individual OAH, desloratadine and rupatadine were associated with higher satisfaction, while fexofenadine was more frequently used in co-medication.

Conclusion: Using patient-reported data, we evaluated different medication classes and treatments in terms of satisfaction and co-medication frequency. These results provide key insights into the acceptability of AR treatments and will contribute to future treatment guidelines.

Conflict of interest statement

J. Bousquet reports personal fees from Cipla, Menarini, Mylan, Novartis, Purina, Sanofi-Aventis, Teva, Noucor, other from KYomed-Innov, other from MASK-air SAS, outside the submitted work.

A. Cruz reports personal fees from AstraZeneca, personal fees from Boehringer Ingelheim, personal fees from Chiesi, personal fees from Farmoquímica, personal fees from Eurofarma, personal fees from Aché, personal fees from GSK, personal fees from Sanofi, outside the submitted work.

G. Paoletti reports other from LoFarma, GSK, Astrazeneca, outside the submitted work.

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O. Pfaar reports grants and personal fees from ALK-Abelló, grants and personal fees from Allergopharma, grants and personal fees from Stallergenes Greer, grants and personal fees from HAL Allergy Holding B.V./HAL Allergie GmbH, grants and personal fees from Bencard Allergie GmbH/Allergy Therapeutics, grants and personal fees from Laboratorios LETI/LETI Pharma, grants and personal fees from GlaxoSmithKline, personal fees from ROXALL Medizin, personal fees from Novartis, grants and personal fees from Sanofi-Aventis and Sanofi-Genzyme, personal fees from Med Update Europe GmbH, personal fees from streamedup! GmbH, grants and personal fees from Pohl-Boskamp, grants from Inmunotek S.L., personal fees from John Wiley and Sons, AS, personal fees from Paul-Martini-Stiftung, personal fees from RG Aerztefortbildung, personal fees from Institut für Disease Management, personal fees from Springer Publisher, grants and personal fees from AstraZeneca, personal fees from IQVIA Commercial, personal fees from Ingress Health, personal fees from Wort&Bild Verlag, personal fees from Verlag ME, personal fees from Procter&Gamble, personal fees from ALTAMIRA, personal fees from Meinhardt Congress GmbH, personal fees from Deutsche Forschungsgemeinschaft, personal fees from Thieme Publisher, grants from Deutsche AllergieLiga e.V., personal fees from AeDA, personal fees from Alfried-Krupp Krankenhaus, personal fees from Red Maple Trials Inc., personal fees from Königlich Dänisches Generalkonsulat, personal fees from Medizinische Hochschule Hannover, personal fees from ECM Expro&Conference Management, personal fees from Technical University Dresden, grants and personal fees from Lilly, personal fees from Japanese Society of Allergy, personal fees from Forum für Medizinische Fortbildung, personal fees from Dustri-Verlag, personal fees from Pneumolive, grants and personal fees from ASIT Biotech, grants and personal fees from LOFARMA, personal fees from Paul-Ehrlich-Institut, personal fees from Almirall, personal fees from Blueprint, personal fees from Cliantha, outside the submitted work; and Vice President and member of EAACI Excom, member of ext. board of directors DGAKI; coordinator, main- or co-author of different position papers and guidelines in rhinology, allergology and allergen immunotherapy; associate editor (AE) of Allergy and Editor-in-Chief (EIC) of Clinical Translational Allergy.

J. Sastre reports grants and personal fees from SANOFI, personal fees from GSK, personal fees from NOVARTIS, personal fees from ASTRA ZENECA, personal fees from MUNDIPHARMA, personal fees from FAES FARMA, outside the submitted work.

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N. Pham-Thi reports other from ALK, Stallergenes, outside the submitted work.

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M. Giovannini reports fees from Sanofi, Thermo Fisher Scientific, outside the submitted work.

The other authors have nothing to declare, outside the submitted work.

- **26 references**

Supplementary info

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Review

Curr Opin Allergy Clin Immunol

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Patients' perspective on allergen immunotherapy for respiratory allergy

Francesco Catamerò [1 2], Simona Barbaglia [3], Enrico Heffler [4 5], Mattia Giovannini [1 2], Giovanni Paoletti [4 5]

Affiliations Expand

- PMID: 40986466
- PMCID: PMC12582610
- DOI: 10.1097/ACI.0000000000001110

Abstract

Purpose of review: This review explores patients' perspective on allergen immunotherapy (AIT) for respiratory allergy, addressing awareness, motivations, adherence challenges, perceived benefits and risks, and the importance of education and shared decision-making. It also summarizes the data on patient-reported outcomes, considers the role of patient associations, and outlines future directions for enhancing adherence and advancing patient-centered care.

Recent findings: AIT is the only treatment capable of modifying the natural course of allergic diseases, providing lasting benefits in terms of symptom reduction, quality of life (QoL), and asthma control. Despite its efficacy and safety, AIT remains underused due to several factors, including cost, misinformation, patient skepticism, and adherence challenges. Limited reimbursements further restrict access.

Summary: The patient's perspective is crucial in AIT, as it directly impacts adherence and treatment outcomes. Allergic rhinitis and asthma significantly reduce the QoL, especially when poorly controlled, but their burdens are often underestimated. Adherence to AIT depends on multiple factors including age, physician engagement, perceived efficacy, convenience, education, and socioeconomic status. Effective communication, shared decision-making, and tailored education enhance long-term compliance, while financial barriers and lack of reimbursement remain significant obstacles. Patient-reported outcome measures (PROMs) are essential tools for assessing symptom burden, disease control, and

QoL, supporting clinical decisions and research. Validated PROMs, as well as combined symptom-medication scores, help personalize care and are increasingly integrated into digital platforms for real-time monitoring. Respiratory patient associations play a vital role in promoting education, empowerment, and advocacy, enhancing adherence and access to care.

Keywords: adherence; allergen Immunotherapy; patient's association; patient's perspective.

Conflict of interest statement

M.G. reports personal fees from Sanofi, Thermo Fisher Scientific. E.H. reports fees for speaker activities and/or advisory boards participation from Sanofi, Regeneron, GSK, Novartis, AstraZeneca, Chiesi, Almirall, Bosch Healthcare, Lofarma, Orion Pharma, Celltrion-Healthcare, Apogee Therapeutics, Blueprint Medicines, Gentili, Firma outside the submitted work. GP reports fees for speaker activities and/or advisory boards participation from Lofarma, GSK, and AstraZeneca, outside the submitted work. The other authors declare that they have no conflict of interests to disclose in relation to this paper.

- 148 references
- 3 figures

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Multicenter Study

Rhinology

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. 2025 Dec 1;63(6):655-666.

doi: 10.4193/Rhin25.157.

Indication for biologics in a real-world cohort of dupilumab treated chronic rhinosinusitis with nasal polyps patients according to international recommendations: evidence from the European CRS Outcome Registry (CHRINOSOR)

G Mortuaire [1], S F Seys [2], J de Kinderen [2], G Bettio [2], C Cavaliere [3], S Reitsma [4], S Schneider [5], A Andrianakis [6], P-V Tomazic [6], M Wagenmann [7], A Ciofalo [3], Z Diamant [8], J Eckl-Dorna [5], W J Fokkens [4], M de Vincentiis [3], C Holzmeister [6], G Marin [2], S Masieri [9], J J Otten [4], K Scheckenbach [7], A Tu [5], C Bachert [10], Chrinosor Consortium I Alobid P W Hellings C Hopkins V Hox A Kjeldsen V J Lund A Laulajainen-Hongisto L Van Gerven [11]

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- PMID: 40927953

- DOI: 10.4193/Rhin25.157

Abstract

Background: Criteria for biologic treatment of uncontrolled severe chronic rhinosinusitis with nasal polyps (CRSwNP) differ across international recommendations and prescription of biologics depends on national reimbursement criteria. CHRINOSOR offers an opportunity to analyse biologic indications in the real-world setting according to international recommendations.

Methods: CRSwNP patients who received dupilumab treatment in the ENT clinic of 6 tertiary centres (5 countries) were included. Baseline demographic and lifestyle factors, NP score, SinoNasal Outcome Test-22 score, visual analogue scale for sinus symptoms, and Asthma Control Test score were retrieved from the medical records. Indication criteria for biologic treatment according to EUFOREA 2021, and EPOS/EUFOREA 2023 recommendations was applied. Dupilumab effectiveness was assessed at baseline, 24 and 52 weeks in relation to these criteria.

Results: 61.8% and 79.8% of patients met respectively the EUFOREA 2021 or the EPOS/EUFOREA 2023 indication criteria for biologic treatment. Dupilumab was effective in patients who met or did not meet international criteria for biologic indication. However, patients who met the indication criteria showed overall a more pronounced effect on most of the outcome parameters than patients who did not meet the criteria.

Conclusions: Real-world management of CRSwNP with biologics does not strictly follow the indication criteria established by international recommendations but depends on management criteria established by local authorities. These vary significantly and are either more or less stringent from one country to another. Dupilumab effectiveness in CRSwNP, whether these criteria are met or not, suggests that a broader CRSwNP population may benefit from dupilumab.

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. 2025 Dec;18(1):2547434.

doi: 10.1080/16549716.2025.2547434. Epub 2025 Sep 10.

Bibliometric analysis of the association between air pollution and allergic rhinitis

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- PMID: 40926650
- PMCID: PMC12424152
- DOI: 10.1080/16549716.2025.2547434

Abstract

Background: Allergic rhinitis (AR) is an increasingly prominent global public health issue, where air pollution significantly contributes to its rising incidence. Although numerous studies have explored the link between air pollution and AR pathogenesis, comprehensive summaries are still limited.

Objective: This study performs a bibliometric analysis to identify research hotspots and emerging trends, offering insights into AR prevention and management.

Methods: Literature related to on air pollution and AR was retrieved from the Web of Science Core Collection database. Visualization tools, including VOSviewer, CiteSpace, and Bibliometrix R, were utilized to analyze contributions by countries, institutions, authors, journals, and keywords, with the aim of predicting future research trends.

Results: A total of 4,020 authors, 1,368 institutions, and 75 countries contributed to 753 publications. The United States leads in research contributions, while China has shown rapid growth since 2012. Prominent authors include Deng Qihong and Lu Chan have made significant contributions. Keyword analysis revealed five major clusters: Asthma and Allergic Diseases, Environmental Factors, Climate Change

and Exposures, Epidemiology and Risk Factors, and Population-Specific Research. Key topics covered include atopy, childhood asthma, climate change, pollution exposure, and air pollutants.

Conclusion: This first bibliometric analysis of air pollution and AR highlights a strong link between air pollution and AR pathogenesis. Enhanced environmental controls and air quality monitoring are essential for AR prevention. However, the complex composition of air pollutants presents challenges in elucidating specific mechanisms.

Keywords: Bibliometric; Web of Science; air pollution; allergic rhinitis; visualization.

Plain language summary

Main findings: Air pollutant exposure has been identified as a significant risk factor contributing to the progressive rise in allergic rhinitis prevalence. As the first bibliometric analysis of the air pollution-Allergic rhinitis relationship, it shows contributions and theme evolution, enriching the research framework. Added knowledge: Our study identified 75 countries, 4,020 authors, and 1,368 institutions' global participation, with the US and China leading. Research grew notably from 2005-2011 and after 2010, and five keyword clusters clarified research focuses.Global health impact for policy and action: It also proves environmental governance and air quality monitoring are crucial for Allergic rhinitis prevention, with European strategies as models for global policy-making to relieve Allergic rhinitis epidemic pressure.

Conflict of interest statement

The authors declare that this article was conducted in the absence of any financial relationships that could be construed as a potential conflict of interest. All the data in this study are from the public database of Web of Science.

- 38 references
- 8 figures

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Review

. 2025 Dec 1;25(6):493-499.

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Can immunotherapy prevent the progression of airway disease?

Josefine Gradman [1 2], Susanne Halken [1 2]

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- PMID: 40920231

- DOI: 10.1097/ACI.0000000000001111

Abstract

Purpose of review: The potential of allergen immunotherapy (AIT) to prevent allergic airway disease progression are demonstrated. Though not all patients benefit equally, there is limited research on which patients may benefit most.In this article, we focus on factors that may influence the risk of progression and their influence on the preventive effects of AIT, and whether some patients may benefit more than others may.

Recent findings: Various factors including age, genetic predisposition, number of sensitizations and co-morbidities, can influence the risk of progression, especially from allergic rhinitis/rhinoconjunctivitis (ARC) to asthma. Early age and severity are associated with a higher risk of progression. Younger children with ARC may benefit most from AIT with respect to prevent development of asthma. The number of sensitizations may not influence the effect. Since early allergic multisensitization and multimorbidity is associated with a low chance of remission and high risk of progression of allergic airway disease this group would be an obvious target for preventive AIT, which remains to be investigated.

Summary: AIT might be considered at an earlier age than hitherto. Most AIT studies have not stratified the results based on sensitizations and comorbidities. We recommend existing randomized controlled trial data to be reevaluated for this purpose.

Keywords: airway disease; allergen immunotherapy; progression.

- 53 references

Supplementary info

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Meta-Analysis

Rhinology

. 2025 Dec 1;63(6):642-654.

doi: 10.4193/Rhin24.573.

Olfactory outcomes following biological therapy in chronic rhinosinusitis: a systematic review and meta-analysis

D Patel [1], J S Morris [2], V Acharya [3], P Andrews [3]

Affiliations Expand

- PMID: 40783912

- DOI: 10.4193/Rhin24.573

Abstract

Background: Anosmia is a common, debilitating, and often treatment-resistant symptom of CRS. Biological therapies are a novel and promising treatment for severe and uncontrolled CRS, however, the impact of biological therapy specifically on olfatory dysfunction has not yet been evaluated through systematic review.

Methodology: Systematic searches of Ovid MEDLINE, EMBASE and Cochrane Library were performed on 25/05/2024, assessing olfactory outcomes following treatment with biologics. Random-effects meta-analyses were conducted to generate restricted maximum-likelihood estimates for the absolute improvement in each outcome of interest.

Results: Systematic searches yielded 801 papers, of which 37 studies comprising of 3284 patients treated with biologics and 1138 controls. In the RCT-only analysis, biologics conferred significat improvements versus control in UPSIT and VAS olfaction (measured as a 0-10 Likert scale). Across all papers, Dupilumab showed significat improvements versus Omalizumab in UPSIT and VAS.

Conclusions: Biological therapies are effective in improving olfactory dysfunction secondary to treatment-resistant CRS, with VAS olfaction gains being demonstrated up to 12 months after treatment. Dupilumab shows initial promise over omalizumab; however, cost-effectiveness of biological therapies may limit widespread clinical usage currently.

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Allergy

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The Minimal Clinically Important Difference in Allergen Immunotherapy: An Evidence-Based Approach

Oliver Pfaar [1], Ralph Mösges [2 3], Michael S Blaiss [4], Sven Becker [5], Lawrence DuBuske [6], Jonathan A Bernstein [7 8], Uwe E Berger [9], Markus Berger [10 11 12], Stephanie Dramburg [13], Mohamed H Shamji [14 15], Anke Graessel [16 17], Sviatlana Starchenka [17], Katrin Birkholz [16], Oliver Armfield [17], Fiona Sellwood [17], Matthias F Kramer [16 17], Murray A Skinner [17], Pieter-Jan de Kam [17]

Affiliations Expand

- **PMID: 40678893**

- **PMCID: PMC12666754**

- **DOI: 10.1111/all.16654**

Abstract

Background: Regulatory authorities recommend a combination of symptom and medication scores during the grass pollen season as a primary endpoint for Phase

III allergen immunotherapy (AIT) trials targeting allergic rhinoconjunctivitis. However, many composite primary endpoint scales exist; none are validated, nor do they have a well-justified minimal clinically important difference (MCID).

Methods: Direct patient feedback from 1071 grass-allergic patients was obtained to determine the minimally relevant improvement in allergic symptoms and translated into an MCID for the EAACI recommended $CSMS_{0-6}$. Additionally, a clinically relevant threshold for the validated Rhinitis Quality of Life Questionnaire (RQLQ(S)) was determined from studies of registered SLIT products and subsequently used as an anchor to derive the MCID for $CSMS_{0-6}$ using the data of a Phase III clinical trial with PQ Grass 27,600 SU (RESONATE).

Results: 69% of grass-allergic patients were satisfied with a 1-point-improvement (e.g., from "severe" to "moderate") in their most severe symptom. This translated into an MCID range for $CSMS_{0-6}$ of -0.23 to -0.21 points or -17% to -16%. Furthermore, a -0.34 point difference in RQLQ(S) compared to placebo was justified as clinically meaningful based on Phase III data from 2 registered SLIT grass tablets. Using this RQLQ(S) threshold as an anchor, an MCID of $CSMS_{0-6}$ of -0.21 points (-16%) was derived using RESONATE.

Conclusions: Both patient feedback and RESONATE results support an average MCID of -0.22 points on the $CSMS_{0-6}$ scale and -16% on a composite primary endpoint scale, providing minimal thresholds to be achieved after AIT compared to placebo to conclude a positive Phase III trial outcome.

Keywords: EAACI CSMS0–6; allergic rhinoconjunctivitis; grass pollen allergy; pivotal phase III clinical trial; subcutaneous immunotherapy.

Conflict of interest statement

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and guidelines in rhinology, allergology and allergen-immunotherapy; and he is Editor-in-Chief of Clinical Translational Allergy and Associate Editor of Allergy. R.M. reports grants and personal fees from Allergy Therapeutics Ltd., during the conduct of the study; personal fees from ALK, grants from ASIT Biotech, personal fees from Allergopharma, grants and personal fees from Bencard, grants from Leti, grants, personal fees and nonfinancial support from Lofarma, non-financial support from Roxall, grants and personal fees from Stallergenes, grants from Optima, personal fees from Friulchem, personal fees from Hexal, personal fees from Servier, personal fees from Klosterfrau, non-financial support from Atmos, personal fees from Bayer, non-financial support from Bionorica, personal fees from FAES, personal fees from GSK, personal fees from MSD, personal fees from Johnson & Johnson, personal fees from Meda, personal fees and non-financial support from Novartis, non-financial support from Otonomy, personal fees from Stada, personal fees from UCB, non-financial support from Ferrero, grants from Hulka, personal fees from Nuvo, grants and personal fees from Ursapharm, personal fees from Menarini, personal fees from Mundipharma, personal fees from Pohl-Boskamp, grants from Inmunotek, grants from Cassella-med GmbH & Co. KG, personal fees from Laboratoire de la Mer, personal fees from Sidroga, grants and personal fees from HAL BV, personal fees from Lek, personal fees from PRO-AdWise, personal fees from Angelini Pharma, grants and non-financial support from JGL, grants and personal fees from Bitop, grants from Sanofi, grants and personal fees from Probelte Pharma, grants from Diater, personal fees from Worg Pharmaceuticals, outside the submitted work. M. S. Blaiss reports personal fees from Sanofi, personal fees from Regeneron, personal fees from ALK, personal fees from Merck, personal fees from AstraZeneca, personal fees from GSK, personal fees from Prollergy, personal fees from Lanier Biotherapeutics, and nonfinancial support from Bryn Pharma, outside the submitted work. S.B. reports about grants and/or personal fees as an advisor and for lectures from Bencard Allergie, Brain, Karl Storz, Altamira, Allergy Therapeutics, HAL Allergy, Allergopharma, ALK Abelló, Sanofi, Novartis, GSK, Astra Zeneca, MSD, Viatris, Ambu, Stryker, and the Federal Ministry of Education and Research. L.D. acts as a consultant for Allergy Therapeutics and a consultant and/or Speakers Bureau for GSK, Sanofi, Regeneron, Astra Zeneca, ALK-Abello, Amgen, Bryn Pharma, and Areteia. J.A.B. is acting as a consultant and PI for Allergy Therapeutics, Stallergens, ALK, Eli Lilly, Novartis, Genentech, Sanofi Regeneron, A.Z., G.S.K., and Amgen. U.E.B. and M.B. report grants and/or personal fees and/or travel support from AZ Pollen Research GmbH, outside the submitted work. SD received consultancy fees from Allergy Therapeutics and OMRON Healthcare Technologies; received honoraria for Allergy Therapeutics, Allergopharma, OMRON Healthcare Technologies, DBV Technologies, Chiesi, Stallergenes and Siemens Healthineers; is part of a DSMB of a study funded by Allergy Therapeutics; is Secretary of the EAACI Interest Group Allergy Diagnosis and Advisory Board Member of AeDA; received equipment by Thermo Fisher Scientific; outside the submitted work. M.H.S. reports research grants from Immune Tolerance Network, Medical Research Council, Allergy Therapeutics, LETI Laboratorios, Rovolo Biotherapeutics and lecture fees from Allergy Therapeutics and Leti Laboratorios, all outside the submitted work. AG, SS, K.B., O.A., F.S., M.F.K., M.A.S., and P-J.d.K. are employees of Allergy Therapeutics (UK) Plc./Bencard Allergie, and P-J.dK., M.F.K., and M.S. are named inventors on patents related to PQ Grass.

- **26 references**
- **4 figures**

Supplementary info

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Rhinology

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. 2025 Dec 1;63(6):765-767.

doi: 10.4193/Rhin25.151.

De-escalation of dupilumab for chronic rhinosinusitis with nasal polyps: analysis of outcomes after modified dosing regimen

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Affiliations Expand

- PMID: 40657826

- DOI: 10.4193/Rhin25.151

Abstract

Chronic rhinosinusitis with nasal polyps (CRSwNP) is a persistent inflammatory condition with severe impacts on quality of life and substantial economic costs. Dupilumab targeting the underlying T2 inflammation in CRSwNP showed promising results; however, it is unknown if intensive regimens must be maintained in responders to prevent relapse. In 2019, FDA and the European Commission approved Dupilumab 300 mg administered subcutaneously every two weeks for CRSwNP. We hypothesized that disease control might be maintained by reducing the frequency of administration in patients who initially well answered to the standard treatment. To date the benefit of de-escalation was only analyzed in short time. We wanted to understand if a de-escalation regimen could be introduced without compromising disease control in long follow-up; to this aim we de-escalated Dupilumab at 300 mg every four weeks following a year of conventional bi-weekly administration.

Supplementary info

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Allergy

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. 2025 Dec;80(12):3359-3368.

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Real-World Effectiveness for Sublingual Allergen Immunotherapy Among School-Aged Children and Adolescents

Yusuke Okubo [1], Yu Kuwabara [2], Sakura Sato [3], Masafumi Sakashita [4], Hideaki Morita [5 6]

Affiliations Expand

- **PMID: 40631972**

- **DOI: 10.1111/all.16646**

Abstract

Background: Sublingual allergen immunotherapy (SLIT) is a safe and effective treatment of allergic rhinitis, and its use has been increasing in recent years. Although several randomized and observational studies showed the effectiveness of SLIT among adults and children aged > 12 years, its extent remains unclear in nationwide routine healthcare settings for school-aged children.

Methods: We conducted a propensity score (PS)-matched cohort study using a nationwide administrative database. Data from 13,449 individuals who received SLIT for house dust mites between 2015 and 2021 were extracted and matched with data from 1,732,961 individuals who did not. The PS-matching procedure created 10,985 pairs and followed them for three years, totaling 812,795 person-months. Then, we compared healthcare costs, resource use, and prescriptions between the SLIT and control groups over the three years.

Results: The introduction of SLIT was associated with an 8.9% reduction in antibiotic use (95% CI, 12.0% to 34.7%) and a 65.2% reduction in hospitalizations (95% CI, 52.8% to 74.4%), as well as a 44.1% increase in health resource utilization (95% CI, 40.7% to 47.6%), with minimal impact on overall healthcare costs (+8.9% [95% CI, -12.0% to +34.7%]) over the three-year follow-up period. Similar findings were observed in event-study design and intention-to-treat analyses, as well as in age-stratified analyses (ages 5-10 years and 11-19 years).

Conclusions: The introduction of SLIT for house dust mites was associated with a reduction in antibiotic prescriptions and hospitalizations among children aged 5-19 years with minimal impact on healthcare costs, demonstrating sustained benefits over three years.

Keywords: JMDC claims database; allergic rhinitis; causal inference; house dust mite; sublingual immunotherapy.

- **60 references**

Supplementary info

MeSH terms, Substances, Grants and fundingExpand

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WILEY Full Text Article

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Cite

21

Rhinology

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. 2025 Dec 1;63(6):667-675.

doi: 10.4193/Rhin25.121.

One year mepolizumab outcomes in severe, uncontrolled CRSwNP: a real-life study

E De Corso [1], M Corbi [2], G De Maio [1], R Mastrapasqua [3], C Montuori [4], L M D'Auria [4], A Rizzuti [4], C Spanu [4], S Pisciottano [4], G Dâ Agostino [4], M C Pacilli [4], A Ortolan [5], A Rizzi [6], J Galli [7]

Affiliations Expand

- **PMID: 40631514**

- DOI: 10.4193/Rhin25.121

Abstract

Background: This study aimed to evaluate the effectiveness of mepolizumab in the treatment of severe, uncontrolled chronic rhinosinusitis with nasal polyps (CRSwNP) as add-on therapy to intranasal corticosteroids (INCS) in a real-life setting over the first year of treatment.

Methodology: We included 50 patients (28 males; mean age: 56.4 years, range 35-77) who received mepolizumab 100 mg every 4 weeks. The primary objective of this study was to evaluate the reduction in nasal polyp size and improvement in patients' quality of life, measured through symptom-based questionnaires. The secondary objective was to evaluate improvements in smell dysfunction, severity of comorbidities, blood eosinophilia, and the need for surgery or systemic steroids.

Results: After 12 months of treatment, the median nasal polyp score (NPS) decreased from 5 to 2 and the mean sino-nasal outcome test-22 (SNOT-22) score decreased from 58.4Â±21 to 26.1Â±17.5. Olfaction only slightly improved with a median VAS score decreasing from 10 at baseline to 6 at 12 months. Seven patients remained uncontrolled and required systemic steroids and in 5 cases also endoscopic sinus surgery.

Conclusions: The results support the use of mepolizumab as an effective option in the current standard of care for patients affected by severe, uncontrolled CRSwNP especially in decreasing nasal polypsâ€™ size and improving quality of life, although a minor impact was observed on recovery of smell.

Supplementary info

MeSH terms, SubstancesExpand

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22

Review

Paediatr Respir Rev

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. 2025 Dec:56:3-9.

doi: 10.1016/j.prrv.2025.04.004. Epub 2025 Apr 22.

Management of acute rhinosinusitis in children

Yanisa Wannasuphoprasit [1], Mahmood F Bhutta [2]

Affiliations Expand

- PMID: 40368679

- DOI: 10.1016/j.prrv.2025.04.004

Free article

Abstract

Acute rhinosinusitis (ARS) is a common condition in children, usually preceded by a viral upper respiratory tract infection (URTI). Diagnosing ARS can be challenging, relying primarily on clinical history and examination. Differentiating between viral URTI, post-viral ARS and acute bacterial rhinosinusitis (ABRS) is crucial for guiding appropriate antibiotic treatment. Antibiotics have been showed to be effective in improving symptom scores and cure rates in ABRS. Adjunct therapies, including corticosteroids, nasal saline irrigation and analgesics, may provide symptomatic relief. While viral ARS is self-limiting, bacterial ARS can lead to severe complications, including orbital and intracranial involvement, necessitating timely diagnosis and treatment. This review highlights current evidence on the diagnosis and management of ARS in children, emphasising best practices to optimise patient outcomes and prevent complications.

Keywords: ARS; Acute rhinosinusitis; Antibiotics; Children; Intracranial; Orbital; Paediatric.

Conflict of interest statement

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

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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chronic cough

Editorial

Lung

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. 2025 Dec 3;203(1):104.

doi: 10.1007/s00408-025-00859-7.

Refractory Chronic Cough is all in Your Head?

Stuart B Mazzone [1]

Affiliations Expand

- **PMID: 41335146**

- **DOI: 10.1007/s00408-025-00859-7**

No abstract available

Conflict of interest statement

Declarations. Competing Interests: Prof Mazzone declares honoraria from Merck, NeRRe Therapeutics, Reckitt Benckiser, Trevi Therapeutics, Chiesi, iNova, GSK and Bellus Health and grant support from Merck, Reckitt Benckiser and Bellus Health, outside of the submitted work.

- **42 references**

Supplementary info

Publication typesExpand

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Cite

2

Ann Allergy Asthma Immunol

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. 2025 Dec;135(6):709.

doi: 10.1016/j.anai.2025.08.009.

There is more to know about chronic cough

Miles Weinberger [1], Ran D Anbar [2], Dennis Buettner [3]

Affiliations Expand

- PMID: 41298003

- DOI: 10.1016/j.anai.2025.08.009

No abstract available

Supplementary info

Publication typesExpand

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Cite

3

Lancet Respir Med

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. 2025 Dec;13(12):1050-1052.

doi: 10.1016/S2213-2600(25)00361-3. Epub 2025 Oct 27.

Remission in chronic cough: an achievable target?

Ewan C Mackay [1], Peter S P Cho [1], Surinder S Birring [1], James H Hull [2]

Affiliations Expand

- PMID: 41167230

- DOI: 10.1016/S2213-2600(25)00361-3

No abstract available

Conflict of interest statement

PSPC receives research grants from Merck and King's Health Partners; and consultation fees from GSK and Strados. SSB received research grants to their institution from Merck; fees from Leicester Cough Monitor and Leicester Cough Questionnaire; consultation fees from Merck, GSK, Trevi, Nerre, Nocion, Axalbion, Genentech, CMOS, and Clairways; lecture fees from AstraZeneca; and has stock options in Siva. All other authors declare no competing interests.

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Randomized Controlled Trial

Lancet Respir Med

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. 2025 Dec;13(12):1067-1077.

doi: 10.1016/S2213-2600(25)00287-5. Epub 2025 Sep 28.

Dupilumab versus omalizumab in patients with chronic rhinosinusitis with nasal polyps and coexisting asthma (EVEREST): a multicentre, randomised, double-blind, head-to-head phase 4 trial

Eugenio De Corso [1], G Walter Canonica [2], Enrico Heffler [2], Michal Springer [3], Tomasz Grzegorzek [4], Miguel Viana [5], Zsuzsanna Horváth [6], Joaquim Mullol [7], Philippe Gevaert [8], Justin Michel [9], Anju T Peters [10], Martin Wagenmann [11], Sherif Zaghloul [12], Mei Zhang [12], Mark Corbett [12], Scott Nash [13], James T Angello [12], Amr Radwan [14], Yamo Deniz [13], Antonio Martin [15], Peter W Hellings [16]

Affiliations Expand

- **PMID: 41033334**

- **DOI: 10.1016/S2213-2600(25)00287-5**

Abstract

Background: Chronic rhinosinusitis with nasal polyps (CRSwNP) is predominantly driven by type 2 inflammation. The biologics dupilumab and omalizumab, which target drivers and mediators of type 2 inflammation (interleukin [IL]-4/IL-13 signaling and immunoglobulin E [IgE], respectively), are efficacious in treating CRSwNP but

direct comparisons are few. In EVEREST (EValuating trEatment RESponses of dupilumab versus omalizumab), the first head-to-head trial in respiratory biologics, we aimed to compare the efficacy and safety of dupilumab and omalizumab in patients with severe CRSwNP who had mild, moderate, or severe asthma.

Methods: EVEREST was an international, randomised, double-blind, phase 4 trial, conducted at 100 hospitals or clinical centres in 17 countries. Sites were selected with otolaryngology, pneumologist, allergist, and immunologist practices; needed to have previously conducted double-blind studies; and were required have nasal endoscopy and electrocardiogram machines. Eligible patients aged 18 years or older with severe uncontrolled CRSwNP (with a nasal polyp score of 5 or more [and ≥2 for each nostril]), symptoms of nasal congestion and loss of smell for at least 8 weeks before screening, and physician-diagnosed asthma. Patients were randomly assigned (1:1) to subcutaneous dupilumab 300 mg every 2 weeks or omalizumab weight-tiered and IgE-tiered dosing every 2 weeks or 4 weeks for 24 weeks, with background mometasone furoate nasal spray. Patients and investigators were masked to the study drugs. Primary endpoints were change from baseline in endoscopic nasal polyp score and University of Pennsylvania Smell Identification Test (UPSIT) at 24 weeks. Efficacy was assessed in the intention-to-treat population and safety was assessed in patients who received at least one dose of study medication. The trial was registered at ClinicalTrials.gov, NCT04998604.

Findings: Between Sept 27, 2021, and Dec 27, 2024, 819 individuals were screened for study inclusion, 459 were excluded (most common screen failures were: 167 did not meet nasal polyp score ≥5 or did not have ongoing symptoms of nasal congestion and loss of smell, 114 did not meet pre-bronchodilator FEV_1 ≤85% predicted normal, and 99 did not meet eligibility as per omalizumab drug-dosing), and 360 participants were randomly assigned (181 assigned to the dupilumab group and 179 assigned to the omalizumab group). Of the 360 participants, 198 (55%) participants were male, 162 (45%) were female, and the mean age of the total population sample was 52 years (SD 13·1). Improvements were significantly greater with dupilumab than omalizumab for all primary and secondary efficacy endpoints at week 24. Least squares mean differences in change from baseline dupilumab over omalizumab were: nasal polyp score -1·60 (95% CI -1·96 to -1·25; p<0·0001) and UPSIT 8·0 (6·3 to 9·7; p<0·0001). 115 (64%) of 179 participants in the dupilumab group and 116 (67%) of 173 participants in the omalizumab group reported treatment-emergent adverse events, the most common of which were nasopharyngitis, accidental overdose, headache, upper respiratory tract infection, and cough. There were no deaths in the study.

Interpretation: Dupilumab was superior to omalizumab in patients with severe CRSwNP and coexisting asthma. These findings support the efficacy of dupilumab in patients with type 2 respiratory diseases versus an active biologic comparator, the known safety profiles of dupilumab and omalizumab, and could enable better treatment targeting for patients with CRSwNP and asthma in clinical practice.

Funding: Sanofi and Regeneron Pharmaceuticals.

Conflict of interest statement

Declaration of interests EDC is an advisory board member for and has received speaker fees or honoraria from AstraZeneca, Firma, GSK, Novartis, Regeneron, and Sanofi. GWC has received research or clinical trials grants from AstraZeneca, GSK, Menarini, and Sanofi Genzyme, and fees for lectures or advisory board participation from AstraZeneca, CellTrion, Chiesi, Faes Farma, Firma, Genentech, GSK, Guidotti-Malesci, HAL Allergy, Innovacaremd, Menarini, Novartis, OM-Pharma, Red Maple, Sanofi-Aventis, Sanofi-Genzyme, Stallergenes-Greer, and Uriach Pharma. EH reports consulting fees from Allergy Therapeutics, Almirall, Apogee Therapeutics, AstraZeneca, Bosch, Celltrion Healthcare, Chiesi, Lofarma, Novartis, Regeneron, and Sanofi; research grants from AstraZeneca and Chiesi; speaker fees or honoraria from AstraZeneca, Chiesi, GSK, Lofarma, and Sanofi; and travel support from AstraZeneca and GSK. MS reports research grants from Eli Lilly, Insmed, and Sanofi. MV has received speaker fees from Sanofi and advisory board and speaker fees from GSK. JMu is an advisory board member for, and has received research grants and speaker fees from Almirall, AstraZeneca, GSK, Glenmark, Lilly, Menarini, MSD, Noucor and Uriach Group, Regeneron Pharmaceuticals, Sanofi, and Viatris and MEDA. PG is an advisory board member for and has received clinical trial funding from AstraZeneca, Eli Lilly, Genentech, Insmed, Novartis, Regeneron Pharmaceuticals, Roche, and Sanofi. JMi is an advisory board member for and has received speaker fees or honoraria from AstraZeneca, GSK, Novartis, and Sanofi. ATP has received research support from AstraZeneca, Insmed, Regeneron Pharmaceuticals, and Sanofi, and is an advisory board member for AstraZeneca, Chiesi, Eli Lilly, GSK, Regeneron Pharmaceuticals, and Sanofi. MW reports research grants from ALK-Abelló, AstraZeneca, GSK, Novartis, Sanofi, and Takeda; is an advisory board member for ALK-Abelló, AstraZeneca, GSK, Novartis, and Sanofi; has received lecture fees from ALK-Abelló, Allergopharma, AstraZeneca, CSL Behring, Genzyme, GSK, HAL Allergie, Infectopharm, LETI Pharma, MSD, NeilMed, Novartis, Sanofi, Stallergenes Greer, and Takeda; and is a member of the executive committee of the German Society of Allergology and Clinical Immunology (DGAKI). SZ, MZ, MC, JTA, and AM are employees of Sanofi and may hold stock or stock options. SN, AR, and YD are employees of Regeneron Pharmaceuticals and may hold stock or stock options. PWH is an advisory board member for and has received lecture fees and research grants from Regeneron Pharmaceuticals and Sanofi, and has received consulting and speaker fees from GSK, Regeneron Pharmaceuticals, Sanofi, and Viatris. All other authors declare no competing interests.

Supplementary info

Publication types, MeSH terms, Substances, Associated dataExpand

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Cite

5

Pulm Ther

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. 2025 Dec;11(4):553-567.

doi: 10.1007/s41030-025-00318-x. Epub 2025 Sep 27.

Dyspnea in Chronic Obstructive Pulmonary Disease: Expert Assessment of Management in Clinical Practice

Nirupama Putcha [1], Diego J Maselli [2], Jessica Bon [3], Michael G Lester [4], M Bradley Drummond [5]

Affiliations Expand

- PMID: 41014472
- PMCID: PMC12623595
- DOI: 10.1007/s41030-025-00318-x

Abstract

Chronic obstructive pulmonary disease (COPD) is a multifaceted lung condition characterized by persistent airflow limitation that leads to chronic symptoms, including dyspnea, cough, and exacerbations. To date, a major focus for the assessment and management of COPD has been on mitigating exacerbations. However, dyspnea is the most common symptom of COPD and is responsible for substantial negative effects on patients' quality of life. Dyspnea is also a substantial contributor to the symptoms associated with acute exacerbations in COPD. Though a portion of the current recommendations for the assessment and management of COPD are dedicated to dyspnea treatment intervention strategies, there remains a need for improvement in communication between healthcare practitioners and their patients regarding the understanding of dyspnea and the implementation of key nonpharmacologic and pharmacologic treatment options. This clinical commentary outlines practical considerations and recommendations for the real-world assessment and management of dyspnea in COPD, including underlying causes, patient and healthcare provider dialogue, measurement of severity, and management strategies.

Keywords: Chronic obstructive pulmonary disease; Dyspnea; Expert assessment; Management; Patient-reported outcomes; Real-world practice.

Plain language summary

Chronic obstructive pulmonary disease, or COPD, is a long-term disease of the lungs that can cause several symptoms, including cough, flare-ups (times when symptoms suddenly worsen, also known as exacerbations), and breathlessness (also referred to as dyspnea). Medications and other therapies for COPD mainly focus on reducing how often exacerbations happen or how bad they are. However, dyspnea is a major problem for patients with COPD, often making it difficult to live

their everyday lives. Moreover, dyspnea is commonly seen in patients with COPD when they have an exacerbation. Although current recommendations for the management of COPD include strategies to help with dyspnea, patients may still need more information about their dyspnea and how to manage it. This could be due to several factors, including a disconnect in the dialogue patients have with their doctors regarding their experience of dyspnea. This article shares practical insights from respiratory doctors on how they help patients with COPD manage their dyspnea and provides an overview of the causes, measurement, and management of dyspnea.

Conflict of interest statement

Declarations. Conflict of Interest: Nirupama Putcha has served on advisory boards for Verona Pharma and AstraZeneca. Diego J. Maselli has served on consulting/advisory boards for GSK, AstraZeneca, Amgen, Sanofi/Regeneron, Insmed, and Verona Pharma; and has received speaker fees from GSK, AstraZeneca, Amgen, and Sanofi/Regeneron. Jessica Bon has received grant funding from the National Heart, Lung, and Blood Institute (NHLBI); has served on consulting/advisory boards for GSK, Sanofi/Regeneron, Verona Pharma, and Chiesi; and has received speaker fees from GSK and Sanofi/Regeneron. Michael G. Lester has served on consulting/advisory boards for Ryme Medical, Galvanize Therapeutics, and Verona Pharma. M. Bradley Drummond has served on consulting/advisory boards for GlaxoSmithKline, Boehringer Ingelheim, AstraZeneca, Verona, Genentech, Stratos Inc, Takeda, and Amgen and has received grant funding from National Institute of Health-NHLBI, Boehringer Ingelheim, Midmark, Teva and the American Lung Association. Ethical Approval: Given that this article is based on previously conducted studies and does not report any new research involving human participants or animals performed by any of the authors, there is no ethical compliance to declare.

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IJID Reg

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. 2025 Aug 15:17:100733.

doi: 10.1016/j.ijregi.2025.100733. eCollection 2025 Dec.

Prevalence of cough and associated symptoms among pilgrims in large mass gathering event 2024: a cross-sectional study

Anas Khan [1], Fahad Alamri [2], Reem Hasan [3], Mariyyah Alburayh [3], Ghadah Alsaleh [3], Areej Alshamrani [3], Hala Aljishi [3], Jaffar Al-Tawfiq [4 5 6]

Affiliations Expand

- PMID: 40989229
- PMCID: PMC12452582
- DOI: 10.1016/j.ijregi.2025.100733

Abstract

Objectives: Large mass gathering events significantly increase the risk of infectious disease transmission, particularly respiratory infections, due to unavoidable overcrowding and exposure to airborne pathogens. Therefore, this study aims to assess the prevalence of cough, its duration, and associated symptoms during the religious mass gathering event among pilgrims in the 2024 Hajj season.

Methods: This cross-sectional study was conducted during Hajj in Makkah, Saudi Arabia, in 2024. A face-to-face random interview utilizing a structured questionnaire was employed to collect data from 2,913 pilgrims, who were randomly selected as participants and were at least 18 years old. Baseline demographic data and clinical characteristics were compiled using descriptive statistics. Continuous variables were presented as means and standard deviations, while categorical data were illustrated as counts and percentages.

Results: Among 2913 Hajj pilgrims, the average age was 53.9 ± 11.8 years, and 1,173 (40.4%) reported cough symptoms. The highest prevalence was in the 50-64 age group (60.7%). Chronic diseases were significantly more common in patients with cough (53.3%). Diabetes (357 cases) and hypertension (330 cases) were the most common conditions. Of the 1,173 participants with cough, 10.3% reported no associated symptoms, while sore throat (30.8%) was the most common. Logistic regression confirmed chronic disease, nationality, and age as significant predictors of cough.

Conclusions: A significant number of cough symptoms were reported, with the highest incidence in older adults. Additionally, notable associations were identified between cough and pre-existing health conditions, particularly diabetes mellitus, hypertension, chronic heart disease, and asthma.. Future research should investigate the long-term effects of cough and its related symptoms or use of medications in mass gatherings.

Keywords: Chronic diseases; Cough; Hajj; Infectious diseases; Mass gatherings; Public Health; Respiratory symptoms.

Conflict of interest statement

The authors have no competing interests to declare.

- 27 references
- 2 figures

Full text links

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Cite

7

Ann Am Thorac Soc

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. 2025 Dec;22(12):1853-1862.

doi: 10.1513/AnnalsATS.202412-1329OC.

Cough in Adults with Undiagnosed Respiratory Symptoms

Sheojung Shin [1], Jessica Poliwoda [1], G A Whitmore [2], Katherine L Vandemheen [1], Celine Bergeron [3], Louis-Philippe Boulet [4], Andréanne Côté [4], Stephen K Field [5], Erika Penz [6], R Andrew McIvor [7], Catherine Lemière [8], Samir Gupta [9], Paul Hernandez [10], Irvin Mayers [11], Mohit Bhutani [11], M Diane Lougheed [12], Christopher J Licskai [13], Tanweer Azher [14], Nicole Ezer [15], Martha Ainslie [16], Tetyana Kendzerska [1], Gonzalo G Alvarez [1], Sunita Mulpuru [1], Shawn D Aaron [1]

Affiliations Expand

- **PMID: 40788604**

- **DOI: 10.1513/AnnalsATS.202412-1329OC**

Abstract

Rationale: Cough is a common symptom of undiagnosed respiratory conditions. Objectives: To investigate cough in adults with undiagnosed respiratory symptoms and its association with quality of life (QoL), sleep quality, and healthcare utilization for respiratory illness. Methods: We used a case-finding strategy to find community-dwelling adults with respiratory symptoms but no

previous history of diagnosed lung disease. Pre and postbronchodilator spirometry determined if participants met diagnostic criteria for asthma, chronic obstructive pulmonary disease (COPD), or preserved ratio impaired spirometry, or if they had normal spirometry. Twelve questions from the Asthma Screening Questionnaire, COPD Assessment Test, and the St. George's Respiratory Questionnaire were used to develop a cough score. The 36-Item Short Form Survey and Global Sleep Assessment Questionnaire were used to assess QoL and sleep quality, respectively. Results: Adults with undiagnosed respiratory symptoms (*n* = 2,857; mean score, 57.8; 95% confidence interval [CI], 56.9 to 58.6) reported higher cough scores than age-matched control subjects (*n* = 231; mean score, 17.7; 95% CI, 15.6 to 19.8). Participants found to have asthma (*n* = 265; mean score, 61.0; 95% CI, 58.2 to 63.7) and COPD (*n* = 330; mean score, 61.8; 95% CI, 59.3 to 64.3) had higher cough scores than those with preserved ratio impaired spirometry (*n* = 172; mean score, 54.5; 95% CI, 51.1 to 58.0) or normal spirometry (*n* = 2,090; mean score, 57.0; 95% CI, 56.0 to 58.0). Higher cough scores were associated with decreased QoL (lower 36-Item Short Form Survey score; regression coefficient, -0.19; 95% CI, -0.22 to -0.17; *P* < 0.001), worse sleep quality (higher Global Sleep Assessment Questionnaire score; regression coefficient, 0.16; 95% CI, 0.14 to 0.18; *P* < 0.001), and higher healthcare utilization for respiratory illness (incidence rate ratio, 1.007; 95% CI, 1.004 to 1.010; *P* < 0.001). Conclusions: In adults with undiagnosed respiratory symptoms, cough was most severe in those with undiagnosed asthma or COPD and was independently associated with worse QoL, impaired sleep quality, and higher healthcare utilization for respiratory illness.

Keywords: asthma; chronic obstructive pulmonary disease; cough; quality of life; sleep.

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Ann Med

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. 2025 Dec;57(1):2524089.

doi: 10.1080/07853890.2025.2524089. Epub 2025 Jun 27.

Association between heavy metal exposure and chronic cough: the mediating roles of inflammation

Jun Wen [1], Rongjuan Zhuang [1], Qin Zhang [2], Changfen Wang [3], Jing Chi [1]

Affiliations Expand

- PMID: 40576318
- PMCID: PMC12207769
- DOI: 10.1080/07853890.2025.2524089

Abstract

Background: Right now, epidemiological research examining the connection between blood heavy metal exposure and chronic coughing is still deficient. Therefore, the survey was aimed at the effects of multiple heavy metals on chronic cough.

Method: In this investigation, 2647 individuals from NHANES were included. This study applied multiple statistical models to systematically explore the associations between single and mixed blood metal with the prevalence of chronic cough, including logistic regression, weighted quantile sum (WQS) regression, bayesian kernel machine regression (BKMR), and the Shapley Additive Explanations (SHAP) model. Finally, this research conducted mediation analyses to investigate the mediated effects of inflammation on the association between metal and chronic cough.

Result: In the logistic regression model of single exposure, blood cadmium was positively associated with the prevalence of chronic cough (OR: 3.17; 95% CI: 2.08-4.83). Consistent findings from the WQS, BKMR, and SHAP models revealed that cumulative exposure to multiple blood metals was positively linked to chronic cough, with cadmium emerging as the predominant contributor among the five examined metals. Mediation analyses indicated that WBC and neutrophils, with a proportion of 2.74% and 5.06%, respectively, mediated the link of cadmium in blood with chronic cough.

Conclusion: Exposure to heavy metal mixtures was linked to an increase in the prevalence of chronic cough. And blood cadmium may primarily drive this association, with activated inflammation partially mediating it. Our findings offer novel insights into the impact of blood cadmium to chronic cough.

Keywords: Bayesian kernel machine regression (BKMR); Heavy metal; Shapley additive explanations (SHAP); chronic cough; inflammation; mediation.

Conflict of interest statement

No potential competing interest was reported by the authors.

- 42 references
- 5 figures

Supplementary info

MeSH terms, SubstancesExpand

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

1

BMC Pulm Med

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. 2025 Dec 1.

doi: 10.1186/s12890-025-04011-2. Online ahead of print.

Association between gastroesophageal reflux disease and incident bronchiectasis: a nationwide representative population-based study in Korea

Jiyoung Yoon [#1], Jai Hoon Yoon [#2], Heajung Lee [#3], Jun Su Lee [4], Seong Mi Moon [5], Hayoung Choi [6], Bumhee Yang [#7], Hyun Lee [#8]

Affiliations Expand

- PMID: 41327280

- DOI: 10.1186/s12890-025-04011-2

Free article

Abstract

Introduction: A close association between gastroesophageal reflux disease (GERD) and chronic respiratory diseases has been suggested. However, limited information is available on whether GERD is associated with an increased incidence of bronchiectasis.

Methods: Using a nationwide representative claims database, we identified adults with GERD (GERD cohort) and propensity score-matched controls without GERD (matched controls) between 2004 and 2012. Both cohorts were followed until the date of bronchiectasis diagnosis, date of death, or December 31, 2015. Cox proportional hazard regression analyses were used to evaluate the risk of bronchiectasis between groups. Using the GERD cohort, we also evaluated factors associated with bronchiectasis.

Results: During the median follow-up of 9.5 years (interquartile range: 6.33-12.17 years), the cumulative incidence of bronchiectasis was significantly higher in the GERD cohort than in matched controls (418.59 person-years vs. 291.68 person-years; P < 0.01), with a hazard ratio (HR) of 1.43 (95% confidence interval [CI] = 1.13-1.55). Besides, the risk of bronchiectasis increased as GERD severity increased (HR = 1.24, 95% CI = 1.12-1.38 for mild GERD group and HR = 1.48, 95% CI = 1.35-1.62 for severe GERD group). Among the GERD cohort, factors associated with increased risk bronchiectasis were older age (the highest adjusted hazard ratio [aHR] = 8.46, 95% CI = 4.84-14.80 for individuals aged 70 years or older versus individuals aged 20-29), underweight (aHR = 1.79, 95% CI = 1.35-2.37), chronic obstructive pulmonary disease (aHR = 1.33, 95% CI = 1.06-1.67), asthma (aHR = 1.51, 95% CI = 1.25-1.82), and peptic ulcer disease (aHR = 1.26, 95% CI = 1.09-1.46).

Conclusion: GERD is associated with an increased risk of bronchiectasis. Older age, underweight, coexisting airway diseases, and peptic ulcer disease were risk factors for developing bronchiectasis in GERD.

Keywords: Bronchiectasis; Epidemiology; Gastroesophageal reflux; Risk.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study protocol was approved by the Institutional Review Board of Chungbuk National University Hospital (IRB No. CBNUH 2024-06-10). The requirement for informed consent was waived, as it was a retrospective study and the data used were anonymized. This study complied with the guidelines stipulated in the Declaration of Helsinki, and all methods were performed in accordance with the relevant guidelines. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- **52 references**

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2

Randomized Controlled Trial

Pulmonology

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. 2025 Dec 31;31(1):2594888.

doi: 10.1080/25310429.2025.2594888. Epub 2025 Dec 1.

Electrovest®: A novel portable electro-vibratory device for airway clearance in chronic hypersecretory lung diseases

Rafael Rivilla Rivilla [1], Antonio Yosvany Méndez Alonso [2], Erian Roque Betancourt [1], Rosa María Vázquez Sánchez [3], Inmaculada Ortíz Molina [3], Borja Bonail Acuña [4], María Del Mar Elena Pérez [5], Sergio Tejero García [6], Fernando Díaz Gutiérrez [7], Esther Quintana Gallego [8 9], Miguel Ángel Giráldez Sánchez [10], Pilar Cejudo Ramos [8 9]

Affiliations Expand

- PMID: 41324124

- DOI: 10.1080/25310429.2025.2594888

Free article

Abstract

Background: Chronic respiratory diseases such as COPD, cystic fibrosis, and bronchiectasis are frequently associated with bronchial hypersecretion, leading to airflow obstruction and recurrent infections. Effective airway clearance techniques are essential but often limited by adherence, cost, and usability.

Research question: To evaluate the clinical efficacy, safety, tolerability, and comfort of Electrovest®, a novel portable electro-vibratory device that integrates neuromuscular electrical stimulation (NMES) to promote thoracic vibrations in patients with chronic hypersecretory respiratory diseases.

Study design and methods: A randomized, controlled, crossover pilot study including 21 clinically stable patients with hypersecretory chronic respiratory diseases underwent two interventions: Electrovest® and The Vest®. Pulmonary, muscular, functional, and comfort parameters were assessed before and after each therapy. The trial was registered (NCT07175012).

Results: Sputum mobilisation was similar between devices, but Electrovest® was rated as significantly more comfortable ($p = 0.023$). Electrovest® significantly improved PImax ($p = 0.035$), 6MWT distance ($p = 0.005$), and pectoral strength ($p = 0.020$). No muscle or renal injury was detected. Cough and Sputum Assessment Questionnaire (CASA-Q) scores improved in most domains.

Conclusion: Electrovest® is a safe, well-tolerated, and effective alternative for airway clearance in chronic hypersecretory respiratory diseases. Its portability, comfort, and potential for home use may enhance long-term adherence compared to traditional systems.

Keywords: Airway clearance; bronchial hypersecretion; chronic respiratory diseases; electrostimulation; high-frequency chest wall oscillation.

Supplementary info

Publication types, MeSH terms, Associated dataExpand

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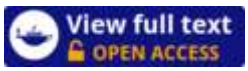

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Multicenter Study

Radiol Cardiothorac Imaging

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. 2025 Dec;7(6):e250116.

doi: 10.1148/ryct.250116.

Quantitative CT Evaluation of Bronchiectasis Improvement in Cystic Fibrosis after CFTR-Modulator Therapy

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Affiliations Expand

- **PMID: 41263663**

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Abstract

Purpose To assess whether elexacaftor-tezacaftor-ivacaftor (ETI) therapy improves bronchiectasis in cystic fibrosis at CT and to identify associated factors. Materials and Methods This retrospective study included consecutive patients with cystic fibrosis (CF) from two reference centers (between January 2020 and January 2025). Pulmonary function testing was performed, including forced expiratory volume in 1 second as percentage predicted (FEV_1%p), and CT was performed at three time points: 2 years before ETI (Y-2), at initiation of ETI (Y0), and 1 year after ETI (Y1). Bronchiectasis was assessed quantitatively and visually for shape and regional extent. Comparisons of paired medians were done using the Friedman test. Results A total of 106 patients were included (median age, 19 years [IQR, 12-29]; 59 male patients; median FEV_1%p, 80% [IQR, 55-99]). Of these 106 patients, 101 (95.3%) had

mild-to-moderate disease severity, with FEV_1%p greater than 40%. Bronchiectasis normalized volumes increased between Y-2 (7.6 [IQR, 2-19]) and Y0 (15.3 [IQR, 5.6-32]) but decreased at Y1 (3.6 [IQR, 0.6-25]; *P* < .001). Bronchiectasis improved in 74 of 106 patients (69.8%), including 18 of 106 (16.9%) with complete resolution and 56 of 106 (52.9%) with partial reduction, with a median volume reduction of 64% and six resolved segments per patient. Bronchiectasis improvement was associated with younger age (*P* < .001), cylindric CT pattern (*P* < .001), fewer CT abnormalities (*P* < .001), and greater FEV1%p increase (*P* = .03). Younger age, lower *Pseudomonas aeruginosa* colonization, and lower CT mucus volume were independent predictors of bronchiectasis improvement (R^2 = 0.50; *P* < .001). Conclusion Bronchiectasis improvement occurred after ETI treatment in a substantial fraction of patients with predominantly mild-to-moderate CF. Improvement was linked to younger age and better disease status at ETI initiation, supporting early intervention. Keywords: CT-Quantitative, Tracheobronchial Tree, Chronic Obstructive Pulmonary Disease *Supplemental material is available for this article.* © RSNA, 2025.

Keywords: CT-Quantitative; Chronic Obstructive Pulmonary Disease; Tracheobronchial Tree.

Supplementary info

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Radiology Cardiothoracic Imaging FULL TEXT

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4

Review

Ann Med

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. 2025 Dec;57(1):2584413.

doi: 10.1080/07853890.2025.2584413. Epub 2025 Nov 6.

The role of neutrophils in bronchiectasis

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Affiliations Expand

- **PMID: 41195478**

- PMCID: PMC12599158

- DOI: 10.1080/07853890.2025.2584413

Abstract

Background: Neutrophils are pivotal inflammatory cells in bronchiectasis pathophysiology, yet their stage-specific roles remain incompletely understood. This review synthesizes evidence on neutrophil activation across disease stages and explores therapeutic implications.

Methods: We performed a thorough literature review analyzing neutrophil behavior in bronchiectasis, focusing on proliferation, activation, and their contributions to tissue damage during the early and middle stages and analyzing their behavior and its correlation with disease progression. To ensure a comprehensive review of the literature on the role of neutrophils in bronchiectasis, we conducted a systematic search using the following databases: PubMed, Embase, and Web of Science. The search terms included 'neutrophils,' 'bronchiectasis,' 'neutrophil elastase,' 'bronchiectasis treatment,' and 'neutrophilic inflammation'. The search period covered articles published from January 2000 to June 2024. We also reviewed the reference lists of relevant articles to identify additional studies.

Results: Neutrophils demonstrated significant proliferation and activation during the early and middle stages of bronchiectasis, leading to the release of inflammatory mediators and an exacerbation of tissue damage. In particular, neutrophil activation during the middle stage of the disease was significantly positively correlated with the destruction of bronchial tissue. Furthermore, inhibiting neutrophil activation markedly reduced the release of inflammatory factors and improved the integrity of bronchial epithelial cells.

Conclusions: This study highlights the role of neutrophil activation at different stages of bronchiectasis and suggests that targeting neutrophil activation may represent a promising therapeutic strategy.

Keywords: Bronchiectasis; activation inhibition; bronchodilation; inflammatory mechanisms; neutrophils; targeted therapy.

Conflict of interest statement

No potential conflict of interest was reported by the author(s).

- 81 references
- 2 figures

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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Respirology

. 2025 Dec;30(12):1208-1209.

doi: 10.1002/resp.70154. Epub 2025 Oct 31.

Comment on "High Airway-to-Vessel Volume Ratio and Visual Bronchiectasis Are Associated With Exacerbations in COPD"

Junyi Bai [1], Junchao Yang [2]

Affiliations Expand

- PMID: 41170561

- DOI: 10.1002/resp.70154

No abstract available

Keywords: AVR; COPD; airway markers.

Supplementary info

Publication typesExpand

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Risk factors for bronchiolitis obliterans in children with community-acquired pneumonia and analysis of CT findings and clinical manifestations of pneumonia after the diagnosis of bronchiolitis obliterans

Jiapu Hou [1], Ruiyang Sun [1], Xue Zhang [1], Wanyu Jia [1], Peng Li [1], Zhipeng Jin [1], Chunlan Song [1]

Affiliations Expand

- PMID: 41163588
- PMCID: PMC12576899
- DOI: 10.1080/07853890.2025.2578730

Abstract

Objective: We explore the risk factors associated with the development of Bronchiolitis obliterans in children with community-acquired pneumonia to provide some basis for the early diagnosis of Bronchiolitis obliterans.

Methods: We retrospectively analysed 83 children with community-acquired pneumonia who developed Bronchiolitis obliterans from January 2023 to October 2024 as the observation group, and 83 children with community-acquired pneumonia who did not develop Bronchiolitis obliterans for more than 1 year of follow-up as the control group. We performed a one-way logistic regression analysis of the clinical data of the two groups and further performed a multifactorial logistic regression analysis to determine the independent risk factors for the development of bronchiolitis obliterans in children with pneumonia. We analysed the ROC curves to determine the cut-off value of the indicator with the greatest diagnostic value.

Results: The results of univariate and multivariate logistic regression analyses revealed that the independent risk factors for the development of bronchiolitis obliterans in children with pneumonia were age in months (OR = 0.982, $p = 0.011$), days of hospitalization (OR = 1.132, $p = 0.043$), dyspnoea (OR = 21.374, $p < 0.001$), pulmonary consolidation (OR = 5.267, $p = 0.016$) and endobronchitis (OR = 6.421, $p = 0.002$). The areas under the ROC curves were 0.700, 0.707, 0.711, 0.702 and 0.764 ($p < 0.001$), respectively. The critical values for months and days of hospitalization were 83 months and 10 days. In this study, 24 children in the observation group had bronchiectasis, 22 had bronchial stenosis, and 8 had pulmonary necrosis after the diagnosis of bronchiolitis obliterans.

Conclusions: In children with community-acquired pneumonia who are less than 83 months of age, have been hospitalised for more than 10 days, and have dyspnoea, pulmonary consolidation, and endobronchitis, we should be vigilant for bronchiolitis obliterans to achieve early intervention and treatment.

Keywords: Bronchiolitis obliterans; community-acquired pneumonia; risk factors.

Conflict of interest statement

No potential conflict of interest was reported by the author(s).

- **26 references**
- **4 figures**

Supplementary info

MeSH termsExpand

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7

Editorial

Am J Respir Crit Care Med

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. 2025 Dec;211(12):2229-2231.

doi: 10.1164/rccm.202508-2095ED.

The Upper Airway Microbiome in Bronchiectasis: Expanding the Landscape of Airway Dysbiosis

Wei-Jie Guan [1 2 3], Cui-Xia Pan [1 2 3], Miguel Angel Martinez-Garcia [4 5]

Affiliations Expand

- **PMID: 41100723**
- **DOI: 10.1164/rccm.202508-2095ED**

No abstract available

Comment on

- Upper-Airway Microbiome, Mucociliary Function, and Clinical Outcomes in Bronchiectasis: Data from the EMBARC-BRIDGE Study.

Choi H, Richardson H, Hennayake C, Shuttleworth M, Cant E, Bottier M, Spinou A, Robertson K, Long MB, De Soyza A, Ringshausen FC, Goeminne P, Lorent N, Haworth C, Altenburg J, Loebinger MR, Alferes de Lima Headley D, Dicker AJ, Blasi F, Shteinberg M, Aliberti S, Polverino E, Sibila O, Shoemark A, Chalmers JD.Am J Respir Crit Care Med. 2025 Dec;211(12):2296-2306. doi: 10.1164/rccm.202504-0875OC.PMID: 40938736

Supplementary info

Publication types, Grants and fundingExpand

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Editorial

Respirology

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. 2025 Dec;30(12):1118-1119.

doi: 10.1002/resp.70139. Epub 2025 Oct 14.

Airway-Vessel Volume Mismatch in COPD: A New Whole-Lung Perspective

Anusha A Mappanasingam [1 2], Sarah Svenningsen [1 2 3]

Affiliations Expand

- **PMID: 41088503**

- **DOI: 10.1002/resp.70139**

No abstract available

Keywords: COPD; bronchiectasis; radiology and other imaging.

- **11 references**

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9

J Med Econ

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. 2025 Dec;28(1):1798-1810.

doi: 10.1080/13696998.2025.2567761. Epub 2025 Oct 14.

Frequency, duration, and cost of pulmonary exacerbations among patients with bronchiectasis

Maitreyee Mohanty [1], Claudia Leiras [2], Haiyan Sun [2], Reina Rau [2], John Fastenau [1], Joseph Feliciano [1], Sunjay R Devarajan [3]

Affiliations Expand

- PMID: 41017477

- DOI: 10.1080/13696998.2025.2567761

Free article

Abstract

Background: In administrative claims database studies of bronchiectasis, pulmonary exacerbations are usually defined using a fixed period for their start and end, which prevents assessment of exacerbation duration and thereby limits assessment of exacerbation characteristics. Here, we applied a novel cost-based algorithm to characterize exacerbations.

Methods: This cohort study used the Merative MarketScan Commercial Claims and Encounters database, 1-Jan-2016 to 31-Dec-2022. Patients ≥18 years with bronchiectasis (≥2 outpatient or ≥1 inpatient claim with bronchiectasis; no cystic fibrosis) had 12 months of continuous enrollment before (baseline) and ≥12 months after (follow-up) index (first bronchiectasis claim). Cost-based exacerbations were identified by compound score of week with highest percentage all-cause cost increase during follow-up compared with baseline weekly maintenance all-cause

cost, and week with highest absolute weekly cost during follow-up. Exacerbation duration was the period with significantly higher weekly cost difference during follow-up than mean baseline weekly cost. Cost-based exacerbations were compared with exacerbations identified using a traditional claims-based definition.

Results: Of 9,005 patients with bronchiectasis, 6,033 had 49,750 cost-based exacerbations during 2.5 years median follow-up. Mean (SD) cost-based exacerbation duration was 3.4 (8.6) weeks (median [Q1, Q3] 1 [1, 3] weeks). During follow-up, 82.8% patients had ≥3 cost-based exacerbations, and 67.5% patients needed hospitalization/intravenous antibiotic treatment for an exacerbation. Mean respiratory costs were higher for the first cost-based exacerbation ($7,738) than the second ($5,429). Annual respiratory costs were $14,116 for patients with (vs. $3,390 without) cost-based exacerbations. Overall, 95.7% patients with cost-based exacerbations had ≥1 claims-based exacerbation; 51.0% cost-based exacerbations met the claims-based definition.

Limitations: Cost-based exacerbations may not represent true exacerbations, because cost increases could also result from worsening comorbidities or other clinical events.

Conclusions: Exacerbations identified using a cost-based algorithm frequently lasted >3 weeks. Patients with cost-based exacerbations had higher healthcare costs, particularly respiratory costs, than those without.

Keywords: Bronchiectasis; I10; I11; claims; cost; duration; exacerbation; frequency; real-world.

Plain language summary

Bronchiectasis is a chronic lung disease where patients have symptoms including cough, congestion, shortness of breath, and fatigue. Symptoms may be more severe for some people than others, but many people with bronchiectasis have episodes where their symptoms get worse called exacerbations, or flares. People with flares often need antibiotic treatment and may need to be hospitalized. Flares are therefore a burden for patients and healthcare systems. This burden can be assessed using insurance claims data. Previous studies have identified flares based on patients receiving antibiotics in the week or two after a claim with a diagnosis code for bronchiectasis. However, flares can be different lengths and severities. This study quantified flares, and measured their duration and burden, using a new method that did not begin with any assumption of how long flares would last. Instead, flares were identified by flagging weeks with unusually high costs compared with the patient's usual healthcare costs. Using this method, identified flares often lasted more than 3 weeks. Healthcare costs were higher for people with flares than without, and a person's first flare was often the most expensive. Over 95% of people with high-cost flares had at least 1 flare that could be confirmed using the previous diagnosis-code based definition. This study provides a new research approach to identifying flares in people with bronchiectasis. The results show that flares may be longer than previously thought and place a high burden on healthcare. Future research will be needed to confirm this method using clinical data.

Supplementary info

MeSH termsExpand

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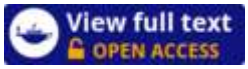

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Multicenter Study

Am J Respir Crit Care Med

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. 2025 Dec;211(12):2296-2306.

doi: 10.1164/rccm.202504-0875OC.

Upper-Airway Microbiome, Mucociliary Function, and Clinical Outcomes in Bronchiectasis: Data from the EMBARC-BRIDGE Study

Hayoung Choi [1], Hollian Richardson [2], Chandani Hennayake [2], Morven Shuttleworth [2], Erin Cant [2], Mathieu Bottier [3], Arietta Spinou [4], Kara Robertson [2], Merete B Long [2], Anthony De Soyza [5], Felix C Ringshausen [6 7], Pieter Goeminne [8], Natalie Lorent [9 10], Charles Haworth [11], Josje Altenburg [12], Michael R Loebinger [13], Daniela Alferes de Lima Headley [2], Alison J Dicker [14], Francesco Blasi [15 16], Michal Shteinberg [17 18], Stefano Aliberti [19 20], Eva Polverino [21], Oriol Sibila [22], Amelia Shoemark [2], James D Chalmers [2]

Affiliations Expand

- PMID: 40938736

- DOI: 10.1164/rccm.202504-0875OC

Abstract

Rationale: Infection is a key disease driver in bronchiectasis, and the upper-airway microbiome has been known to shape the lower-airway microbiome. Objective: To evaluate the relationship between the upper-airway microbiome, mucociliary function, and clinical outcomes in bronchiectasis. Methods: Nasopharyngeal swabs were collected from 344 patients with bronchiectasis enrolled across five European centers. A total of 104 patients had nasopharyngeal samples obtained at the 1-year follow-up. Microbiome composition was assessed according to Bronchiectasis

Severity Index and severe exacerbations. The α- and β-diversity were measured using the Chao1 and Bray-Curtis indices, respectively. Random forest analysis was performed. Dysbiosis was defined as >10% relative abundance of pathogenic taxa comprising *Pseudomonas*, *Haemophilus,* and *Staphylococcus*. Measurements and Main Results: Of the 344 patients, 200 (58.1%) were female (median age, 68 yr; IQR, 59-75 yr). α-Diversity significantly differed according to disease severity (*P* = 0.002), and β-diversity analysis revealed distinct microbiome profiles associated with disease severity and severe exacerbation (permutational multivariate ANOVA, *P* = 0.021 and *P* = 0.001, respectively). Random forest analysis identified *Pseudomonas* as being associated with severe bronchiectasis (Bronchiectasis Severity Index ⩾9) and severe exacerbations. The genus-level relative taxon abundance of *Pseudomonas* was well correlated with *Pseudomonas aeruginosa* growth in the sputum culture. Patients with nasopharyngeal dysbiosis had more severe respiratory symptoms, showed epithelial disruption on nasal epithelial biopsy, and experienced more severe exacerbation over a 1-year follow-up period than those in the nondysbiosis group. The microbiome profiles were relatively stable between baseline and 1-year follow-up (*P* = 0.95). Conclusions: The upper-airway microbiome is associated with disease severity and severe exacerbation of bronchiectasis.

Keywords: bronchiectasis; dysbiosis; infection; microbiome; precision medicine.

Comment in

- **The Upper Airway Microbiome in Bronchiectasis: Expanding the Landscape of Airway Dysbiosis.**

Guan WJ, Pan CX, Martinez-Garcia MA.Am J Respir Crit Care Med. 2025 Dec;211(12):2229-2231. doi: 10.1164/rccm.202508-2095ED.PMID: 41100723 No abstract available.

Supplementary info

Publication types, MeSH terms, Grants and fundingExpand

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Respirology

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. 2025 Dec;30(12):1131-1140.

doi: 10.1111/resp.70114. Epub 2025 Aug 31.

High Airway-To-Vessel Volume Ratio and Visual Bronchiectasis Are Associated With Exacerbations in COPD

Nobuyasu Wakazono [1], Kaoruko Shimizu [1], Naoya Tanabe [2], Akira Oguma [1], Hironi Makita [3], Kazufumi Okada [4], Miho Wakazono [1], Hiroki Nishimura [1], Yuichi Kojima [1], Michiko Takimoto-Sato [1 5], Munehiro Matsumoto [1], Yuki Abe [1], Ayako Igarashi-Sugimoto [1], Nozomu Takei [1], Hirokazu Kimura [1], Houman Goudarzi [1], Takeshi Hattori [6], Ichizo Tsujino [1], Susumu Sato [2], Shigeo Muro [7], Masaharu Nishimura [1 3], Toyohiro Hirai [2], Satoshi Konno [1]

Affiliations Expand

- PMID: 40887770

- PMCID: PMC12668884

- DOI: 10.1111/resp.70114

Abstract

Background and objective: The effects of the volume mismatch between the airway and lung vasculature on exacerbation in chronic obstructive pulmonary disease (COPD) is uncertain. We aimed to examine the association between an increased volume ratio of the airway to lung blood vessels (AVR) and exacerbations, regardless of visually assessed bronchiectasis (modified Reiff [mReiff] score) and extrapulmonary vasculature on computed tomography (CT), in patients with COPD during a 5-year follow-up period.

Methods: Participants were recruited from the Hokkaido COPD Cohort Study (original, N = 96) and Kyoto University cohort (validation, N = 130). CT-derived indices of the airway and vasculature, mReiff scores, and ratio of pulmonary artery diameter to aorta diameter (PA/Ao) were evaluated. The Kaplan-Meier method with log-rank tests was used to compare the high (highest quartile) and low (other quartiles) groups, while multivariable Cox proportional hazards models explored the factors associated with the time to first exacerbation.

Results: The high AVR group showed a shorter time to first exacerbation than the low AVR group in analyses of both all patients and those without visual bronchiectasis. High AVR was significantly associated with exacerbations [Hazard ratio [95% confidence interval]: original, 3.85 [1.17, 12.6]; validation, 2.01 [1.15, 3.52]), irrespective of mReiff scores and PA/Ao in all patients. The lung-volume-corrected airway or blood vessel volumes did not correlate with the time to first exacerbation.

Conclusion: High AVR was associated with a shorter time to first exacerbation, complementary to mReiff score and PA/Ao, suggesting that AVR is a novel CT-derived predictor of exacerbation in COPD.

Keywords: bronchiectasis; chronic obstructive pulmonary disease; computed tomography; exacerbation; pulmonary blood vessel.

Conflict of interest statement

This research was previously presented at the 2024 Congress of the American Thoracic Society (ATS).

The authors have reported the following to Respirology: K.S. was supported by grants from Daiwa Health Development Inc., outside the submitted work. Na.T. was supported by grants from FUJIFILM Co. Ltd., and Daiichi Sankyo Company Ltd., and received honoraria from AstraZeneca, outside the submitted work. A.I.-S. was supported by grants from Bayer Yakuhin Ltd., outside the submitted work. I.T. was supported by grants from Mochida Pharmaceuticals K.K., Nippon Shinyaku Co. Ltd., Nippon Boehringer Ingelheim Co. Ltd., Medical System Network Co. Ltd., Kaneka Corp., and Takeyama Co. Ltd., and received honoraria from Nippon Shinyaku Co. Ltd., and Janssen Pharmaceutical K.K., outside the submitted work. S.M. was supported by grants from ROHTO Pharmaceutical Co. Ltd., and FUKUDA Life Tech Co. Ltd., and received honoraria from Nippon Boehringer Ingelheim Co. Ltd., AstraZeneca K.K., and GlaxoSmithKline K.K., outside the submitted work. To.H. was supported by grants from FUJIFILM Co. Ltd., and Daiichi Sankyo Co. Ltd., and received payment for lectures from Nippon Boehringer Ingelheim Co., outside the submitted work. S.S. was supported by grants from Nippon Boehringer Ingelheim Co., Philips-Respironics, Fukuda Denshi, Fukuda Lifetec Keiji, and ResMed, outside the submitted work. S.K. was supported by grants from Mochida Pharmaceuticals K.K., Nippon Shinyaku Co. Ltd., Nippon Boehringer Ingelheim Co. Ltd., Medical System Network Co. Ltd., Kaneka Corp., Takeyama Co. Ltd., and Novartis, and received honoraria from AstraZeneca and KYORIN Pharmaceutical, outside the submitted work. None of these companies played a role in the design or analysis of the study or in the writing of the manuscript. N.W., A.O., H.M., K.O., M.W., H.N., Y.K., M.T.S., M.M., Y.A., No.T, H.K., H.G., Ta.H., and M.N. declare no conflicts of interest.

- **42 references**
- **4 figures**

Supplementary info

MeSH terms, Grants and fundingExpand

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12

Am J Med Sci

. 2025 Dec;370(6):540-545.

doi: 10.1016/j.amjms.2025.08.002. Epub 2025 Aug 5.

Prognostic role of the pulmonary artery-to-aorta ratio and the N-terminal of prohormone brain natriuretic peptide in patients hospitalized with bronchiectasis exacerbation

Hyewon Seo [1], Seung-Ick Cha [2], Jongmin Park [3], Jae-Kwang Lim [3], Ji-Eun Park [1], Sun Ha Choi [1], Yong Hoon Lee [1], Seung-Soo Yoo [1], Shin-Yup Lee [1], Jaehee Lee [1], Chang-Ho Kim [1], Jae-Yong Park [1]

Affiliations Expand

- PMID: 40759364

- DOI: 10.1016/j.amjms.2025.08.002

Abstract

Background: Information regarding the role of the N-terminal of prohormone brain natriuretic peptide (NT-proBNP) and the ratio of the diameter of the pulmonary artery to the diameter of the aorta (PA:A ratio) on computed tomography in predicting prognosis in patients with bronchiectasis exacerbation is limited.

Methods: Retrospectively, patients with bronchiectasis exacerbation were classified into survivors and non-survivors based on 1-year mortality. Clinical, laboratory, and radiological variables were compared between the two groups.

Results: Based on 1-year mortality, patients (n = 389) were classified as non-survivors (67 [17.2 %]) or survivors (322 [82.8 %]). Age, body mass index <18.5 kg/m^2, ≥3 exacerbations in the previous year, NT-proBNP >404 pg/mL, and PA:A ratio >1 were independent predictors of 1-year mortality in patients hospitalized with bronchiectasis exacerbation. In terms of the prognostic performance of various factors for predicting 1-year mortality using receiver operating characteristic curves, NT-proBNP had the highest area under the curve, followed by PA:A ratio. Furthermore, the prognostic performance of the Bronchiectasis Severity Index, FACED score, NT-proBNP, and PA:A ratio in predicting 1-year mortality was assessed in 198 patients with spirometry results. Among these variables, the Bronchiectasis Severity Index exhibited the highest area under the curve, followed by NT-proBNP and PA:A ratio.

Conclusions: PA:A ratio and NT-proBNP may be valuable biomarkers for predicting 1-year mortality in patients with bronchiectasis exacerbation.

Keywords: Bronchiectasis; Computed tomography; Mortality; Prognosis; Pulmonary artery.

Conflict of interest statement

Declaration of competing interest None of the authors has a financial relationship with a commercial entity that has an interest in the subject of this manuscript.

Supplementary info

MeSH terms, SubstancesExpand

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COPD

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. 2025 Dec;22(1):2532076.

doi: 10.1080/15412555.2025.2532076. Epub 2025 Jul 28.

Current Practices on Prescribing and Deprescribing for Patients on Long-Term Antibiotic Treatment for Chronic Pulmonary Conditions: An Umbrella Review by the European Society of Clinical Pharmacy (ESCP)

Ivana Tadic [1], Daniela Fialová [2], Ankie Hazen [3], Martin C Henman [4], Betul Okuyan [5], Francesca Wirth [6], Abdikarim Abdi [7], Silvana Urru [8], Kayla R Stover [9], Anita E Weidmann [1]

Affiliations Expand

- PMID: 40719419

- DOI: 10.1080/15412555.2025.2532076

Free article

Abstract

Purpose: Chronic pulmonary conditions require complex treatment strategies involving long-term antibiotic treatment, which carries the highest risk of antimicrobial resistance and adverse drug events (ADE). Specific guidance on prescribing and deprescribing can help reduce these risks and improve therapy effectiveness. The aim of the study was to determine prescribing and deprescribing

practices for long-term antibiotic treatment (≥30 days) in preventing exacerbations of stable chronic pulmonary conditions in adult patients across all healthcare settings.

Patients and methods: This umbrella review was part of a larger registered study (PROSPERO, CRD42022381268) including systematic reviews and meta-analyses retrieved from PubMed, Cochrane Library, and PsycInfo. Outcomes of interest included condition, antibiotic, dose, duration, (de-) prescribing advice. Standardized methodological tools were used to assess methodological quality of the selected publications (ROBIS), facilitate data extraction (EPOC), and guide narrative summary of findings (PRIOR).

Results: In total, *n* = 14 publications were analyzed. (De-)prescribing advice is summarized for treatment (≥30 days) of chronic obstructive pulmonary disease, asthma, non-cystic fibrosis bronchiectasis, cystic fibrosis, and bronchiolitis obliterans syndrome. Macrolides are the most commonly recommended antibiotic for stable chronic pulmonary conditions. ADEs are the main reason for antibiotic discontinuation. Little consideration is given to emergence of antibiotic resistance.

Conclusion: There is a significant paucity of literature providing specific (de-)prescribing advice for clinical practice. More precise recommendations are required in view of patient safety.

Keywords: Chronic obstructive pulmonary disease; antibiotics; asthma; bronchiolitis obliterans syndrome; lung diseases; non-cystic fibrosis bronchiectasis.

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Childhood Pulmonary Virus Infection and Future Bronchiectasis

[Article in English, Spanish]

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