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

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BMC Pulm Med

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. 2026 Mar 6.

doi: 10.1186/s12890-025-04078-x. Online ahead of print.

Effects of combined inspiratory muscle training and positive expiratory pressure therapy on pulmonary function, respiratory muscle strength, exercise capacity and dyspnea in stable group E COPD patients

Latifullah Jalal [1], Alperen Aksakal [2], Buğra Kerget [1 3], Elif Yılmazel Uçar [1], Ömer Araz [1], Leyla Sağlam [1], Metin Akgün [4]

Affiliations Expand

- **PMID: 41792683**

- **DOI: 10.1186/s12890-025-04078-x**

No abstract available

Keywords: COPD; Dyspnea; Exercise capacity; Inspiratory muscle training; Positive expiratory pressure; Pulmonary function tests; Pulmonary rehabilitation.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The Institutional Review Board at Erzurum Atatürk University Faculty of Medicine Ethics Committee

approved this study (Board date: 06.07.2023, protocol number: B.30.2ATA.0.01.00/487), which was conducted in compliance with the 2013 version of the 1975 Helsinki Declaration. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- 35 references

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2

Commun Med (Lond)

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. 2026 Mar 6.

doi: 10.1038/s43856-026-01479-9. Online ahead of print.

Effect of exercise therapy and self-management support on multimorbidity: Secondary analysis of the MOBILIZE trial

Alessio Bricca [1 2], Mette Nyberg [3], Grit Elster Legaard [4], Mette Dideriksen [3], Graziella Zangger [3], Lau C Thygesen [5], Søren T Skou [6 3 7]

Affiliations Expand

- PMID: 41792245

- DOI: 10.1038/s43856-026-01479-9

Abstract

Background: Multimorbidity is linked to systemic low-grade inflammation, poor glycaemic control, dyslipidaemia, and hypertension, yet evidence on effective interventions is limited. We evaluated the impact of a 12-week personalised exercise therapy and self-management support programme, in addition to usual care, on these outcomes in individuals with multimorbidity.

Methods: This was a pre-planned secondary analysis of the MOBILIZE multicentre randomised controlled trial (NCT04645732). Participants (n = 228) had at least two of the following conditions: knee/hip osteoarthritis, chronic obstructive pulmonary disease, heart disease, hypertension, type 2 diabetes, or depression. The intervention included 24 supervised 60-minute group-based exercise sessions and

24 self-management sessions over 12 weeks. Outcomes were assessed at baseline and 4 months, including interleukin-1 receptor antagonist (IL-1ra), high-sensitivity C-reactive protein (hs-CRP), tumour necrosis factor-alpha (TNF-α), interleukin-6 (IL-6), glycated Hemoglobin (HbA1c), fasting glucose, insulin, High-Density Lipoprotein (HDL), Low-Density Lipoprotein (LDL), triglycerides, and blood pressure.

Results: Compared to usual care, the intervention group shows a statistically significant reduction in systolic blood pressure (mean difference: -4.7 mmHg, 95% CI: -8.8 to -0.6). No significant between-group differences are observed for other biomarkers, although favouring the intervention. Sensitivity analyses-excluding participants with low adherence, those receiving supervised exercise in the control group, or undergoing surgery-support the primary findings.

Conclusions: A 12-week personalised exercise and self-management programme reduces systolic blood pressure in people with multimorbidity. These findings support incorporating exercise therapy into multimorbidity care guidelines as a non-pharmacological adjunct.

Plain language summary

We studied whether adding exercise and self-management support to usual care helps people with multiple long-term conditions. In this trial, participants followed a 12-week programme with supervised exercise and self-management group sessions. We found that the programme lowered blood pressure compared to usual care alone. However, it did not significantly change other health markers like blood sugar, cholesterol, or inflammation. These results suggest that exercise therapy may be a helpful addition to care for people with multiple long-term conditions, especially for managing blood pressure. It also highlights the need for more research on exercise therapy for this complex group.

Conflict of interest statement

Competing interests: S.T.S. is the co-founder of Good Life with Osteoarthritis in Denmark (GLA:D®), a non-profit initiative hosted at the University of Southern Denmark. This initiative aims to implement clinical guidelines, including exercise and self-management support, for individuals with osteoarthritis in clinical practice. The authors affirm that they have no other competing interests.

- **50 references**

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3

NPJ Prim Care Respir Med

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. 2026 Mar 6.

doi: 10.1038/s41533-026-00497-3. Online ahead of print.

Asthma/COPD clinics increases adherence to management guidelines and associates with less morbidity and lower all-cause mortality - a prospective cohort study

Jenny Nilsson [1], Helena Backman [2], Johanna Karlsson Sundbaum [2], Viktor Strandkvist [3], Linnea Hedman [2], Caroline Stridsman [2]

Affiliations Expand

- PMID: 41792171

- DOI: 10.1038/s41533-026-00497-3

Abstract

In asthma, suboptimal disease control is common due to limited knowledge about self-management, undertreatment and infrequent follow-up visits. Most patients are treated in primary care where asthma/COPD clinics (ACC) are recommended in Sweden, but evidence of the effects is limited. The aim was to compare certified ACCs with clinics providing regular care in terms of adherence to asthma management guidelines, and the associations with asthma symptom control, healthcare consumption, and mortality in adults with asthma. In this cohort study, we extracted data from the Swedish National Airway Register, on 84230 adults with asthma, cared for at certified ACCs (n = 17 primary care centres) and regular care clinics (n = 650 primary care centres) in Sweden. Data were linked to other national registers in order to obtain data about pharmaceuticals, healthcare consumption, and mortality. The index date was the years 2015-2017, and the study ended in 2022. A binary logistic regression was used to assess morbidity and mortality associations at the study's end. A higher proportion of patients at certified ACCs received interventions such as patient education, written asthma action plan, smoking cessation, Asthma Control Test, spirometry, and inhaled corticosteroids than patients at regular care clinics. Certified ACCs were associated with a lower probability of uncontrolled asthma (OR 0.76, 95% CI 0.67-0.87), need of specialist/emergency care (OR 0.69, 95% CI 0.51-0.92) and death (OR 0.69, 95% CI 0.55-0.86). In conclusion, adherence to asthma management guidelines was higher in certified ACCs which were associated with a more well-controlled asthma, less secondary healthcare visits and lower all-cause mortality, but not with frequent exacerbations. Our findings highlight the importance of ACCs in providing evidence-based care in accordance with asthma management guidelines.

Conflict of interest statement

Competing interests: J.N., J.K.S., V.S., and L.H., reports no competing interests. H.B., reports personal fees for Advisory Board from Chiesi, outside the submitted work.C.S., reports personal and institutional fees from AstraZeneca, Chiesi, GSK and TEVA for lectures and/or advisory boards, outside the submitted work.

- **55 references**

Supplementary info

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BMJ Open Respir Res

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. 2026 Mar 6;13(1):e003589.

doi: 10.1136/bmjresp-2025-003589.

Phase 2a randomised, double-blind, placebo-controlled study to evaluate the efficacy and safety of londamocitinib (AZD4604) two times per day for 12 weeks in adult patients with moderate-to-severe asthma uncontrolled on medium-high-dose ICS-LABA

Mohd Nubli Mustapa [1], Rod Hughes [2], Tina J Jensen [3], Davinder P Dosanjh [2 4], Kyriakos V Konstantinidis [5], Julia Jonsson [6], Szilárd Nemes [7], Zala Jevnikar [8], Michael Jones [9], Amanda Adams [10], Maria G Belvisi [11], Praveen Akuthota [12], Janwillem W H Kocks [13 14 15 16]

Affiliations Expand

- **PMID: 41791844**

- **DOI: 10.1136/bmjresp-2025-003589**

Abstract

Introduction: Asthma is a heterogeneous condition and affected individuals show variable responses to available medications. An unmet need exists for add-on therapies that target novel molecular pathways, before patients escalate to biologics. Janus kinase 1 (JAK1) is implicated in multiple inflammatory cytokine

pathways critical for the pathogenesis of asthma. Londamocitinib (AZD4604) is a highly specific, inhaled, JAK1 inhibitor with high potency to block multiple JAK1-dependent signalling pathways. AJAX is a phase 2a, randomised, double-blind, partially decentralised placebo-controlled study assessing the efficacy, safety and pharmacokinetics (PK) of londamocitinib in adults with moderate-to-severe asthma uncontrolled on medium-to-high-dose inhaled corticosteroid/long-acting β_2-agonist.

Methods and analysis: The primary endpoint is time to first CompEx Asthma event. Secondary endpoints include change from baseline in prebronchodilator forced expiratory volume in 1 s, chronic airways assessment test, six-item asthma control questionnaire, daily asthma symptom score, and morning and evening peak expiratory flow at weeks 4 and 12. In addition, assessment of the effect of londamocitinib on airway inflammation as measured by the fractional exhaled nitric oxide test; cough severity assessment; and the PK of londamocitinib in all participants after 4 and 12 weeks will also be evaluated.

Ethics and dissemination: The study has received ethical approval from the appropriate ethic committee and will be conducted in accordance with the Declaration of Helsinki, Good Clinical Practice guidelines, and all applicable regulatory requirements. All participants will provide written informed consent prior to enrolment, with procedures in place to ensure comprehension and voluntary participation. Findings will be disseminated through peer-reviewed publications and/or presentations at scientific conferences. Summary results will be posted on the trial registry and shared with participants and relevant patient groups in lay summaries.

Keywords: Asthma.

Conflict of interest statement

Competing interests: MNM, KVK, JJ, SN, TJJ and ZJ are employees of AstraZeneca and may hold shares in AstraZeneca. DPD is an employee of AstraZeneca and may hold shares in AstraZeneca. He has received a study grant from GlaxoSmithKline and an honorarium from Boehringer Ingelheim. He has participated in advisory boards conducted by Boehringer Ingelheim, AstraZeneca, Gilead and Synairgen. MJ, RH and MGB may hold shares in AstraZeneca. AA is a patient advisor for the study and received payment from AstraZeneca for this role. PA is the US national chief investigator for the study and his institution has received payment from AstraZeneca for this role. He also reports consulting fees from AstraZeneca (for separate projects), GlaxoSmithKline, Connect Biopharma, Amgen and Sanofi/Genzyme. JWHK is the international coordinating investigator for the study and received payment from AstraZeneca for this role. He reports grants from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Teva and Valneva. He reports receiving personal fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Teva, MSD, COVIS Pharma and ALK Albello. He also reports receiving non-financial support from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline and Mundi Pharma. JWHK holds <5% shares of Lothar Medtec GmbH and is owner of the General Practitioners Research Institute.

Full text links

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BMC Pulm Med

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. 2026 Mar 7.

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From early smoking to COPD and other chronic respiratory disease: unraveling the roles of chemical pollutants and underlying toxicological mechanisms

Rui Zhao [1 2 3 4], Huihui Zeng [5 6 7 8], Yan Chen [9 10 11 12]

Affiliations Expand

- PMID: 41792688

- DOI: 10.1186/s12890-026-04229-8

No abstract available

Keywords: Cadmium; Chemical pollutants; Chronic respiratory disease; Cigarette smoking; Early smoking.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study used de-identified data from NHANES and UK Biobank, for which informed consent was obtained at the time of original enrollment. NHANES protocols were approved by the National Center for Health Statistics ethics review board, and all participants provided written informed consent. UKB was conducted in accordance with the principles of the Declaration of Helsinki; ethical approval was obtained from the North-West Research Ethics Committee. Our analysis was conducted under UKB application ID: 105139. Ethical approval for secondary analysis was granted by the Second Xiangya Hospital, Central South University (approval number LYF20250266), with a waiver of additional consent. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- 44 references

Supplementary info

Grants and fundingExpand

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Review

Biochim Biophys Acta Mol Cell Res

. 2026 Mar 4:120127.

doi: 10.1016/j.bbamcr.2026.120127. Online ahead of print.

Thymic stromal lymphopoietin (TSLP) - pro-inflammatory cytokine and antimicrobial peptide

Katinka Döhner [1], Ojonugwa Precious John [2], Thomas Werfel [3]

Affiliations Expand

- PMID: 41791676

- DOI: 10.1016/j.bbamcr.2026.120127

Abstract

Thymic stromal lymphopoietin (TSLP) is a pleiotropic cytokine primarily produced by epithelial cells. It functions as a key regulator of immune responses, especially at barrier surfaces such as the skin, gut, and respiratory tract. Humans express two forms of TSLP: long-form TSLP (lfTSLP), which acts as a pro-inflammatory cytokine, and short-form TSLP (sfTSLP), which is an anti-inflammatory antimicrobial peptide. The long-form of TSLP is associated with the development of atopic diseases including bronchial asthma, allergic rhinitis, atopic dermatitis, and eosinophilic esophagitis. In addition, TSLP also plays a role in various inflammatory conditions, such as chronic obstructive pulmonary disease, inflammatory bowel disease, and rheumatoid arthritis, as well as neoplastic disorders including acute lymphoblastic leukemia, several lymphomas, and pancreatic and breast cancer. Tezepelumab, a therapeutic antibody that targets TSLP, has been approved for the treatment of severe asthma, and clinical trials are ongoing for other diseases, such as chronic obstructive pulmonary disease. In this review, we focus on the differences between lfTSLP and sfTSLP and the role of single-nucleotide polymorphisms in TSLP.

Keywords: Anti-inflammatory; Antimicrobial peptide; Atopic disease; Cytokine; Long-form thymic stromal lymphopoietin (lfTSLP); Pro-inflammatory; Short-form thymic stromal lymphopoietin (sfTSLP); Single-nucleotide polymorphism (SNP).

Conflict of interest statement

Declaration of competing interest The authors have nothing to declare.

Supplementary info

Publication typesExpand

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Review

Physiol Rev

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. 2026 Mar 6.

doi: 10.1152/physrev.00024.2025. Online ahead of print.

Fueling the Fire: Metabolic Dysfunction and Senescence as Drivers of Lung Aging and Disease

Corrine R Kliment [1 2], Aditi U Gurkar [1 3 4], Nayra Cárdenes [1], Richard Ramonell [5], Toren Finkel [1 3], Melanie Königshoff [1 6]

Affiliations Expand

- **PMID: 41789983**

- **DOI: 10.1152/physrev.00024.2025**

Abstract

With a rapidly expanding human population at advanced ages and age as the main driver for chronic diseases, we face the challenge of understanding tissue aging

and devising new therapeutic interventions. Cellular senescence is an important hallmark of all aging tissues and has emerged as a potential key driver of chronic lung diseases, including pulmonary fibrosis, chronic obstructive pulmonary disease (COPD), and asthma. This comprehensive review recapitulates current knowledge of pathways and processes involved in cellular senescence with emphasis on the role of mitochondrial dysfunction and the "4 Ms" (morphology, mitophagy, metabolism, and metabolites). We review our current knowledge of healthy lung aging, discuss which pathomechanisms in chronic lung disease are characterized by senescence, and summarize current target therapeutics and their impact on lung disease. Within this exponentially growing field, we propose emerging concepts and current gaps in knowledge which need to be addressed to develop better opportunities for therapeutic strategies and future investigations.

Keywords: Aging; Lung; Metabolism; Mitochondria; senescence.

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Editorial

Eur Respir J

. 2026 Mar 5;67(3):2502374.

doi: 10.1183/13993003.02374-2025. Print 2026 Mar.

The complexity of outcome assessment in trials of symptomatic management for people living with persistent breathlessness: challenges and opportunities

Daisy J A Janssen [1 2], Miriam J Johnson [3]

Affiliations Expand

- PMID: 41786492

- DOI: 10.1183/13993003.02374-2025

No abstract available

Conflict of interest statement

Conflict of interest: D.J.A. Janssen reports grants from the Netherlands Organisation for Health Research and Development, EU Horizon Research and Innovation Programme, and Proteion, payment or honoraria for lectures, presentations, manuscript writing or educational events from Carend, all outside the submitted work and all paid to the institution, and participation on a data safety monitoring board or advisory board with Queen's University Belfast Palliative Heart Synthesis II study, EA PAL-COPD study and Cicely Saunders Institute of Palliative Care. M.J. Johnson has no potential conflicts of interest to disclose.

Comment on

- **Facial airflow enhances the benefits of exercise training in people with chronic lung disease: a randomised controlled trial.**

Aucoin R, Nguyen D, Ross B, Bourbeau J, Lewthwaite H, Ekström M, von Leupoldt A, Jensen D.Eur Respir J. 2026 Mar 5;67(3):2501109. doi: 10.1183/13993003.01109-2025. Print 2026 Mar.PMID: 41232940 Clinical Trial.

Supplementary info

Publication typesExpand

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Editorial

Eur Respir J

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. 2026 Mar 5;67(3):2502649.

doi: 10.1183/13993003.02649-2025. Print 2026 Mar.

The vascular fingerprint of the lungs: why pulmonary vessel count matters in COPD

Krit Dwivedi [1], Don D Sin [2], Alejandro A Diaz [3]

Affiliations Expand

- **PMID: 41786489**

- **DOI: 10.1183/13993003.02649-2025**

No abstract available

Conflict of interest statement

Conflict of interest: K. Dwivedi reports support for the present study from the National Institute for Health and Care Research (NIHR) and the Sheffield Biomedical Research Centre (BRC), grants from Academy of Medical Sciences, consultancy fees from Pulmovant, a leadership role with the Royal College of Radiologists, and is an Early Career Editor for the European Respiratory Journal. D.D. Sin reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca and GlaxoSmithKline, participation on a data safety monitoring board or advisory board with the National Heart, Lung, and Blood Institute, and is the Deputy Chief Editor for the European Respiratory Journal. A.A. Diaz reports support for the present study from the National Heart, Lung, and Blood Institute, payment or honoraria for lectures, presentations, manuscript writing or educational events from Zambon, a US patent issued (number 11,946,928 B2 "Methods and compositions relating to airway dysfunction"), and participation on a data safety monitoring board or advisory board with Verona Pharma, Sanofi-Regeneron, Parion, Polarean and the COPD SAMBA Clinical Trial.

Comment on

- **Computed tomography total vessel count and vessel count percentages: associations with exercise capacity, symptoms and rapid FEV_1 decline in COPD.**

Singh GV, Asghar H, Collins SÉ, Genkin D, Hogg JC, Bourbeau J, Tan WC, Stickland MK, Kirby M.Eur Respir J. 2026 Mar 5;67(3):2500560. doi: 10.1183/13993003.00560-2025. Print 2026 Mar.PMID: 41360509

Supplementary info

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BMJ

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. 2026 Mar 5:392:e084521.

doi: 10.1136/bmj-2025-084521.

Prognostic score for predicting respiratory admissions among patients with chronic obstructive pulmonary disease in primary care: development and validation in population cohorts (Birmingham Lung Improvement Studies (BLISS))

Rachel E Jordan [1], Spencer J Keene [1 2 3 4 5], Frits M E Franssen [3 6], David Fitzmaurice [1], Nicola J Adderley [1 7], Andrew P Dickens [1 8], James T Martin [1], Alice J Sitch [9 7], Alexandra Enocson [1], Sue Jowett [1], Richard D Riley [1 7], Martin R Miller [1], Brendan G Cooper [10], Alice Turner [1], Kate Jolly [1 11], Jon G Ayres [1], Robert Stockley [10], Sheila Greenfield [1], Stanley Siebert [12], Amanda Daley [13], K K Cheng [1], Frank de Vries [2 3 6], Emiel F M Wouters [3 14 15], Peymane Adab [1]

Affiliations Expand

- PMID: 41786356

- DOI: 10.1136/bmj-2025-084521

Abstract

Objective: To predict the two year risk of respiratory admission to hospital among individuals with chronic obstructive pulmonary disease (COPD), with the development and validation (internal and external) of a prognostic score.

Design: Model development and validation in population cohorts.

Setting: Birmingham Lung Improvement Studies (BLISS) cohort of new and existing patients with COPD in primary care (model development and internal validation); Evaluation of COPD Longitudinally to Identify Predictive Surrogate Endpoints (ECLIPSE) international cohort and UK primary care Clinical Practice Research Datalink (CPRD) Aurum database linked with Hospital Episode Statistics (external validation).

Participants: 1894 patients with new and existing COPD from BLISS cohort; 1749 patients with moderate to very severe COPD from ECLIPSE cohort; 27 340 patients with COPD from CPRD Aurum database linked with Hospital Episode Statistics.

Main outcome measures: One or more respiratory admissions within two years of cohort entry for development, internal validation, and external validation in CPRD; severe exacerbation within two years for external validation in ECLIPSE cohort. The model was developed from 23 candidate predictors by using multivariable logistic regression with bootstrapping for internal validation and adjustment for overfitting and optimism. Discrimination and calibration were assessed at each stage. Net benefit of the score (clinical utility) was examined across a range clinically relevant risk thresholds compared with use of individual score components. Subgroup and sensitivity analyses were conducted in the CPRD. The BLISS score was directly compared with the Bertens' score in the ECLIPSE cohort. Clinical implementation was explored with relevant stakeholders.

Results: Six predictors were retained (age, COPD Assessment Test score, respiratory admissions in the previous 12 months, body mass index, diabetes, forced expiratory volume in 1 second % predicted) to form the BLISS score for estimating an individual's two year risk of respiratory admission. The score had similar discrimination performance on internal validation (optimism adjusted C statistic 0.73 (95% confidence interval 0.70 to 0.77)) and external validation (ECLIPSE: C=0.73 (0.71 to 0.76); CPRD: C=0.71 (0.70 to 0.72)) and good calibration performance in the BLISS (slope=0.87 (95% confidence interval 0.73 to 1.02), CPRD (0.89 (0.85 to 0.93)), and ECLIPSE (0.92 (0.79 to 1.05) cohorts). Stratified analysis in the CPRD cohort showed that it was robust in different population subgroups. Net benefit analyses showed superiority of the BLISS score over individual predictors and the Bertens' score (C=0.68 (0.65 to 0.71); calibration slope 0.68 (0.56 to 0.81)).

Conclusions: The BLISS score showed good performance in estimating individual risk of respiratory admission (within two years) in cohorts containing patients from different settings and geographical locations and with different severities of COPD. Four of the included six variables are readily available in primary care records, and two are partially available but easy to collect. Impact evaluations are now needed to fully study use of the score in clinical care.

Study registration: ECLIPSE ClinicalTrials.gov NCT00292552.

Conflict of interest statement

Competing interests: All authors have completed the ICMJE uniform disclosure form at https://www.icmje.org/disclosure-of-interest/ and declare: AS has received grants from NIHR Birmingham BRC during the conduct of the study and grants from Astra Zeneca outside the submitted work; REJ has received grants from NIHR outside the submitted work and travel and conference fees from the IPCRG and COPD UK; KJ has received grants from NIHR outside the submitted work and was a sub-panel chair of the NIHR Programme Grants for Applied Health Research (2018-2023); PA has received grants from NIHR outside the submitted work, was chair of the NIHR PHR Funding Committee (2019-24), is a member of several other funding boards, and is an NIHR senior investigator; RAS is a member of the GOLD Scientific Committee, serves on the steering committee of CSL Behring, Vertex, Grifols, Mereobiopharma, Inhibrx, and GSK, is chair of the Takeda DSMB, and serves on the Aramata DSMB; BGC is a member of the Global Lung Initiative Committee, which promotes the used of “lower limit of normal” and not using “fixed ratio of FEV1/FVC” values in spirometry on the basis of robust scientific evidence; AT has received grants from NIHR during the conduct of the study and grants and non-financial support from AstraZeneca, grants and non-financial support from Chiesi, personal fees from GSK, grants and personal fees from CSL Behring, grants from ResMed, and grants from Phillips outside the submitted work; FMEF has received research grants from AstraZeneca not related to the current projects and personal fees for consultancies and lectures from AstraZeneca, Chiesi, GSK, Pfizer, Sanofi, and Verona Pharma; AD is supported by an NIHR research professorship award; RDR is an NIHR senior investigator and is supported by the NIHR Birmingham BRC at the University Hospitals Birmingham NHS Foundation Trust and the University of Birmingham; AMT is funded by the NIHR Midlands Patient Safety Research Collaborative; NJA has received grants from NIHR outside the submitted work; SJ

has received grants from NIHR outside the submitted work; no other relationships or activities that could appear to have influenced the submitted work.

Supplementary info

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Semin Respir Crit Care Med

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. 2026 Mar 5.

doi: 10.1055/a-2779-5052. Online ahead of print.

Nonpharmacological Strategies to Improve Stability and Prevent Exacerbations of COPD

Michele Vitacca [1], Nicolino Ambrosino [2]

Affiliations Expand

- PMID: 41786312

- DOI: 10.1055/a-2779-5052

Abstract

Exacerbations of chronic obstructive pulmonary disease (ECOPD) are the main cause of hospitalization, mortality, and progressive worsening in health-related quality of life (HRQL). Each ECOPD speeds functional decline, making these individuals increasingly susceptible to further infections. Therefore, we need strategies to prevent ECOPD and maintain disease stability as long as possible. In addition to medications, lifestyle interventions aimed at promoting vaccinations and avoiding smoking, minimizing exposure to environmental pollutants, encouraging physical activity, addressing obesity and malnutrition, along with empowering individuals through disease awareness and self-management, may improve stability and HRQL and reduce ECOPD rate. Although long-term oxygen therapy is known to enhance survival, its broader utility in curtailing healthcare utilization requires further clarification. Home noninvasive ventilation (NIV) and the more recently

introduced high-flow nasal cannula may reduce the need for hospitalization and mortality in individuals with stable chronic hypercapnia. Long-term NIV should be initiated after ECOPD is successfully treated and set to reduce hypercapnia. Telemedicine programs may be potentially useful, but their effectiveness and safety in real life have to be confirmed.

Conflict of interest statement

The authors declare that they have no conflict of interest.

Full text links

Cite

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BMC Pulm Med

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. 2026 Mar 4.

doi: 10.1186/s12890-026-04216-z. Online ahead of print.

Outcomes of beta-blocker use in people living with chronic obstructive pulmonary disease and a co-existent beta-blocker indicated cardiovascular disease. Insights from a global federated network

Mert Kaşkal [1 2], Tommaso Bucci [1 3], Dennis Wat [1 4], Dilip Nazareth [1 4], Gregory Y H Lip [5 6 7], Freddy Frost [1 4]

Affiliations Expand

- PMID: 41782097

- DOI: 10.1186/s12890-026-04216-z

Free article

Abstract

Background: Beta-blockers (BBs) are a cornerstone of the management of cardiovascular diseases (CVD) such as heart failure with reduced ejection fraction (HFrEF), acute myocardial infarction (AMI), and atrial fibrillation (AF). Their use in patients with co-existing chronic obstructive pulmonary disease (COPD) remains

controversial due to concerns about potential bronchoconstriction and respiratory side effects. This study aimed to assess the safety and effectiveness of BBs in patients with COPD and co-existing cardiovascular conditions using real-world data.

Methods: We conducted a retrospective, propensity score-matched analysis using the TriNetX global federated research network. Patients with a diagnosis of both COPD and CVD (HFrEF, AMI, or AF) between January 2010 and January 2023 were included. Outcomes assessed over a one-year follow-up included all-cause mortality (primary outcome), emergency admissions (EA), and acute exacerbations of COPD (AECOPD). Subgroup analyses were conducted based on cardiovascular indication, BB selectivity, sex, and age group.

Results: A total of 394,476 patients were included; 241,837 were BB users and 152,639 were non-users. After propensity score matching (n = 103,249 per group), there was no significant difference in mortality (HR: 0.98, 95% CI: 0.94-1.02). BB use was associated with an increased risk of EA (HR: 1.30, 95% CI: 1.22-1.40) and a modest increase in AECOPD (HR: 1.03, 95% CI: 1.02-1.04). Findings were consistent across subgroups.

Conclusion: In people with COPD and a cardiac indication for BB use, the use of BBs was not associated with mortality benefit but was associated with a modest increased risk of AECOPD and a pronounced risk of increased EA.

Clinical trial registration: Not applicable. This study is not a clinical trial; therefore, no trial registry, registration number, or registration date is required.

Keywords: Beta-blockers; Cardiovascular disease; Chronic obstructive pulmonary disease.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study was conducted using data from the TriNetX Research Network, a global federated health research network that provides access to fully de-identified patient data. All data available through TriNetX are anonymized in compliance with the Health Insurance Portability and Accountability Act (HIPAA) and the General Data Protection Regulation (GDPR). As this study involved the analysis of pre-existing, de-identified data with no possibility of patient re-identification and no direct interaction with human participants, it does not constitute human subjects research. Therefore, ethical approval and informed consent were not required, in accordance with national and international regulations (including U.S. 45 CFR §46). All methods were carried out in accordance with the ethical principles of the Declaration of Helsinki. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- **30 references**

Full text links

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Cite

13

BMC Med

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. 2026 Mar 4.

doi: 10.1186/s12916-026-04754-7. Online ahead of print.

The role of COPD and inhaled corticosteroids in major adverse cardiovascular events in cardiovascular-kidney-metabolic populations

Anne E Ioannides [1], Emily L Graul [2 3], Constantinos Kallis [2], Upasana Tayal [4 5 6], Hana Müllerová [7], Jennifer K Quint [2]

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Free article

Abstract

Background: Cardiovascular-kidney-metabolic (CKM) disease and chronic obstructive pulmonary disease (COPD) are associated with major adverse cardiovascular events (MACE). Whether COPD further increases MACE risk within CKM populations, and whether this potential risk is modifiable through inhaled corticosteroids (ICS), is unknown. Within CKM populations, we investigated the relationship between (1) COPD and subsequent MACE, and (2) amongst concurrent CKM-COPD populations, we investigated the relationship between ICS and subsequent MACE.

Methods: We used Clinical Practice Research Datalink (CPRD) Aurum, Hospital Episode Statistics and Office of National Statistics data, between January 1st, 2010, and March 29th, 2021. We created five discrete cohorts: chronic kidney disease (CKD), type-II diabetes mellitus (T2DM), obesity, MACE history, and older adults (aged ≥ 65 years old ["Age65 + "]). CKD, T2DM, obesity, and Age65 + cohorts were MACE-naïve at the time of inclusion. Aim (1) exposures were (a) COPD, (b) incident COPD, and (c) being at risk of COPD without diagnosis (defined as age ≥ 40 years old, smoking history, no evidence of asthma, and frequent respiratory infections requiring antibiotics). Aim (2) exposure was ICS prescription (control group: long-acting bronchodilators). The outcome was MACE (acute coronary syndrome,

arrhythmia, heart failure, ischaemic stroke, or cardiovascular-specific mortality). We implemented Cox proportional hazards models.

Results: COPD was associated with MACE amongst all cohorts, but was comparatively weak in the MACE history cohort (cohort total; adjusted hazard ratio [95% confidence interval]): CKD (N = 573,626; 1.29 [1.26, 1.32]), T2DM (N = 649,506; 1.30 [1.26, 1.35], obesity (N = 225,273; 1.41 [1.34, 1.48]), MACE history (N = 507,889; 1.04 [1.02, 1.06]), and Age65 + (N = 592,123, 1.59 [1.52, 1.66]). Incident COPD was associated with subsequent MACE in CKD only (1.28 [1.13, 1.45]). Being at risk of COPD was associated with subsequent MACE in CKD (1.18 [1.07, 1.30]), MACE history (1.16 [1.08, 1.25]), and Age65 + (1.28 [1.13, 1.46]). ICS prescription was not associated with subsequent MACE in any concurrent CKM-COPD cohort.

Conclusions: COPD was an independent risk factor for MACE in CKM populations. ICS did not attenuate MACE amongst CKM-COPD groups. Incident COPD was associated with MACE in CKD, and being at risk of COPD was associated with MACE in CKD, MACE history, and Age65 + cohorts.

Keywords: COPD; Cardiometabolic; Cardiovascular-kidney-metabolic syndrome; ICS; MACE.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: 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 Sect. 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: 22_002514) and the approved protocol is available upon request. Linked pseudonymised data was provided for this study by CPRD. Data is 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. Further information on availing data is available in Additional file 1. Consent for publication: No individual-level data is available within this publication; all data are summary statistics. In addition, CPRD policy dictates that no table cell may report fewer than five events to protect participants' identities. Competing interests: Mixed competing interests: All authors have completed the ICMJE uniform disclosure form at http://www.icmje.org/disclosure-of-interest/and declare: AEl has received institutional grants from the British Heart Foundation (BHF). ELG has nothing to disclose. CK has nothing to disclose. UT is supported by research grants from the Medical Research Council, Royal Society and NIHR Imperial Biomedical Research Centre. UT is a freelance research editor at the British Medical Journal. HM is an employee of AstraZeneca and owns shares and stock options of AstraZeneca. JKQ has been supported by institutional research grants from the Medical Research Council, NIHR, Health Data Research, GSK, BI, AZ, Insmed, Sanofi and received personal fees for advisory board participation, consultancy or speaking fees from

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- 49 references

Supplementary info

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Inflammatory Response in Exacerbations of COPD: Clinical and Predictive Roles of C-Reactive Protein

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Abstract

Acute exacerbations of chronic obstructive pulmonary disease (ECOPD) are pivotal events that accelerate lung function decline, impair quality of life, and increase the risk of hospitalization and mortality. Beyond episodic airway deterioration, ECOPD should be conceptualized as a systemic inflammatory syndrome driven by dysregulated responses to infectious or environmental triggers. Among inflammatory biomarkers, C-reactive protein (CRP) is the most extensively studied in ECOPD because of its rapid kinetics, wide availability, and clinical accessibility. This narrative review aims to summarize the diagnostic, therapeutic, and prognostic role of CRP in ECOPD. CRP levels rise sharply during exacerbations, particularly in pneumonic events, supporting diagnostic stratification and differentiation from non-bacterial or eosinophilic phenotypes. When integrated with clinical assessment,

CRP improves diagnostic accuracy and informs antibiotic stewardship; CRP-guided strategies have been shown to reduce unnecessary antibiotic use without compromising clinical outcomes. Elevated CRP at presentation is associated with greater exacerbation severity, increased need for ventilatory support, and longer hospital stay. Persistently elevated CRP at discharge is linked to early relapse and readmission, while higher levels have also been associated with thromboembolic and cardiovascular risk, highlighting the systemic consequences of ECOPD. Despite these advantages, CRP is inherently nonspecific, influenced by comorbidities and timing of measurement, and optimal thresholds vary across clinical settings. CRP is a robust and accessible biomarker that provides valuable diagnostic, therapeutic, and prognostic information in ECOPD. Its incorporation into routine clinical practice can improve patient stratification, support antibiotic stewardship, and enhance monitoring of individuals at high risk of adverse outcomes. Future advances are likely to rely on longitudinal interpretation of CRP and its integration into multimarker panels and predictive models, combined with clinical variables and digital health data, to enable phenotype-driven management and precision medicine approaches in ECOPD.

Conflict of interest statement

The authors declare that they have no conflict of interest.

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Eur Respir J

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Computed tomography total vessel count and vessel count percentages: associations with exercise capacity, symptoms and rapid FEV_1 decline in COPD

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Abstract

Background: Existing computed tomography (CT) vascular pruning measures rely on volumes, such as the proportion of blood volume in vessels with cross-sectional area (CSA) ≤5 mm^2 or CSA ≤10 mm^2/total blood vessel volume (BV5/TBV or BV10/TBV, respectively), but may underestimate vascular pruning due to blood redistribution to larger vessels in individuals with milder COPD. We aim to develop a novel CT vessel measure, the total vessel count (TVC), quantify small and combined small/intermediate vessel count percentages, and compare these measures with BV5/TBV and BV10/TBV in terms of associations with lung function and its decline. As a secondary aim, associations with exercise capacity and COPD symptoms will be investigated.

Methods: CanCOLD (Canadian Cohort Obstructive Lung Disease) participants underwent CT imaging. BV5/TBV and BV10/TBV were generated using vessel segmentation. TVC and small (CSA ≤5 mm^2, $VC_{\leq 5}$/TVC) and combined small/intermediate (CSA ≤10 mm^2, $VC_{\leq 10}$/TVC) vessel count percentages were calculated. Fully adjusted regression models assessed associations with forced expiratory volume in 1 s (FEV_1), FEV_1/forced vital capacity (FVC), diffusing capacity of the lung for carbon monoxide (D_{LCO}), accelerated FEV_1 decline over 3 years, peak oxygen uptake ($\dot{V}_{O2\ peak}$), 6-min walk distance (6MWD) and Medical Research Council (MRC) dyspnoea scale.

Results: 1254 CanCOLD participants were investigated. TVC, $VC_{\leq 5}$/TVC and $VC_{\leq 10}$/TVC were associated with FEV_1/FVC ($p<0.05$), D_{LCO} ($p<0.05$) and FEV_1 decline ($p<0.05$); $VC_{\leq 10}$/TVC was associated with $\dot{V}_{O2\ peak}$ ($p<0.05$), and both $VC_{\leq 5}$/TVC and $VC_{\leq 10}$/TVC were associated with MRC ($p<0.05$). BV5/TBV and BV10/TBV were only associated with 6MWD ($p<0.05$) and MRC ($p<0.05$).

Conclusion: Pulmonary vessel count percent, a measure of vasculature narrowing/loss, is associated with lung function and its decline, reduced exercise capacity, and increased symptoms in COPD.

Conflict of interest statement

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

Comment in

- The vascular fingerprint of the lungs: why pulmonary vessel count matters in COPD.

Dwivedi K, Sin DD, Diaz AA.Eur Respir J. 2026 Mar 5;67(3):2502649. doi: 10.1183/13993003.02649-2025. Print 2026 Mar.PMID: 41786489 No abstract available.

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Mortality in severe asthma: results from the NORDSTAR cohort

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Abstract

Background: Longitudinal data addressing the impact of asthma severity on mortality are lacking. We aimed to explore all-cause and cause-specific mortality according to asthma severity.

Methods: The present registry-based cohort study is based on Danish data from the NORdic Dataset for aSThmA Research (NORDSTAR) research collaboration platform. Adult patients with severe asthma were matched on age and sex to 10 patients with mild-to-moderate asthma and followed from 2000 to 2020. Patients with COPD diagnosed prior to inclusion were excluded. Absolute and relative measures of all-cause and cause-specific mortality were compared between severe and mild-to-moderate asthma.

Results: We included 11 881 and 118 810 patients with severe and mild-to-moderate asthma, respectively. All-cause mortality was significantly higher in patients with severe asthma compared to patients with mild-to-moderate asthma, both in absolute measures of the cumulative mortality (34% (95% CI 32-35%) *versus* 20% (95% CI 19-

20%); p<0.001) after 20 years of follow-up and in relative measures (hazard ratio (HR) 1.99, 95% CI 1.90-2.09; p<0.001). The HR of all-cause mortality was attenuated after adjustment for oral corticosteroid (OCS) use (HR 1.30, 95% CI 1.23-1.37; p<0.001) and type 2 (T2) inflammatory markers (HR 1.34, 95% CI 1.09-1.64; p<0.001). The increased cumulative mortality risk was mainly due to respiratory diseases (12.6% (95% CI 11.7-13.6%) *versus* 3.3% (95% CI 3.2-3.5%); p<0.001), with cancer (7.5% (95% CI 6.8-8.3%) *versus* 5.9% (95% CI 5.7-6.2%); p<0.001) and cardiovascular diseases (4.7% (95% CI 4.1-5.3%) *versus* 3.8% (95% CI 3.6-4.0%); p<0.001) also contributing. Although rare, the relative risk of asthma-related deaths was three-fold in severe asthma patients (HR 2.95, 95% CI 2.08-4.18; p<0.001).

Conclusions: In this nationwide cohort, severe asthma was associated with a significantly higher mortality risk compared to mild-to-moderate asthma. The increased risk was primarily driven by respiratory-related deaths, with OCS use and T2 inflammation as contributing mortality risk factors.

Conflict of interest statement

Conflict of interest: S. Hansen reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca and GSK. A. von Bülow reports grants from AstraZeneca, GSK and Sanofi, consultancy fees from Novartis and AstraZeneca, payment or honoraria for lectures, presentations, manuscript writing or educational events from Novartis, GSK and AstraZeneca, support for attending meetings from AstraZeneca, and participation on a data safety monitoring board or advisory board with AstraZeneca, GSK and Novartis. A. Cooper reports support for the present study from AstraZeneca, GSK, Sanofi, Bispebjerg Hospital and Quantify Research, and is an employee of Quantify Research. P. Sandin reports support for the present study from AstraZeneca, GSK, Sanofi, Bispebjerg Hospital and Quantify Research, and is an employee of Quantify Research. O. Ernstsson reports support for the present study from AstraZeneca, GSK, Sanofi, Bispebjerg Hospital and Quantify Research, and is an employee of Quantify Research. H. Kankaanranta reports consultancy fees from AstraZeneca, Chiesi Pharma, Covis Pharma, GSK, MSD, Orion Pharma and Sanofi, and payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, GSK, Novartis, Orion Pharma and Sanofi. C. Janson reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Chiesi, GSK, Orion and Sanofi. L. Lehtimäki reports payment or honoraria for lectures, presentations, manuscript writing or educational events from ALK, AstraZeneca, Chiesi, Berlin-Chemie, Boehringer Ingelheim, GSK, Menarini, Novartis, Orion and Sanofi. B.B. Aarli reports consultancy fees from AstraZeneca and Grifols, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, GSK, Orion Pharma and Sanofi-Aventis, and participation on a data safety monitoring board or advisory board with AstraZeneca, GSK, Grifols, Orion Pharma, Celltrion Healthcare, Chiesi Pharma and Sanofi-Aventis. K. Geale is a board member and CEO of Quantify Research AB, has stock and stock options in Quantify Research AB and Athagoras Group, and reports payment or honoraria for lectures, presentations, manuscript writing or educational events from ISPOR. J. Hjoberg is employed by GSK as medical advisor. S. Packham was an employee at AstraZeneca

Sweden at the time of this study and reports stock or stock options with AstraZeneca and is a former employee at Teva Pharmaceutical. D. Sekulic is an employee at Sanofi and reports grants from Sanofi. A. Altraja reports grants from AstraZeneca, Boehringer Ingelheim and Berlin-Chemie Menarini, consultancy fees from AstraZeneca, Boehringer Ingelheim, GSK and Sanofi, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Berlin-Chemie Menarini, Boehringer Ingelheim, Norameda, CSL Behring, GSK, MSD, Novartis, Orion, Sanofi, Takeda, Teva and Zentiva, payment for expert testimony from AstraZeneca, Boehringer Ingelheim, GSK, Sanofi and CSL Behring, support for attending meetings from AstraZeneca, Berlin-Chemie Menarini, Boehringer Ingelheim, Norameda, Sanofi, CSL Behring, Novartis, Takeda and Teva, participation on a data safety monitoring board or advisory board with AstraZeneca, Boehringer Ingelheim, GSK, Sanofi and CSL Behring, a leadership role with the Estonian Respiratory Society, and receipt of equipment, materials, drugs, medical writing, gifts or other services from Berlin-Chemie Menarini and AstraZeneca. H. Backman reports participation on a data safety monitoring board or advisory board with Chiesi. J. Karjalainen reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, MSD, Novartis and Orion Pharma, and participation on a data safety monitoring board or advisory board with GSK, MSD and Sanofi. A. Sverrild reports grants from AstraZeneca, payment or honoraria for lectures, presentations, manuscript writing or educational events from GSK, Sanofi and AstraZeneca, support for attending meetings from AstraZeneca, and participation on a data safety monitoring board or advisory board with GSK, Sanofi, Celltrion and AstraZeneca. V. Backer reports no conflicts of interest. P. Kauppi reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca and Sanofi, leadership roles with the Finnish Respiratory Society and the Finnish Anti-Tuberculosis Association, and is a co-investigator for MSD. V. Yasinska reports grants from AstraZeneca, payment or honoraria for lectures, presentations, manuscript writing or educational events from speaker fees from AstraZeneca, Sanofi and GSK, and participation on a data safety monitoring board or advisory board with AstraZeneca and GSK. C. Porsbjerg reports grants from AstraZeneca, GSK, Sanofi, Novartis, ALK-Abelló and Chiesi, consultancy fees from ALK-Abelló, AstraZeneca, Chiesi, GSK, Novartis and Sanofi, and payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, GSK, Sanofi, Novartis, ALK-Abelló and Chiesi. C.S. Ulrik reports grants from AstraZeneca, Boehringer Ingelheim and Sanofi Genzyme, consultancy fees from AstraZeneca, Boehringer Ingelheim, GSK and Sanofi Genzyme, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Berlin-Chemie, Boehringer Ingelheim, Novartis, GSK, Sanofi Genzyme, Teva, Orion Pharma, TFF Pharmaceuticals, Pfizer, Covis Pharma, Chiesi, Takeda, Hikma Pharmaceuticals, Novo Nordisk and Roche, participation on a data safety monitoring board or advisory board with AstraZeneca, Boehringer Ingelheim, GSK, Sanofi Genzyme, Teva, Chiesi, Pfizer and TFF Pharmaceutical, and a leadership role with the European Respiratory Society. A. Bossios reports grants from AstraZeneca, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, GSK and Chiesi, participation on a data safety monitoring board or advisory board with AstraZeneca and GSK, and leadership roles with the European Respiratory Society, Nordic Severe Asthma Network, SHARP steering committee and Swedish National Airway Register.

Comment in

- Severe asthma: an indirect, subtle killer.

Soriano JB, Pérez de Llano LA.Eur Respir J. 2026 Mar 5;67(3):2502402. doi: 10.1183/13993003.02402-2025. Print 2026 Mar.PMID: 41786491 No abstract available.

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Observational Study

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Effects of glucocorticoid administration routes on patients with acute exacerbations of chronic obstructive pulmonary disease in China: A propensity score-matched longitudinal analysis

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Abstract

Background: Glucocorticoids are widely used for managing acute exacerbations of chronic obstructive pulmonary disease (AECOPD); however, limited studies have described the comparative effectiveness of inhaled corticosteroids (ICS), systemic corticosteroids administered orally or intravenously (oral/intra), and a combination of ICS and oral/intra for AECOPD treatment in China. Thus, we aimed to explore the

effects of different glucocorticoid administration routes during hospitalization on both short- and long-term patient prognosis in AECOPD.

Methods: Data were collected from the Acute Exacerbations of Chronic Obstructive Pulmonary Disease Inpatient Registry study, a nationwide multicenter, prospective, observational study conducted in China from September 2017 to November 2021. The study involved 179 hospitals. The patients were categorized into three groups according to their treatment profiles as follows: (1) ICS alone, (2) ICS combined with oral/intra, and (3) oral/intra. Propensity score-matching was utilized to minimize potential bias, using a caliper value <0.1. Competing risk models were used to calculate the relative risks for short- (30 days) and long-term (12 months) severe exacerbations, COPD-specific readmission, and all-cause readmission.

Results: After propensity score matching, each group included 572 patients. In the ICS group, the cumulative incidence of short-term severe exacerbations, COPD-specific readmission, and all-cause readmission was 2.4%, 2.2%, and 2.7%, respectively, which was comparable to that in the ICS + oral/intra group (3.7%, 3.4%, and 4.2%, respectively). However, the incidence in the ICS + oral/intra group was significantly lower than that in the oral/intra group (5.4% for short-term severe exacerbations, 5.2% for COPD-specific readmission, and 5.7% for all-cause readmission). The 12-month incidence did not significantly differ among the groups. Compared with the ICS group, the short- or long-term risks did not differ in the ICS + oral/intra group, whereas the short-term risk was higher in the oral/intra group (severe exacerbations: hazards ratio [HR] = 2.29, 95% confidence interval [CI]: 1.09-4.82; COPD-specific readmission: HR = 2.44, 95% CI: 1.12-5.30; and all-cause readmission: HR = 2.18, 95% CI: 1.07-4.45).

Conclusion: The use of systemic corticosteroids alone during hospitalization for AECOPD increases the short-term risk of outcomes but does not affect the long-term prognosis.

Register: ClinicalTrials.gov, https://clinicaltrials.gov/ ; NCT02657525.

Keywords: Acute exacerbation; COPD; Chronic obstructive pulmonary disease; Glucocorticoid; Propensity score-matched; Real-world study.

Conflict of interest statement

None.

- **25 references**
- **4 figures**

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Effect of exercise therapy and self-management support on multimorbidity: Secondary analysis of the MOBILIZE trial

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Abstract

Background: Multimorbidity is linked to systemic low-grade inflammation, poor glycaemic control, dyslipidaemia, and hypertension, yet evidence on effective interventions is limited. We evaluated the impact of a 12-week personalised exercise therapy and self-management support programme, in addition to usual care, on these outcomes in individuals with multimorbidity.

Methods: This was a pre-planned secondary analysis of the MOBILIZE multicentre randomised controlled trial (NCT04645732). Participants (n = 228) had at least two of the following conditions: knee/hip osteoarthritis, chronic obstructive pulmonary disease, heart disease, hypertension, type 2 diabetes, or depression. The intervention included 24 supervised 60-minute group-based exercise sessions and 24 self-management sessions over 12 weeks. Outcomes were assessed at baseline and 4 months, including interleukin-1 receptor antagonist (IL-1ra), high-sensitivity C-reactive protein (hs-CRP), tumour necrosis factor-alpha (TNF-α), interleukin-6 (IL-6), glycated Hemoglobin (HbA1c), fasting glucose, insulin, High-Density Lipoprotein (HDL), Low-Density Lipoprotein (LDL), triglycerides, and blood pressure.

Results: Compared to usual care, the intervention group shows a statistically significant reduction in systolic blood pressure (mean difference: -4.7 mmHg, 95% CI: -8.8 to -0.6). No significant between-group differences are observed for other biomarkers, although favouring the intervention. Sensitivity analyses-excluding

participants with low adherence, those receiving supervised exercise in the control group, or undergoing surgery-support the primary findings.

Conclusions: A 12-week personalised exercise and self-management programme reduces systolic blood pressure in people with multimorbidity. These findings support incorporating exercise therapy into multimorbidity care guidelines as a non-pharmacological adjunct.

Plain language summary

We studied whether adding exercise and self-management support to usual care helps people with multiple long-term conditions. In this trial, participants followed a 12-week programme with supervised exercise and self-management group sessions. We found that the programme lowered blood pressure compared to usual care alone. However, it did not significantly change other health markers like blood sugar, cholesterol, or inflammation. These results suggest that exercise therapy may be a helpful addition to care for people with multiple long-term conditions, especially for managing blood pressure. It also highlights the need for more research on exercise therapy for this complex group.

Conflict of interest statement

Competing interests: S.T.S. is the co-founder of Good Life with Osteoarthritis in Denmark (GLA:D®), a non-profit initiative hosted at the University of Southern Denmark. This initiative aims to implement clinical guidelines, including exercise and self-management support, for individuals with osteoarthritis in clinical practice. The authors affirm that they have no other competing interests.

- **50 references**

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Mayo Clin Proc

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Accelerometer-Derived Physical Activity Associated With Incidence and Progression Trajectory of Cardiometabolic Multimorbidity

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Abstract

Objective: To examine the associations between physical activity (PA) and the transition from healthy status to first cardiometabolic disease (FCMD), subsequently to cardiometabolic multimorbidity (CMM), and further to death.

Patients and methods: Objectively measured PA was derived from wrist-worn accelerometer data collected during 7 days in a separate cohort of 59,161 participants during 2013 to 2015. Cardiometabolic multimorbidity was defined as the occurrence of at least 2 cardiometabolic diseases including type 2 diabetes, ischemic heart disease, and stroke. Multistate models were used to examine the impact of PA on the incidence and progression trajectory of CMM.

Results: During a median 7.9 years of follow-up, FCMD developed in 4074 individuals, CMM developed in 295, and 2893 died in the accelerometer-derived cohort. Performing guideline-adherent moderate-intensity physical activity (MPA; 150-300 min/wk) was related to a 29% lower risk of FCMD (hazard ratio [HR], 0.71 [0.62 to 0.81]) and a 40% lower risk of CMM (HR, 0.60 [0.39 to 0.93]). The strength of the association of MPA with the transition from healthy baseline to FCMD was greater than that of the transition from FCMD to CMM, with HRs (95% CIs) per 244.7 min/wk increase of 0.75 (0.71 to 0.80) and 0.92 (0.87 to 0.98), respectively. On dividing FCMD into 3 specific cardiometabolic diseases, there were comparable trends of MPA on the disease-specific transitions from healthy baseline to FCMD and subsequent CMM.

Conclusion: Physical activity played comparable roles in transitions from healthy baseline to FCMD and then to CMM. These findings suggest that improving PA is a potential strategy for preventing CMM development.

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Multimorbidity in the Brazilian adult population: Protocol for a systematic review and meta-analysis of prevalence

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- DOI: 10.1371/journal.pone.0343166

Abstract

Multimorbidity (MM), defined as the co-occurrence of multiple chronic conditions in a single individual, poses a major challenge to health systems. Its consequences include higher morbidity and mortality rates, reduced quality of life, and increased healthcare costs. Despite its substantial public health burden, no systematic reviews have comprehensively assessed the pooled prevalence of MM in Brazil. This manuscript outlines a protocol for a systematic review and meta-analysis aimed at estimating the prevalence of MM among community-dwelling adults in Brazil. We will conduct a systematic review and meta-analysis of population-based studies reporting MM prevalence in community settings. A comprehensive search will be performed in PubMed, Scopus, Web of Science, Embase, LILACS, and SciELO databases. Two independent reviewers will screen articles, assess study quality using the Joanna Briggs Institute (JBI) Checklist for prevalence studies, and extract data. For the meta-analysis, pooled estimates will be calculated using random-effects models with Restricted Maximum Likelihood (REML) estimators to account for between-study variability. Heterogeneity will be assessed using the I^2 statistic and Cochran's Q test. Subgroups analyses (e.g., age group, sex, region, and study type) will be conducted where feasible. Findings will be reported following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The protocol is registered with the International Prospective Register of Systematic Reviews (CRD42024389106). This review will provide comprehensive evidence on MM prevalence in Brazil, identifying the burden of this problem for future research and informing public health strategies.

Conflict of interest statement

The authors have declared that no competing interests exist.

- 46 references
- 1 figure

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4

Expert Opin Drug Saf

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. 2026 Mar 4:1-5.

doi: 10.1080/14740338.2026.2640982. Online ahead of print.

GLP-1 receptor agonists in older people with type 2 diabetes: safety evidence from the real world

Marella Marassi [1], Gian Paolo Fadini [1 2]

Affiliations Expand

- PMID: 41773040

- DOI: 10.1080/14740338.2026.2640982

Abstract

Introduction: GLP-1 receptor agonists (GLP-1RA) are glucose- and body weight-lowering therapies provided with cardio-renal benefits. Use of GLP-1RA in older adults with type 2 diabetes mellitus (T2DM) is increasing but concerns remain about their safety in this age group, particularly in light of multimorbidity, frailty, and polypharmacy, as well as age-related vulnerability to adverse events (AEs).

Areas covered: We discuss the opportunities and challenges of GLP-1RA in older people with T2DM, focusing on real-world (RW) safety evidence. Available RW studies confirm the established GLP-1RA safety profile, with AEs in 10-30% of older

users, predominantly gastrointestinal and mild-to-moderate in severity. Age-stratified analyses provide mixed results on AE susceptibility, but discontinuation due to intolerance appears more frequent in older adults. Weight loss is preserved across age groups, with no consistent evidence of harmful unintended reductions. However, the effects on muscle mass and sarcopenia risk remain largely unexplored.

Expert opinion: Current RW evidence supports GLP-1RA as a safe therapeutic option for older individuals with T2DM, without age-specific safety signals. Clinical phenotype-driven selection is essential to balance benefits and risks, particularly regarding nutritional status and frailty. Prospective, phenotype-stratified studies with body composition assessment are needed to guide optimal, individualized use in aging populations.

Keywords: Diabetes; incretin; older; sarcopenia; weight.

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J Am Heart Assoc

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. 2026 Mar 3;15(5):e040612.

doi: 10.1161/JAHA.124.040612. Epub 2026 Feb 24.

Multimorbidity in Atrial Fibrillation: Impact on Outcomes

Sheila M Manemann [1], Alvaro Alonso [2], Peter A Noseworthy [3], Konstantinos C Siontis [3], Bernard J Gersh [3], Véronique L Roger [1 4], Euijung Ryu [1], Jill M Killian [1], Susan A Weston [1], Lisa E Vaughan [1], Alanna M Chamberlain [1 3]

Affiliations Expand

- PMID: 41733064

- DOI: 10.1161/JAHA.124.040612

Free article

Abstract

Background: Multimorbidity is common in patients with atrial fibrillation (AF); however, the impact of the number and type of comorbid conditions on outcomes remains uncertain.

Methods: This cohort study included patients with new-onset AF from a Midwest region between 2013 and 2017. Eighteen chronic conditions at the time of AF were classified into groups: cardiometabolic, other somatic, and mental health. Cox regression determined associations between the number of each condition type with death, ischemic stroke/transient ischemic attack, and congestive heart failure, stratified by age.

Results: Among 16 509 patients with AF (mean age, 74 years; 43% women), the mean number of cardiometabolic, other somatic, and mental health conditions was 2.7, 1.4, and 0.5, respectively. The number and type of conditions had a varying impact on outcomes and differed by age. A higher number of cardiometabolic conditions were associated with increased risk of death within 90 days only in people aged ≥85 years (≥4 conditions versus 0: hazard ratio [HR], 1.74 [95% CI, 1.05-2.87]), whereas for death after 90 days, associations were strongest in the youngest age group (<65 years: HR, 1.83 [95% CI, 1.35-2.46]; 65-74 years: HR, 1.34 [95% CI, 1.04-1.73]; 75-84 years: HR, 1.32 [95% CI, 1.09-1.60]; ≥85 years: HR, 1.14 [95% CI, 0.96-1.35]). Associations with outcomes were generally strongest in the youngest age group and attenuated with older age for higher number of other somatic conditions, whereas the pattern was less consistent for mental health conditions.

Conclusions: Along with cardiometabolic-related conditions, other somatic and mental health conditions are important predictors of outcomes in AF, with effects differing by age, and should be considered when caring for these patients.

Keywords: atrial fibrillation; chronic conditions; multimorbidity; outcomes.

Ridho Al Izzati [1], Eduwin Pakpahan [1]

Affiliations Expand

- PMID: 40512660

- DOI: 10.1093/aje/kwaf129

Abstract

Multimorbidity has become a global public health concern, yet cross-national comparisons remain limited, especially in longitudinal settings. This study investigates the longitudinal patterns and transitions of multimorbidity status of people over age 50 in 34 countries. Utilizing comparable health indicators across countries, we examine chronic health conditions (hypertension and diabetes), cognitive function, physical ability, and self-report of general health. Using latent transition analysis, we identify a pattern of multimorbidity and classify it into three classes: mild, moderate, and severe multimorbidity. Mild multimorbidity is characterized by a lower prevalence of 3 morbidities out of 5, while severe multimorbidity is characterized by a higher prevalence across all health conditions. Moderate multimorbidity falls between these 2 extremes. Our findings reveal substantial variation in these classes across countries, with diabetes and hypertension emerging as the predominant condition among older adults with severe and moderate multimorbidity, respectively. Over time, both severe and moderate multimorbidity tend to increase, with similar transition probabilities from mild to more severe categories across countries. Covariate analysis indicates that men and low-educated individuals are more likely to experience severe multimorbidity. These results underscore the importance of understanding multimorbidity patterns and dynamics for effective public health planning and healthcare services. This article is part of a Special Collection on Cross-National Gerontology.

Keywords: cross-country comparisons; latent transition analysis; multimorbidity; older adults.

Supplementary info

Grants and fundingExpand

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

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NPJ Prim Care Respir Med

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. 2026 Mar 6.

doi: 10.1038/s41533-026-00497-3. Online ahead of print.

Asthma/COPD clinics increases adherence to management guidelines and associates with less morbidity and lower all-cause mortality - a prospective cohort study

Jenny Nilsson [1], Helena Backman [2], Johanna Karlsson Sundbaum [2], Viktor Strandkvist [3], Linnea Hedman [2], Caroline Stridsman [2]

Affiliations Expand

• PMID: 41792171

• DOI: 10.1038/s41533-026-00497-3

Abstract

In asthma, suboptimal disease control is common due to limited knowledge about self-management, undertreatment and infrequent follow-up visits. Most patients are treated in primary care where asthma/COPD clinics (ACC) are recommended in Sweden, but evidence of the effects is limited. The aim was to compare certified ACCs with clinics providing regular care in terms of adherence to asthma management guidelines, and the associations with asthma symptom control, healthcare consumption, and mortality in adults with asthma. In this cohort study, we extracted data from the Swedish National Airway Register, on 84230 adults with asthma, cared for at certified ACCs (n = 17 primary care centres) and regular care clinics (n = 650 primary care centres) in Sweden. Data were linked to other national registers in order to obtain data about pharmaceuticals, healthcare consumption, and mortality. The index date was the years 2015-2017, and the study ended in 2022. A binary logistic regression was used to assess morbidity and mortality associations at the study's end. A higher proportion of patients at certified ACCs received interventions such as patient education, written asthma action plan, smoking cessation, Asthma Control Test, spirometry, and inhaled corticosteroids than patients at regular care clinics. Certified ACCs were associated with a lower probability of uncontrolled asthma (OR 0.76, 95% CI 0.67-0.87), need of specialist/emergency care (OR 0.69, 95% CI 0.51-0.92) and death (OR 0.69, 95% CI 0.55-0.86). In conclusion, adherence to asthma management guidelines was higher in certified ACCs which were associated with a more well-controlled asthma, less secondary healthcare visits and lower all-cause mortality, but not with frequent exacerbations. Our findings highlight the importance of ACCs in providing evidence-based care in accordance with asthma management guidelines.

Conflict of interest statement

Competing interests: J.N., J.K.S., V.S., and L.H., reports no competing interests. H.B., reports personal fees for Advisory Board from Chiesi, outside the submitted

work.C.S., reports personal and institutional fees from AstraZeneca, Chiesi, GSK and TEVA for lectures and/or advisory boards, outside the submitted work.

- 55 references

Supplementary info

Grants and fundingExpand

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2

BMJ Open Respir Res

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. 2026 Mar 6;13(1):e003589.

doi: 10.1136/bmjresp-2025-003589.

Phase 2a randomised, double-blind, placebo-controlled study to evaluate the efficacy and safety of londamocitinib (AZD4604) two times per day for 12 weeks in adult patients with moderate-to-severe asthma uncontrolled on medium-high-dose ICS-LABA

Mohd Nubli Mustapa [1], Rod Hughes [2], Tina J Jensen [3], Davinder P Dosanjh [2 4], Kyriakos V Konstantinidis [5], Julia Jonsson [6], Szilárd Nemes [7], Zala Jevnikar [8], Michael Jones [9], Amanda Adams [10], Maria G Belvisi [11], Praveen Akuthota [12], Janwillem W H Kocks [13 14 15 16]

Affiliations Expand

- PMID: 41791844

- DOI: 10.1136/bmjresp-2025-003589

Abstract

Introduction: Asthma is a heterogeneous condition and affected individuals show variable responses to available medications. An unmet need exists for add-on therapies that target novel molecular pathways, before patients escalate to biologics. Janus kinase 1 (JAK1) is implicated in multiple inflammatory cytokine pathways critical for the pathogenesis of asthma. Londamocitinib (AZD4604) is a highly specific, inhaled, JAK1 inhibitor with high potency to block multiple JAK1-

dependent signalling pathways. AJAX is a phase 2a, randomised, double-blind, partially decentralised placebo-controlled study assessing the efficacy, safety and pharmacokinetics (PK) of londamocitinib in adults with moderate-to-severe asthma uncontrolled on medium-to-high-dose inhaled corticosteroid/long-acting β_2-agonist.

Methods and analysis: The primary endpoint is time to first CompEx Asthma event. Secondary endpoints include change from baseline in prebronchodilator forced expiratory volume in 1 s, chronic airways assessment test, six-item asthma control questionnaire, daily asthma symptom score, and morning and evening peak expiratory flow at weeks 4 and 12. In addition, assessment of the effect of londamocitinib on airway inflammation as measured by the fractional exhaled nitric oxide test; cough severity assessment; and the PK of londamocitinib in all participants after 4 and 12 weeks will also be evaluated.

Ethics and dissemination: The study has received ethical approval from the appropriate ethic committee and will be conducted in accordance with the Declaration of Helsinki, Good Clinical Practice guidelines, and all applicable regulatory requirements. All participants will provide written informed consent prior to enrolment, with procedures in place to ensure comprehension and voluntary participation. Findings will be disseminated through peer-reviewed publications and/or presentations at scientific conferences. Summary results will be posted on the trial registry and shared with participants and relevant patient groups in lay summaries.

Keywords: Asthma.

Conflict of interest statement

Competing interests: MNM, KVK, JJ, SN, TJJ and ZJ are employees of AstraZeneca and may hold shares in AstraZeneca. DPD is an employee of AstraZeneca and may hold shares in AstraZeneca. He has received a study grant from GlaxoSmithKline and an honorarium from Boehringer Ingelheim. He has participated in advisory boards conducted by Boehringer Ingelheim, AstraZeneca, Gilead and Synairgen. MJ, RH and MGB may hold shares in AstraZeneca. AA is a patient advisor for the study and received payment from AstraZeneca for this role. PA is the US national chief investigator for the study and his institution has received payment from AstraZeneca for this role. He also reports consulting fees from AstraZeneca (for separate projects), GlaxoSmithKline, Connect Biopharma, Amgen and Sanofi/Genzyme. JWHK is the international coordinating investigator for the study and received payment from AstraZeneca for this role. He reports grants from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Teva and Valneva. He reports receiving personal fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Teva, MSD, COVIS Pharma and ALK Albello. He also reports receiving non-financial support from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline and Mundi Pharma. JWHK holds <5% shares of Lothar Medtec GmbH and is owner of the General Practitioners Research Institute.

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Review

Biochim Biophys Acta Mol Cell Res

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. 2026 Mar 4:120127.

doi: 10.1016/j.bbamcr.2026.120127. Online ahead of print.

Thymic stromal lymphopoietin (TSLP) - pro-inflammatory cytokine and antimicrobial peptide

Katinka Döhner [1], Ojonugwa Precious John [2], Thomas Werfel [3]

Affiliations Expand

- PMID: 41791676

- DOI: 10.1016/j.bbamcr.2026.120127

Abstract

Thymic stromal lymphopoietin (TSLP) is a pleiotropic cytokine primarily produced by epithelial cells. It functions as a key regulator of immune responses, especially at barrier surfaces such as the skin, gut, and respiratory tract. Humans express two forms of TSLP: long-form TSLP (lfTSLP), which acts as a pro-inflammatory cytokine, and short-form TSLP (sfTSLP), which is an anti-inflammatory antimicrobial peptide. The long-form of TSLP is associated with the development of atopic diseases including bronchial asthma, allergic rhinitis, atopic dermatitis, and eosinophilic esophagitis. In addition, TSLP also plays a role in various inflammatory conditions, such as chronic obstructive pulmonary disease, inflammatory bowel disease, and rheumatoid arthritis, as well as neoplastic disorders including acute lymphoblastic leukemia, several lymphomas, and pancreatic and breast cancer. Tezepelumab, a therapeutic antibody that targets TSLP, has been approved for the treatment of severe asthma, and clinical trials are ongoing for other diseases, such as chronic obstructive pulmonary disease. In this review, we focus on the differences between lfTSLP and sfTSLP and the role of single-nucleotide polymorphisms in TSLP.

Keywords: Anti-inflammatory; Antimicrobial peptide; Atopic disease; Cytokine; Long-form thymic stromal lymphopoietin (lfTSLP); Pro-inflammatory; Short-form thymic stromal lymphopoietin (sfTSLP); Single-nucleotide polymorphism (SNP).

Conflict of interest statement

Declaration of competing interest The authors have nothing to declare.

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Review

Physiol Rev

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. 2026 Mar 6.

doi: 10.1152/physrev.00024.2025. Online ahead of print.

Fueling the Fire: Metabolic Dysfunction and Senescence as Drivers of Lung Aging and Disease

Corrine R Kliment [1 2], Aditi U Gurkar [1 3 4], Nayra Cárdenes [1], Richard Ramonell [5], Toren Finkel [1 3], Melanie Königshoff [1 6]

Affiliations Expand

- PMID: 41789983

- DOI: 10.1152/physrev.00024.2025

Abstract

With a rapidly expanding human population at advanced ages and age as the main driver for chronic diseases, we face the challenge of understanding tissue aging and devising new therapeutic interventions. Cellular senescence is an important hallmark of all aging tissues and has emerged as a potential key driver of chronic lung diseases, including pulmonary fibrosis, chronic obstructive pulmonary disease (COPD), and asthma. This comprehensive review recapitulates current knowledge of

pathways and processes involved in cellular senescence with emphasis on the role of mitochondrial dysfunction and the "4 Ms" (morphology, mitophagy, metabolism, and metabolites). We review our current knowledge of healthy lung aging, discuss which pathomechanisms in chronic lung disease are characterized by senescence, and summarize current target therapeutics and their impact on lung disease. Within this exponentially growing field, we propose emerging concepts and current gaps in knowledge which need to be addressed to develop better opportunities for therapeutic strategies and future investigations.

Keywords: Aging; Lung; Metabolism; Mitochondria; senescence.

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Case Rep Pulmonol

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. 2026 Mar 3:2026:6616379.

doi: 10.1155/crpu/6616379. eCollection 2026.

Effects of Tezepelumab in "United Airway Disease" (Asthma and CRSwNP)

Chiara Lupia [1], Giovanna Lucia Piazzetta [2], Daniela Pastore [1], Nadia Lobello [2], Mariaimmacolata Preianò [1], Emanuela Chiarella [2], Angelantonio Maglio [3], Alessandro Vatrella [3], Girolamo Pelaia [1], Corrado Pelaia [2]

Affiliations Expand

- PMID: 41788313
- PMCID: PMC12957772
- DOI: 10.1155/crpu/6616379

Abstract

Severe asthma is a heterogeneous disease typically characterized by inadequate symptom control, even with frequent oral corticosteroids, large doses of inhaled corticosteroids, and long-acting β_2-adrenergic agonists. The latest Global Initiative for Asthma (GINA) recommendations suggest adding biological therapies at Step 5 to optimize standard treatments. Although there is a wide range of therapeutic options for T2-high asthma, unfortunately, for T2-low asthma, we still have limited therapeutic choices. Our case report refers to a 64-year-old woman with severe T2-low asthma and chronic rhinosinusitis with nasal polyps (CRSwNP) who had already tested other standard therapies without clinical or functional benefits. She is being treated with tezepelumab (210 mg subcutaneous injection, administered every 4 weeks), an antithymic stromal lymphopoietin (TSLP) human monoclonal antibody. After the third dose, she showed significant clinical and functional benefits, which were also confirmed after 6 months of add-on biological therapy with anti-TSLP. In conclusion, this case study suggests that tezepelumab can provide rapid and effective therapeutic action in patients with severe T2-low asthma and nasal polyposis.

Keywords: T2-low; TSLP; nasal polyps; severe asthma; tezepelumab.

Conflict of interest statement

The authors declare no conflicts of interest.

- 14 references
- 5 figures

Full text links

6

Editorial

Eur Respir J

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. 2026 Mar 5;67(3):2502402.

doi: 10.1183/13993003.02402-2025. Print 2026 Mar.

Severe asthma: an indirect, subtle killer

Joan B Soriano [1 2 3], Luis A Pérez de Llano [4]

Affiliations Expand

- PMID: 41786491

- DOI: 10.1183/13993003.02402-2025

No abstract available

Conflict of interest statement

Conflict of interest: J.B. Soriano reports grants from Chiesi, GSK, Linde and Novartis, participation in speaking activities, advisory committees and consultancies for Air Liquide, Almirall, AstraZeneca, Boehringer Ingelheim, CHEST, Chiesi, CNPT, ERS, FTH, Gebro, Grifols, GSK, IHME, Laminar Pharma, Linde, Lipopharma, Menarini, Mundipharma, Novartis, OMS/WHO, Pfizer, ResApp, RiRL, ROVI, Sapio, SEPAR, Seqirus, WHO EUR, Takeda and Zambon, and is an Associate Editor for the European Respiratory Journal. L.A. Pérez de Llano reports grants from AstraZeneca, Sanofi/Regeneron, Menarini and Chiesi, consultancy fees from AstraZeneca, Sanofi/Regeneron and GSK, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Sanofi/Regeneron, GSK, FAES and Menarini, payment for expert testimony from AstraZeneca, GSK and Sanofi/Regeneron, and support for attending meetings from AstraZeneca, Sanofi/Regeneron, Menarini, FAES and GEBRO.

Comment on

- Mortality in severe asthma: results from the NORDSTAR cohort.

Hansen S, von Bülow A, Cooper A, Sandin P, Ernstsson O, Kankaanranta H, Janson C, Lehtimäki L, Aarli BB, Geale K, Hjoberg J, Packham S, Sekulic D, Altraja A, Backman H, Karjalainen J, Sverrild A, Backer V, Kauppi P, Yasinska V, Porsbjerg C, Ulrik CS, Bossios A.Eur Respir J. 2026 Mar 5;67(3):2501289. doi: 10.1183/13993003.01289-2025. Print 2026 Mar.PMID: 41198390

Supplementary info

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Respir Med

. 2026 Mar 3:108750.

doi: 10.1016/j.rmed.2026.108750. Online ahead of print.

Real-world, long-term effectiveness of dupilumab treatment in patients with severe asthma: 2 years of the ProVENT study

Marek Lommatzsch [1], Olaf Schmidt [2], Hartmut Timmermann [3], Monika Gappa [4], Henrik Watz [5], Jason Kwah [6], Olivier Ledanois [7], Nicole Nischan [8], Matthias Hahn [9], Andreas Heimann [8], Stephanie Korn [10]

Affiliations Expand

- PMID: 41785977

- DOI: 10.1016/j.rmed.2026.108750

Abstract

Background: Randomized controlled trials have shown clinical efficacy of dupilumab in patients with severe asthma. However, the long-term effectiveness of dupilumab treatment for asthma in real-life is incompletely understood.

Methods: ProVENT (NIS-Nr.: 514; study code: OBS16379) is a non-interventional, prospective, 3-year study in patients aged ≥12 years with severe asthma receiving dupilumab per routine clinical care in Austria, Germany, and Switzerland. This interim analysis of ProVENT assessed lung function, asthma control, quality of life, biomarkers, and clinical remission, over the first 2 years in the study. Safety outcomes will be presented in the final analysis.

Results: 421 patients were screened, and of the 399 patients enrolled in ProVENT, 259 had ≥1 post-baseline assessments and 100 had documented data after 24 months of treatment. At month 24, mean (standard deviation [SD]) improvement from baseline was 0.24 L (0.46) for pre-bronchodilator forced expiratory volume in 1 second (FEV_1); 10.10% (15.80) for pre-bronchodilator percent predicted FEV_1;-0.96 (1.24) for 5-item Asthma Control Questionnaire score (ACQ-5); 4.4 (5.4) for Asthma Control Test score (ACT); and 0.61 [1.3] for Standardized Asthma Quality of Life Questionnaire overall score (AQLQ[S]). Blood eosinophils, fractional exhaled nitric oxide (FeNO), and total serum immunoglobulin E (IgE) decreased by month 24. Among patients with available data, clinical remission rates were 55.9% at year 1 and 58.0% at year 2.

Conclusion: In real-world patients with severe asthma, long-term dupilumab treatment is associated with sustained improvements in lung function, asthma control, and quality of life. Nearly 60% of patients achieved clinical asthma remission after 2 years.

Keywords: Asthma; Asthma control; Biomarkers; Clinical remission; Dupilumab; Lung function; Real-world study.

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: The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: ML reports receiving honoraria for lectures and/or consultant fees from ALK, Allergopharma, APONTIS PHARMA, AstraZeneca, Bencard Allergie, Berlin-Chemie, Boehringer Ingelheim, Bosch, Chiesi, Circassia, GSK, HAL Allergy, Janssen-Cilag, MSD, Mundipharma, Novartis, Nycomed/Takeda, Sanofi, Stallergenes Greer, Teva, and UCB; reimbursement of attendance fees for conferences and educational events and that of travel and accommodation costs from AstraZeneca and Novartis; research support from AstraZeneca, DFG, and GSK; and funding for performing clinical studies from AstraZeneca and Sanofi. OS reports receiving honoraria for lectures and/or consultant fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Novartis, Sanofi, and Teva; research support from AstraZeneca, Boehringer Ingelheim, GSK, Novartis, and Sanofi. HT reports receiving consultant fees from AstraZeneca, Almirall, Astellas Pharma, Bayer, Berlin-Chemie, Boehringer Ingelheim, GSK, LETI Pharma, Meda, Mundipharma, Novartis, Nycomed, Pfizer, Sanofi, Takeda, and Teva. MG reports receiving clinical trial fees, advisory board and/or, lecture fees from ALK, AstraZeneca, DBV, Evangelisches Krankenhaus (Düsseldorf, Germany), InfectoPharm, Klinik für Kinder- und Jugendliche, Novartis, OM Pharma, Sanofi/Regeneron Pharmaceuticals Inc. HeHWreports consultancy, travel, and speaker fees from AstraZeneca, Bayer, Boehringer Ingelheim, Chiesi, GSK, Novartis, Sanofi, and Takeda. JHK is an employee and shareholder of Regeneron Pharmaceuticals Inc. OL, NN, MH, and AH are employees of Sanofi and may hold stock and/or stock options in the company. SK receives grants/funds, personal fees for lectures and advisory boards from AstraZeneca, GSK, Novartis, Sanofi, and Teva.

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. 2026 Dec;58(1):2635778.

doi: 10.1080/07853890.2026.2635778. Epub 2026 Mar 5.

Efficacy and safety of allergen-specific immunotherapy for allergic asthma: a meta-analysis comparing sublingual and subcutaneous routes across allergen types and age groups

Weimou Yin [1 2], Weitong Zeng [1 2], Yutong Li [2 3], Shiting Huang [2 4], Shoucheng Cen [2 4], Bangling Su [2 4], Ting Zhou [1 2], Xuejun Qin [1 2]

Affiliations Expand

• PMID: 41784325

• PMCID: PMC12964469

• DOI: 10.1080/07853890.2026.2635778

Abstract

Purpose: This meta-analysis aims to evaluate the efficacy and safety of allergen-specific immunotherapy (AIT) in treating allergic asthma.

Methods: A comprehensive search across PubMed, Cochrane Library, Embase and Web of Science was conducted. Randomized controlled trials (RCTs) evaluating AIT for allergic asthma were included. Data analysis was performed using RevMan 5.3, with evaluations for heterogeneity and publication bias. Subgroup analyses were stratified based on different treatment type, duration, age and allergen type (house dust mites vs. grass pollen).

Results: A total of 28 RCTs were included in the meta-analysis. AIT significantly improved asthma symptoms ($p < 0.001$), with SCIT showing greater efficacy than SLIT. Treatment duration and age did not significantly impact the outcomes. AIT was effective against both house dust mite and grass pollen allergies. It also notably improved medication scores ($p < 0.001$) and positively impacted FEV1 ($p < 0.001$). Regarding safety, AIT did not increase the total number of local side effects but significantly increased systemic reactions.

Conclusion: AIT is effective in improving asthma symptoms and reducing medication use, with subcutaneous immunotherapy being more efficacious than sublingual immunotherapy. The effectiveness varies by allergen type, with no substantial differences across age groups and treatment durations.

Keywords: Allergen-specific immunotherapy; allergic asthma; meta-analysis; subcutaneous immunotherapy; sublingual immunotherapy.

Conflict of interest statement

All authors declare that they have no conflicts of interest.

- 53 references
- 5 figures

Supplementary info

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ERJ Open Res

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. 2026 Mar 2;12(2):00860-2025.

doi: 10.1183/23120541.00860-2025. eCollection 2026 Mar.

Bronchodilation response, respiratory burden and biomarkers: insights from impulse oscillometry and spirometry

Claudia Dührkop [1 2 3], Martin Färdig [1 3], Christer Janson [2], Henrik Johansson [1 2 4], Per Wollmer [5], Andrei Malinovschi [1]

Affiliations Expand

- PMID: 41777745
- PMCID: PMC12951303
- DOI: 10.1183/23120541.00860-2025

Abstract

Participants with BDR in both IOS and FEV_1 have the highest prevalence of symptoms, asthma, COPD and inflammation, highlighting the added value of combining these methods to assess bronchodilator responsiveness and peripheral airway dysfunction https://bit.ly/4nNlj6j.

Conflict of interest statement

Conflict of interest: All authors have confirmed that they have no conflicts of interest to declare.

- 12 references

Supplementary info

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10

BMC Med

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. 2026 Mar 4.

doi: 10.1186/s12916-026-04754-7. Online ahead of print.

The role of COPD and inhaled corticosteroids in major adverse cardiovascular events in cardiovascular-kidney-metabolic populations

Anne E Ioannides [1], Emily L Graul [2 3], Constantinos Kallis [2], Upasana Tayal [4 5 6], Hana Müllerová [7], Jennifer K Quint [2]

Affiliations Expand

- **PMID: 41776594**

- **DOI: 10.1186/s12916-026-04754-7**

Free article

Abstract

Background: Cardiovascular-kidney-metabolic (CKM) disease and chronic obstructive pulmonary disease (COPD) are associated with major adverse cardiovascular events (MACE). Whether COPD further increases MACE risk within CKM populations, and whether this potential risk is modifiable through inhaled corticosteroids (ICS), is unknown. Within CKM populations, we investigated the relationship between (1) COPD and subsequent MACE, and (2) amongst concurrent CKM-COPD populations, we investigated the relationship between ICS and subsequent MACE.

Methods: We used Clinical Practice Research Datalink (CPRD) Aurum, Hospital Episode Statistics and Office of National Statistics data, between January 1st, 2010, and March 29th, 2021. We created five discrete cohorts: chronic kidney disease (CKD), type-II diabetes mellitus (T2DM), obesity, MACE history, and older adults (aged ≥ 65 years old ["Age65 + "]). CKD, T2DM, obesity, and Age65 + cohorts were MACE-naïve at the time of inclusion. Aim (1) exposures were (a) COPD, (b) incident COPD, and (c) being at risk of COPD without diagnosis (defined as age ≥ 40 years old, smoking history, no evidence of asthma, and frequent respiratory infections requiring antibiotics). Aim (2) exposure was ICS prescription (control group: long-acting bronchodilators). The outcome was MACE (acute coronary syndrome, arrhythmia, heart failure, ischaemic stroke, or cardiovascular-specific mortality). We implemented Cox proportional hazards models.

Results: COPD was associated with MACE amongst all cohorts, but was comparatively weak in the MACE history cohort (cohort total; adjusted hazard ratio [95% confidence interval]): CKD (N = 573,626; 1.29 [1.26, 1.32]), T2DM (N = 649,506; 1.30 [1.26, 1.35], obesity (N = 225,273; 1.41 [1.34, 1.48]), MACE history (N = 507,889; 1.04 [1.02, 1.06]), and Age65 + (N = 592,123, 1.59 [1.52, 1.66]). Incident COPD was associated with subsequent MACE in CKD only (1.28 [1.13, 1.45]). Being at risk of COPD was associated with subsequent MACE in CKD (1.18 [1.07, 1.30]), MACE history (1.16 [1.08, 1.25]), and Age65 + (1.28 [1.13, 1.46]). ICS prescription was not associated with subsequent MACE in any concurrent CKM-COPD cohort.

Conclusions: COPD was an independent risk factor for MACE in CKM populations. ICS did not attenuate MACE amongst CKM-COPD groups. Incident COPD was associated with MACE in CKD, and being at risk of COPD was associated with MACE in CKD, MACE history, and Age65 + cohorts.

Keywords: COPD; Cardiometabolic; Cardiovascular-kidney-metabolic syndrome; ICS; MACE.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: 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 Sect. 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: 22_002514) and the approved protocol is available upon request. Linked pseudonymised data was provided for this study by CPRD. Data is 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. Further information on availing data is available in Additional file 1. Consent for publication: No individual-level data is available within this publication; all data are summary statistics. In addition, CPRD policy dictates that no table cell may report fewer than five events to protect participants' identities. Competing interests: Mixed competing interests: All

authors have completed the ICMJE uniform disclosure form at http://www.icmje.org/disclosure-of-interest/and declare: AEI has received institutional grants from the British Heart Foundation (BHF). ELG has nothing to disclose. CK has nothing to disclose. UT is supported by research grants from the Medical Research Council, Royal Society and NIHR Imperial Biomedical Research Centre. UT is a freelance research editor at the British Medical Journal. HM is an employee of AstraZeneca and owns shares and stock options of AstraZeneca. JKQ has been supported by institutional research grants from the Medical Research Council, NIHR, Health Data Research, GSK, BI, AZ, Insmed, Sanofi and received personal fees for advisory board participation, consultancy or speaking fees from GlaxoSmithKline, Evidera, Chiesi, AstraZeneca. This research was supported by the NIHR Imperial Biomedical Research Centre (BRC).

- 49 references

Supplementary info

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Eur J Intern Med

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Small airway dysfunction and glucocorticoid (OCS) reduction in severe asthma: Clinical insights from real-world tezepelumab use

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Affiliations Expand

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- DOI: 10.1016/j.ejim.2026.106804

No abstract available

Keywords: Corticosteroid reduction; Severe asthma; Small airway dysfunction; Tezepelumab.

Conflict of interest statement

Declaration of competing interest The authors declare they have no conflict of interest.

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Int Forum Allergy Rhinol

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Dosing Interval Extension of Dupilumab in CRSwNP: Five-Year Real World Outcomes

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Affiliations Expand

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Abstract

Background: Chronic rhinosinusitis with nasal polyps (CRSwNP) is a persistent, often Type 2-mediated inflammatory disease that markedly impairs quality of life. While dupilumab provides rapid improvement, there is limited evidence on long-term outcomes beyond 2 years, and the clinical impact of dosing-interval extension remains unclear. We therefore set out to evaluate long-term real-world outcomes of

dupilumab therapy in CRSwNP and assess the effectiveness and safety of dosing-interval extension after achieving disease control.

Methods: This retrospective single-center cohort included 224 adults with CRSwNP (37% with nonsteroidal anti-inflammatory drug-exacerbated respiratory disease) treated with dupilumab for up to 4.5 years with outcomes modeled to 5 years. Longitudinal changes in polyp size, symptom burden, olfaction, asthma control, and Type 2 biomarkers were analyzed using mixed-effects models. Outcomes were then compared between patients who maintained standard 2-week dosing and those who voluntarily extended dosing intervals after achieving stable control.

Results: Dupilumab led to significant improvements in polyp burden, olfactory function, and quality of life peaking within 6 months, with sustained benefit through 5 years according to longitudinal modeling. Forty percent of patients extended dosing intervals without loss of efficacy and reported fewer treatment-related adverse events. Overall, 16% experienced side effects, most commonly musculoskeletal complaints, followed by skin reactions and injection site reactions.

Conclusion: Long-term dupilumab therapy provided durable disease control and excellent safety. Personalized dosing-interval extension maintained efficacy and reduced treatment burden, supporting its potential role in optimizing long-term management of CRSwNP, especially in patients with troublesome side effects.

Keywords: CRS; CRSwNP; biologics; drug safety; dupilumab; long-term disease outcomes; nasal polyps; real world; sinusitis.

- **36 references**

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Review

J Asthma

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. 2026 Mar 5:1-8.

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Comparison of the efficacy of high-flow nasal cannula and bi-level positive airway pressure in children with asthma exacerbation: a systematic review and meta-analysis

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Abstract

Objective: To compare the effects of high-flow nasal cannula (HFNC) and bi-level positive airway pressure (BiPAP) in the treatment of children with asthma exacerbation.

Methods: MEDLINE, Embase, CINAHL Complete, China National Knowledge Infrastructure (CNKI), and WanFang databases were systematically searched through 1 December 2024. Studies comparing HFNC and BiPAP in children aged 2-18 years with asthma exacerbation were included. Two reviewers independently screened titles, abstracts, and full texts. Randomized controlled trials (RCTs) and cohort studies reporting clinical or respiratory outcomes were eligible.

Results: After screening, a total of 7 studies were included, comprising 374 participants, with 5 randomized controlled trials (RCTs) and 2 retrospective cohort studies. Among the included studies, 5 reported on length of hospital stay, and 4 reported on PICU stay. Both treatment modalities showed no significant impact on hospital stay (MD = -0.24, 95% CI: -1.66, 1.19) or PICU stay (MD = -0.04, 95% CI: -0.82, 0.73). Three studies reported on PaO_2, while 2 studies provided data on SaO_2, SpO_2, and PCO_2. Significant heterogeneity was observed across the four indicators, and random-effects models were used for analysis. The results indicated no significant difference in SpO_2 and PCO_2 between the two treatment groups, but BiPAP significantly improved PaO_2 and SaO_2 compared to HFNC.

Conclusions: Both HFNC and BiPAP can provide adequate ventilatory support for children with asthma exacerbation. However, BiPAP may provide benefits in greater oxygenation (PaO_2, SaO_2); this effect needs confirmation in future high-quality clinical trials.

Keywords: Asthma; bi-level positive airway pressure; children; high-flow nasal cannula; meta-analysis.

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Association between pan-immune-inflammation value and asthma all-cause-mortality in American adults: NHANES 1999-2018

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Abstract

Objective: The pan-immune-inflammation value (PIV) is a novel biomarker developed to evaluate systemic immune-inflammatory status. Although its predictive utility has been developed in multiple medical contexts, its applicability to asthma-related outcomes remains uncertain and warrants further investigation.

Methods: This investigation examined data collected through the National Health and Nutrition Examination Survey (NHANES) from 1999 to 2018. Multifactorial Cox regression analysis served to evaluate the link between PIV and all-cause mortality (ACM) in individuals with asthma. The investigation utilized Kaplan-Meier's survival curves to display survival patterns across PIV quartiles. Restricted cubic spline regression helped investigate the link between PIV and asthma-related ACM. The investigation incorporated subgroup analyses to identify potential effect modifiers, while sensitivity analyses confirmed the reliability of the results.

Results: The investigation involved 5776 asthmatic individuals aged 20-80 years. The comprehensive adjusted analysis (model 3) indicated that participants in the highest quartile of $\log_{10}$(PIV) had a 55.9% higher risk of ACM compared to those in the lowest quartile (HR = 1.559, 95%CI: 1.131-2.149). The dose-response evaluation demonstrated a linear link between PIV and asthma-related ACM (*p* for overall trend <0.001; *p* for nonlinearity = 0.052). Subgroup analysis identified a significant

interaction with smoking status (p = 0.005), while no notable interactions were detected in other subgroups (p > 0.05).

Conclusions: Rising PIV is linearly and independently associated with elevated ACM in adults with asthma. These findings suggest that PIV may have potential utility in risk stratification. Further research is needed to confirm its prognostic value.

Keywords: Asthma; NHANES; cohort study; pan-immune-inflammation value.

15

Review

J Asthma

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Impact of weight loss on obese children and adolescents with asthma: a systematic review and meta-analysis

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Abstract

Objective: This systematic review and meta-analysis aims to evaluate the efficacy of weight management interventions on pulmonary function, asthma control, asthma-specific quality of life, and leptin levels in obese children and adolescents with asthma.

Methods: Randomized controlled trials (RCTs) and single-group pretest-posttest designs (SGPPDs) involving obese children and adolescents with asthma receiving

weight management interventions were identified through systematic searches of six databases (PubMed, Cochrane Library, Web of Science, Embase, CNKI, Wanfang Data) and three trial registries from inception to September 26, 2024. Risk of bias was assessed using the Cochrane Risk of Bias 2.0 (ROB 2.0) tool for RCTs and the Joanna Briggs Institute (JBI) critical appraisal tool for SGPPDs.

Results: Nine studies met the inclusion criteria. Meta-analysis of RCTs revealed significant improvements in FEV_1% (MD=4.53, 95% CI: 3.51-5.55) and FVC% (MD=4.91, 95% CI: 4.15-5.67) following weight management interventions. Asthma Control Test (ACT) and Pediatric Asthma-specific Quality of Life Questionnaire (PAQLQ) scores increased by 1.41 (95% CI: 1.11-1.71) and 0.46 (95% CI: 0.07-0.85), respectively. Leptin levels showed a decreasing trend but lacked statistical significance. SGPPD results were similar to RCT findings but with higher heterogeneity. Peter's regression indicated no publication bias (P>0.05), and sensitivity analysis supported the stability of effect sizes.

Conclusions: Weight management positively impacts pulmonary function, asthma control, and asthma-specific quality of life in obese pediatric asthma patients, while its effect on leptin levels requires further exploration. This study provides critical evidence for weight management strategies.

Keywords: Obesity; adolescents; asthma; children; meta-analysis; weight reduction.

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J Asthma

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Symptomatic sex differences in patients with severe asthma free of exacerbations and maintenance oral corticosteroids under biologic treatment

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Abstract

Introduction: Symptomatic control is a key domain of clinical remission (CR) in management of severe asthma. However, little is known about sex differences in symptomatic burdens, particularly in patients with asthma who receive biologics and meet other domains of CR, including no exacerbation in a past year and no maintenance oral corticosteroid (OCS) use. This study examined sex differences in symptoms assessed with asthma control test (ACT) in these patients.

Methods: Of consecutive patients with severe asthma who completed ACT after at least one year of biologic treatment, those with OCS-free and past-year exacerbation-free conditions were retrospectively included to explore sex differences in ACT scores.

Results: A total of 72 female and 46 male patients with asthma were included. ACT score was significantly lower in females than males (22.0 and 24.0, $p < .01$). The rate of ACT score ≥23 was lower in females than males after adjusting for confounding variables (odds ratio =0.24, 95% confidence interval [0.10, 0.55], $p < .001$), whereas the rate of ACT score ≥20 did not differ. In a sub-analysis, ACT scores prior to biologic were assessed in 48 females and 31 males. After biologic, ACT scores improved in both sexes. However, pre-treatment ACT scores were lower in females (19.5 vs. 22.0, $p = .048$).

Discussion: Symptomatic burdens are greater in female patients with asthma maintaining exacerbation-free and OCS-free conditions under biologic treatments compared to male counterparts. This sex difference may cause a lower rate of CR in females particularly when CR requires almost complete symptomatic resolution.

Keywords: Asthma; biologics; clinical remission; sex; symptoms.

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Mortality in severe asthma: results from the NORDSTAR cohort

Susanne Hansen [1,2], Anna von Bülow [3], Alexandra Cooper [4], Patrik Sandin [4], Olivia Ernstsson [4,5], Hannu Kankaanranta [6,7,8], Christer Janson [9], Lauri Lehtimäki [6,10], Bernt Bøgvald Aarli [11,12], Kirk Geale [4,13], Josephine Hjoberg [14], Sylvia Packham [13,15], Davorka Sekulic [16], Alan Altraja [17], Helena Backman [18], Jussi Karjalainen [6,10], Asger Sverrild [3,19], Vibeke Backer [20], Paula Kauppi [21], Valentyna Yasinska [22,23], Celeste Porsbjerg [3,19], Charlotte Suppli Ulrik [19,24,25], Apostolos Bossios [22,26,27,25]

Affiliations Expand

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- DOI: 10.1183/13993003.01289-2025

Abstract

Background: Longitudinal data addressing the impact of asthma severity on mortality are lacking. We aimed to explore all-cause and cause-specific mortality according to asthma severity.

Methods: The present registry-based cohort study is based on Danish data from the NORdic Dataset for aSThmA Research (NORDSTAR) research collaboration platform. Adult patients with severe asthma were matched on age and sex to 10 patients with mild-to-moderate asthma and followed from 2000 to 2020. Patients with COPD diagnosed prior to inclusion were excluded. Absolute and relative measures of all-cause and cause-specific mortality were compared between severe and mild-to-moderate asthma.

Results: We included 11 881 and 118 810 patients with severe and mild-to-moderate asthma, respectively. All-cause mortality was significantly higher in patients with severe asthma compared to patients with mild-to-moderate asthma, both in absolute measures of the cumulative mortality (34% (95% CI 32-35%) *versus* 20% (95% CI 19-20%); p<0.001) after 20 years of follow-up and in relative measures (hazard ratio (HR) 1.99, 95% CI 1.90-2.09; p<0.001). The HR of all-cause mortality was attenuated after adjustment for oral corticosteroid (OCS) use (HR 1.30, 95% CI 1.23-1.37; p<0.001) and type 2 (T2) inflammatory markers (HR 1.34, 95% CI 1.09-1.64; p<0.001). The increased cumulative mortality risk was mainly due to respiratory diseases (12.6% (95% CI 11.7-13.6%) *versus* 3.3% (95% CI 3.2-3.5%); p<0.001), with cancer (7.5% (95% CI 6.8-8.3%) *versus* 5.9% (95% CI 5.7-6.2%); p<0.001) and cardiovascular diseases (4.7% (95% CI 4.1-5.3%) *versus* 3.8% (95% CI 3.6-4.0%); p<0.001) also contributing. Although rare, the relative risk of asthma-related deaths was three-fold in severe asthma patients (HR 2.95, 95% CI 2.08-4.18; p<0.001).

Conclusions: In this nationwide cohort, severe asthma was associated with a significantly higher mortality risk compared to mild-to-moderate asthma. The

increased risk was primarily driven by respiratory-related deaths, with OCS use and T2 inflammation as contributing mortality risk factors.

Conflict of interest statement

Conflict of interest: S. Hansen reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca and GSK. A. von Bülow reports grants from AstraZeneca, GSK and Sanofi, consultancy fees from Novartis and AstraZeneca, payment or honoraria for lectures, presentations, manuscript writing or educational events from Novartis, GSK and AstraZeneca, support for attending meetings from AstraZeneca, and participation on a data safety monitoring board or advisory board with AstraZeneca, GSK and Novartis. A. Cooper reports support for the present study from AstraZeneca, GSK, Sanofi, Bispebjerg Hospital and Quantify Research, and is an employee of Quantify Research. P. Sandin reports support for the present study from AstraZeneca, GSK, Sanofi, Bispebjerg Hospital and Quantify Research, and is an employee of Quantify Research. O. Ernstsson reports support for the present study from AstraZeneca, GSK, Sanofi, Bispebjerg Hospital and Quantify Research, and is an employee of Quantify Research. H. Kankaanranta reports consultancy fees from AstraZeneca, Chiesi Pharma, Covis Pharma, GSK, MSD, Orion Pharma and Sanofi, and payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, GSK, Novartis, Orion Pharma and Sanofi. C. Janson reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Chiesi, GSK, Orion and Sanofi. L. Lehtimäki reports payment or honoraria for lectures, presentations, manuscript writing or educational events from ALK, AstraZeneca, Chiesi, Berlin-Chemie, Boehringer Ingelheim, GSK, Menarini, Novartis, Orion and Sanofi. B.B. Aarli reports consultancy fees from AstraZeneca and Grifols, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, GSK, Orion Pharma and Sanofi-Aventis, and participation on a data safety monitoring board or advisory board with AstraZeneca, GSK, Grifols, Orion Pharma, Celltrion Healthcare, Chiesi Pharma and Sanofi-Aventis. K. Geale is a board member and CEO of Quantify Research AB, has stock and stock options in Quantify Research AB and Athagoras Group, and reports payment or honoraria for lectures, presentations, manuscript writing or educational events from ISPOR. J. Hjoberg is employed by GSK as medical advisor. S. Packham was an employee at AstraZeneca Sweden at the time of this study and reports stock or stock options with AstraZeneca and is a former employee at Teva Pharmaceutical. D. Sekulic is an employee at Sanofi and reports grants from Sanofi. A. Altraja reports grants from AstraZeneca, Boehringer Ingelheim and Berlin-Chemie Menarini, consultancy fees from AstraZeneca, Boehringer Ingelheim, GSK and Sanofi, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Berlin-Chemie Menarini, Boehringer Ingelheim, Norameda, CSL Behring, GSK, MSD, Novartis, Orion, Sanofi, Takeda, Teva and Zentiva, payment for expert testimony from AstraZeneca, Boehringer Ingelheim, GSK, Sanofi and CSL Behring, support for attending meetings from AstraZeneca, Berlin-Chemie Menarini, Boehringer Ingelheim, Norameda, Sanofi, CSL Behring, Novartis, Takeda and Teva, participation on a data safety monitoring board or advisory board with AstraZeneca, Boehringer Ingelheim, GSK, Sanofi and CSL Behring, a leadership role with the Estonian

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Comment in

- **Severe asthma: an indirect, subtle killer.**

Soriano JB, Pérez de Llano LA.Eur Respir J. 2026 Mar 5;67(3):2502402. doi: 10.1183/13993003.02402-2025. Print 2026 Mar.PMID: 41786491 No abstract available.

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

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Am J Rhinol Allergy

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Comparative Outcomes of Posterior Nasal Nerve Ablation and Inferior Turbinate Radiofrequency During Septoplasty in Patients with Allergic Rhinitis: A Prospective Study

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Affiliations Expand

- PMID: 41789854

- DOI: 10.1177/19458924261428331

Abstract

BackgroundThe efficacy of adjunctive procedures targeting allergic rhinitis (AR) symptoms during septoplasty remains controversial. While radiofrequency ablation of the inferior turbinates (ITRA) is commonly performed, its impact on allergic symptoms beyond nasal obstruction is limited. Posterior nasal nerve ablation (PNNA) has recently gained attention as a promising alternative.ObjectiveTo compare the effects of PNNA and ITRA performed concurrently with septoplasty on allergic and obstructive nasal symptoms in patients with septal deviation and AR.MethodsThis prospective cohort study included 69 patients with septal deviation and AR who underwent septoplasty with either PNNA (n = 35) or ITRA (n = 34). Symptoms were assessed preoperatively and at 3 months postoperatively using the Mini-Rhinoconjunctivitis Quality of Life Questionnaire (MiniRQLQ), reflective Total Nasal Symptom Score (rTNSS), and Nasal Obstruction Symptom Evaluation (NOSE) scale. The rTNSS was divided into obstruction-related (rTNSS-A) and allergic (rTNSS-B) sub scores.ResultsBoth groups showed significant postoperative improvement in all parameters ($p < 0.001$). Compared with ITRA, the PNNA group demonstrated greater reductions in MiniRQLQ (*mean changes = 36.97 ± 12.4 vs 32.00 ± 11.8; p = 0.025*), rTNSS-B (*median changes = 4.0 vs 2.0; p < 0.001*), and rTNSS (*median changes = 4.0 vs 2.5; p < 0.001*). Changes in rTNSS-A and NOSE scores were comparable between groups ($p > 0.05$). No serious adverse events occurred; transient crusting was observed in 5 ITRA and 3 PNNA patients, and mild bleeding in 2 ITRA patients.ConclusionBoth techniques effectively improved nasal symptoms, but PNNA provided superior relief of allergic symptoms and quality-of-life gains, supporting its consideration as an adjunctive treatment in septoplasty patients with comorbid AR.

Keywords: allergic rhinitis; endoscopic technique; inferior turbinate radiofrequency ablation; nasal obstruction; nasal symptom score; parasympathetic denervation; posterior nasal nerve ablation; quality of life; rhinologic surgery; septoplasty.

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Int Forum Allergy Rhinol

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doi: 10.1002/alr.70126. Online ahead of print.

Endoscopic Posterior Nasal Neurectomy Versus Radiofrequency Ablation in Refractory Allergic Rhinitis: A 2-Year Randomized Controlled Trial of Clinical Outcomes and Immunomodulatory Responses

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Affiliations Expand

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- DOI: 10.1002/alr.70126

Abstract

Background: Endoscopic posterior nasal nerve (PNN) neurectomy and temperature-controlled radiofrequency ablation are validated interventions for medication-refractory allergic rhinitis (AR), but direct comparisons of their long-term efficacy, safety, and mechanisms remain lacking.

Methods: In this prospective, multicenter, randomized, patient-blinded study, 174 adults with moderate-to-severe persistent AR were allocated to PNN neurectomy (n = 89) or ablation (n = 85). The primary endpoint was the percentage of participants achieving the minimal clinically important difference (MCID) for the 24-h reflective total nasal symptom score (rTNSS) at 24 months.

Results: The rTNSS MCID responder rate at 24 months was 86.5% (95% confidence interval [CI], 80.0-95.0%) in the neurectomy group and 84.9% (95% CI, 78.0-94.0%) in the ablation group, with no significant between-group difference (p = 0.453). Both groups demonstrated substantial and parallel improvements in quality of life. Neurectomy provided greater and more durable control of rhinorrhea (1-24 months,

all p < 0.05), nasal congestion (24 months, p < 0.001), and nasal itching (24 months, p = 0.046), alongside a greater reduction in unilateral nasal resistance (right side, p = 0.014). Both groups showed convergent systemic neuroimmune reprogramming at 1 year, with suppression of substance P, interleukin (IL)-31, IL-33, IL-4, IL-13, and IL-6, and increased transforming growth factor-β (TGF-β)and immunoglobulin G4 (IgG4). No serious adverse events occurred; mild transitory events were reported only with neurectomy (3.4%).

Conclusion: Both techniques are effective and safe for refractory AR over 2 years. Although overall outcomes are comparable, neurectomy offers superior and sustained control of rhinorrhea, nasal congestion, and nasal itching. Treatment can be individualized based on symptom profile.

Keywords: allergic rhinitis; neurectomy; posterior nasal nerve; radiofrequency neurolysis.

- 33 references

Supplementary info

Grants and fundingExpand

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Int Forum Allergy Rhinol

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. 2026 Mar 5.

doi: 10.1002/alr.70133. Online ahead of print.

Effect of Laser Posterior Nasal Neurolysis for the Treatment of Chronic Rhinitis: A Randomized Controlled Trial

Jyun-Yi Liao [1], En-Ying Wang [2], Ying-Shuo Hsu [3 4 5 6], Ming-Shao Tsai [7], Cheng-Jung Wu [8 9], Chia-Hao Chang [10], Yi-Li Hwang [11], Han-Lo Teng [2], Jun-Wei Hsieh [12], Chien-Yu Huang [2 12]

Affiliations Expand

- PMID: 41782470

- DOI: 10.1002/alr.70133

Abstract

Background: To determine the safety and efficacy of laser ablation of the posterior nasal nerve (PNN) for the treatment of chronic rhinitis.

Methods: This study was a single-center, prospective, single-blinded, randomized sham-controlled trial. Patients with a 24-h reflective Total Nasal Symptom Score (rTNSS) ≧ 5, rhinorrhea ≧ 2, and congestion ≧ 1, were randomized 2:1 to active PNN treatment with a CO_2 laser device or a sham procedure. Outcome measures included the rTNSS, Nasal Obstruction Symptom Evaluation (NOSE), Pittsburgh Sleep Quality Index (PSQI), and Epworth Sleepiness Scale (ESS). The primary endpoint was the change in scores at 3 months.

Results: Patients had a mean baseline rTNSS of 8.5 (95% CI, 7.9-9.1) and 8.2 (95% CI, 7.4-8.9) (p = 0.589) in the active treatment (n = 43) and sham control (n = 22) arms, respectively. At 3 months, the active treatment arm had a significantly greater decrease in rTNSS -4.7 (95% CI, -5.5 to -3.9) versus -2.6 (95% CI, -3.4 to -1.8) (p = 0.002). While the responder rate (RR, defined as ≧30% improvement rTNSS) was not significantly higher in the active treatment arm (81.4% vs. 63.6%, p = 0.119), post-hoc analysis of RR (≧ 50% improvement) showed a significantly higher rate of 65.1% versus 31.8% (p = 0.011). There were greater improvements in the PSQI and ESS scores for the active arm over the sham arm at follow-ups. (p = 0.041 and 0.005, respectively).

Conclusions: The CO_2 laser posterior nasal neurolysis of the PNN area is associated with minimal adverse events and is superior to a sham procedure in reducing the symptom burden of chronic rhinitis.

Keywords: laser; posterior nasal nerve neurolysis; rhinitis.

- 37 references

Supplementary info

Grants and fundingExpand

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4

Clinical Trial

PLoS One

. 2026 Mar 4;21(3):e0342907.

doi: 10.1371/journal.pone.0342907. eCollection 2026.

Efficacy and safety of rimegepant 75 mg orally disintegrating tablet for the acute treatment of chronic rhinosinusitis in adults: Results from a multicenter, randomized, placebo-controlled, phase 2/3 trial

Daniel Franjic [1], Robert J Fountaine [1], Catherine Nalpas [2], Budhaditya Goswami [3], Terence Fullerton [1]

Affiliations Expand

- PMID: 41779821
- PMCID: PMC12959675
- DOI: 10.1371/journal.pone.0342907

Abstract

Calcitonin gene-related peptide (CGRP) activation could play a causal role in the pathophysiology of chronic rhinosinusitis (CRS), a long-term inflammatory disease of the nasal cavity and paranasal sinuses. This study investigated the efficacy and safety of rimegepant 75 mg orally disintegrating tablet, a CGRP receptor antagonist, versus placebo for acute treatment of CRS. This double-blind, randomized, placebo-controlled, phase 2/3 trial enrolled adults with CRS in the United States. Participants were randomized 1:1 to rimegepant or placebo stratified by the presence or absence of nasal polyps. Participants were dispensed a single dose of study drug administered when they experienced a qualifying facial pain/pressure/fullness (Numeric Rating Scale [NRS] ≥6). The primary efficacy endpoint was a change from baseline [CFB] at 2 hours post dose in the intensity of facial pain/pressure/fullness) with baseline NRS score ≥6. Secondary endpoints included a CFB at 2 hours post dose in the NRS score for nasal obstruction/congestion and nasal discharge, and Total Nasal Symptom Score (TNSS); proportion of participants reporting headache pain relief at 2 hours post dose; and proportion of participants using rescue medication within 24 hours post dose. Efficacy outcomes were evaluated using a linear model. Of 261 participants (mean age: 49.3 years) randomized to rimegepant (n = 131) or placebo (n = 130), 96 and 100 had evaluable data for efficacy analyses. No significant treatment differences (P > 0.05) were observed between groups for the primary (CFB at 2 hours post dose in the NRS score for intensity of facial pain/pressure/fullness, least-squares mean difference [95% CI] -0.1 [-0.7, 0.5]) and

secondary outcomes. There were no serious safety findings. To our knowledge, this study is the first to explore the use of CGRP receptor antagonists for CRS. Although no treatment differences were identified, the findings could contribute to the design of future clinical trials and better disease understanding. Trial registration ClinicalTrials.gov NCT05248997.

Conflict of interest statement

DF was previously employed by Biohaven Pharmaceuticals and worked at Pfizer at the time of this study, and owns stock in both companies. RJF, CN, BG, and TF are employees of and own stock/options in Pfizer. This commercial affiliation does not alter our adherence to PLOS ONE policies on sharing data and materials. There are numerous patents associated with rimegepant, a drug approved for the treatment of migraine and commercialized by Pfizer. Relevant patent numbers for rimegepant in the US are: US8,314,117; US8,759,372; US11,083,724. Pfizer will consider requests from qualified researchers for access to Pfizer clinical data. All requests from qualified researchers for access to Pfizer clinical data and information will be managed by Vivli and Pfizer. Pfizer's practices adhere to the principles for responsible data sharing laid out by the European Federation of Pharmaceutical Industries and Associations (EFPIA) and the Pharmaceutical Research and Manufacturers of America (PhRMA). Upon reasonable request and subject to review, Pfizer will provide the data that support the findings of this study. Subject to certain criteria, conditions, and exceptions, Pfizer may also provide access to the related individual de-identified participant data. See https://www.pfizer.com/science/clinical-trials/trial-data-and-results for more information.

- 31 references
- 3 figures

Supplementary info

Publication types, MeSH terms, Substances, Associated dataExpand

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chronic cough

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BMJ Open Respir Res

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. 2026 Mar 6;13(1):e003589.

doi: 10.1136/bmjresp-2025-003589.

Phase 2a randomised, double-blind, placebo-controlled study to evaluate the efficacy and safety of londamocitinib (AZD4604) two times per day for 12 weeks in adult patients with moderate-to-severe asthma uncontrolled on medium-high-dose ICS-LABA

Mohd Nubli Mustapa [1], Rod Hughes [2], Tina J Jensen [3], Davinder P Dosanjh [2 4], Kyriakos V Konstantinidis [5], Julia Jonsson [6], Szilárd Nemes [7], Zala Jevnikar [8], Michael Jones [9], Amanda Adams [10], Maria G Belvisi [11], Praveen Akuthota [12], Janwillem W H Kocks [13 14 15 16]

Affiliations Expand

- PMID: 41791844

- DOI: 10.1136/bmjresp-2025-003589

Abstract

Introduction: Asthma is a heterogeneous condition and affected individuals show variable responses to available medications. An unmet need exists for add-on therapies that target novel molecular pathways, before patients escalate to biologics. Janus kinase 1 (JAK1) is implicated in multiple inflammatory cytokine pathways critical for the pathogenesis of asthma. Londamocitinib (AZD4604) is a highly specific, inhaled, JAK1 inhibitor with high potency to block multiple JAK1-dependent signalling pathways. AJAX is a phase 2a, randomised, double-blind, partially decentralised placebo-controlled study assessing the efficacy, safety and pharmacokinetics (PK) of londamocitinib in adults with moderate-to-severe asthma uncontrolled on medium-to-high-dose inhaled corticosteroid/long-acting β_2-agonist.

Methods and analysis: The primary endpoint is time to first CompEx Asthma event. Secondary endpoints include change from baseline in prebronchodilator forced expiratory volume in 1 s, chronic airways assessment test, six-item asthma control questionnaire, daily asthma symptom score, and morning and evening peak expiratory flow at weeks 4 and 12. In addition, assessment of the effect of londamocitinib on airway inflammation as measured by the fractional exhaled nitric oxide test; cough severity assessment; and the PK of londamocitinib in all participants after 4 and 12 weeks will also be evaluated.

Ethics and dissemination: The study has received ethical approval from the appropriate ethic committee and will be conducted in accordance with the Declaration of Helsinki, Good Clinical Practice guidelines, and all applicable regulatory requirements. All participants will provide written informed consent prior to enrolment, with procedures in place to ensure comprehension and voluntary participation. Findings will be disseminated through peer-reviewed publications and/or presentations at scientific conferences. Summary results will be posted on the trial registry and shared with participants and relevant patient groups in lay summaries.

Keywords: Asthma.

Conflict of interest statement

Competing interests: MNM, KVK, JJ, SN, TJJ and ZJ are employees of AstraZeneca and may hold shares in AstraZeneca. DPD is an employee of AstraZeneca and may hold shares in AstraZeneca. He has received a study grant from GlaxoSmithKline and an honorarium from Boehringer Ingelheim. He has participated in advisory boards conducted by Boehringer Ingelheim, AstraZeneca, Gilead and Synairgen. MJ, RH and MGB may hold shares in AstraZeneca. AA is a patient advisor for the study and received payment from AstraZeneca for this role. PA is the US national chief investigator for the study and his institution has received payment from AstraZeneca for this role. He also reports consulting fees from AstraZeneca (for separate projects), GlaxoSmithKline, Connect Biopharma, Amgen and Sanofi/Genzyme. JWHK is the international coordinating investigator for the study and received payment from AstraZeneca for this role. He reports grants from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Teva and Valneva. He reports receiving personal fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Teva, MSD, COVIS Pharma and ALK Albello. He also reports receiving non-financial support from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline and Mundi Pharma. JWHK holds <5% shares of Lothar Medtec GmbH and is owner of the General Practitioners Research Institute.

2

Review

J Investig Allergol Clin Immunol

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. 2026 Mar 5:0.

doi: 10.18176/jiaci.1170. Online ahead of print.

Purinergic Receptors as Emerging Targets in the Management of Chronic Cough: From Pathophysiology to Clinical Application

Manuel J Rial [1 2 3 4], Paula Galván [4 5 6], Darío Antolín Amérigo [4 7 8], Remedios Cárdenas-Contreras [4 9], Ana Montoro Ferrer [4 10], Juan C Miralles López [4 11]

Affiliations Expand

- PMID: 41784133

- DOI: 10.18176/jiaci.1170

Abstract

Chronic cough is a prevalent and debilitating condition that significantly impairs quality of life and remains a therapeutic challenge owing to the limited efficacy and unfavorable adverse effect profiles of existing treatments. In recent years, a deeper understanding of the neurobiology of the cough reflex has unveiled the pivotal role of purinergic signaling in the pathophysiology of cough hypersensitivity. Extracellular adenosine triphosphate, released in response to airway inflammation and irritation, activates the P2X3 and P2X2/3 receptors on vagal sensory nerves, triggering and sensitizing the cough reflex. This has led to the emergence of P2X3 receptor antagonists as a promising new class of targeted therapies. This comprehensive review of the pathophysiology of chronic cough focuses on the role of purinergic signaling, with an examination of the preclinical and clinical evidence supporting the efficacy of P2X3 antagonists, such as gefapixant, in reducing cough frequency. Furthermore, we discuss the clinical and safety considerations of these novel drugs, including the main challenge of taste-related adverse effects, and explore future perspectives, such as the development of more selective molecules and the identification of biomarkers to guide personalized treatment strategies. The advent of purinergic receptor modulation marks a significant milestone in the management of chronic cough, offering new hope for patients with this refractory condition.

Keywords: Chronic cough; Gefapixant; P2X3 receptor; Purinergic signaling; Refractory or unexplained chronic cough.

3

Curr Opin Pulm Med

. 2026 Mar 4.

doi: 10.1097/MCP.0000000000001264. Online ahead of print.

Update on diffuse idiopathic pulmonary neuroendocrine cell hyperplasia

Uddalak Majumdar [1], Peter J Mazzone

Affiliations Expand

- PMID: 41783948

- DOI: 10.1097/MCP.0000000000001264

Abstract

Purpose of review: Diffuse idiopathic pulmonary neuroendocrine cell hyperplasia (DIPNECH) is a disorder characterized by neuroendocrine cell hyperplasia, tumorlets and tumors, manifesting as lung nodules, chronic cough, and airflow obstruction. Often misdiagnosed as asthma, DIPNECH lies at the cross-section of oncology, obstructive airway disease and interstitial lung disease. With the increasing use of CT scans leading to higher rates of lung nodule detection, it is important for clinicians to be familiar with DIPNECH.

Recent findings: The evidence base in DIPNECH is sparse and limited to retrospective case series. In the last 5 years, clinical experiences in large academic centers have been published describing variability in clinical presentation and pulmonary function, use of DOTATATE scans, efficacy of somatostatin analogs, and principles of surveillance imaging.

Summary: More awareness of DIPNECH is needed among pulmonary clinicians. Apart from the usual presentation of cough with lung nodules and spirometric obstruction in women, patients also present with dyspnea and/or restrictive patterns on PFTs. Variability in diagnosis and management is widespread. Multidisciplinary assessment is helpful in guiding management. Multicenter and multispecialty collaboration is needed to establish best practices and improve clinical management.

Keywords: DOTATATE; carcinoid; diffuse idiopathic pulmonary neuroendocrine cell hyperplasia; neuroendocrine; somatostatin analog.

- 50 references

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

1

BMJ Open Respir Res

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. 2026 Mar 5;13(1):e002530.

doi: 10.1136/bmjresp-2024-002530.

Pulmonary function and airflow limitation in bronchiectasis: a case-control study of two independent cohorts

Da Som Jeon [1], Young Ju Jung [2 3], Soo Han Kim [4], Bumhee Yang [5], Byoung Soo Kwon [6], Sang Haak Lee [7], Hyun-Kyung Lee [8], Jae Seung Lee [3], Yeon-Mok Oh [3], Sei Won Lee [9]

Affiliations Expand

- **PMID: 41786444**

- **DOI: 10.1136/bmjresp-2024-002530**

Abstract

Background: Bronchiectasis is a respiratory disease structurally characterised by irreversible airway dilatation. Functional impairments are also implicated in bronchiectasis, but the detailed changes in pulmonary function and the impact of clinical factors are yet to be examined. We analysed pulmonary function in patients with bronchiectasis based on their clinical features.

Methods: Two study cohorts-a multicentre bronchiectasis registry and health check-up examinees-were analysed. Airflow limitation was defined as forced expiratory volume in 1 s (FEV_1)/forced vital capacity (FVC) <0.7, and bronchiectasis severity was categorised using the number of involved lobes.

Results: Among 13 589 health check-up examinees, 606 (4.5%) had bronchiectasis; airflow limitation was more prevalent in those with bronchiectasis than in those without (17.3% vs 8.1%, p<0.001). Ever-smokers with bronchiectasis had the lowest FEV_1, FEV_1/FVC and FVC values, and the highest prevalence of airflow limitation. In the bronchiectasis registry (n=768), lung function parameters were worse in those with more involved lobes and *Pseudomonas* colonisation. Multivariable logistic regression analysis showed that bronchiectasis was independently associated with airflow limitation (OR 2.22 (95% CI 1.75 to 2.82)).

Conclusions: Bronchiectasis is an independent risk factor for airflow limitation, and disease severity, smoking and *Pseudomonas* colonisation were each associated with worsening in pulmonary function.

Keywords: Bronchiectasis.

Conflict of interest statement

Competing interests: None declared.

Full text links

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Cite

2

Review

Respir Med

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. 2026 Mar 2:254:108744.

doi: 10.1016/j.rmed.2026.108744. Online ahead of print.

Bronchiectasis: Past insights, present clinical evidence, and future research pathways

Ramez M Halaseh [1], Ma'moon Al-Ahmad [2], Leela Krishna Teja Boppana [3], Ali Al-Tarbsheh [4], Michael D Schweitzer [5], Oriana Salamo [6], Anas Hadeh [7]

Affiliations Expand

- **PMID: 41780764**

- **DOI: 10.1016/j.rmed.2026.108744**

Abstract

Bronchiectasis is a chronic disease characterized by irreversible airway dilation, persistent inflammation, and recurrent infections. Its global prevalence has risen significantly, now surpassing 1400 cases per 100,000 in certain regions, likely due to increased awareness over the last several decades. Bronchiectasis exhibits wide heterogeneity in etiology and clinical phenotype. Advances in imaging, microbiology, and biomarker profiling have refined diagnostic accuracy and revealed distinct endotypes, including those characterized by neutrophilic and eosinophilic inflammation. Innovations in therapy, ranging from airway clearance

and inhaled antibiotics to emerging biologics and neutrophil-targeted therapies, underscore a shift toward individualized treatment. In this review, we provide a comprehensive and up-to-date discussion of the pathophysiological mechanisms, etiologies, and evolving management strategies in bronchiectasis.

Keywords: Airway infection; Bronchiectasis; DPP1 inhibitors; Exacerbations; Neutrophilic inflammation; Precision medicine; Pseudomonas aeruginosa; Type 2 inflammation.

Conflict of interest statement

Declaration of competing interest All the authors of this review article report NO financial or personal relationships with other people or organizations that could inappropriately influence or bias our work. Including all the following potential competing interests: Employment. Consultancies. Stock ownership. Honoraria. Paid expert testimony. Patent applications or registrations. Grants or any other funding Affiliation with the journal as an Editor or Advisory Board Member.

Supplementary info

Publication typesExpand

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Respir Res

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. 2026 Mar 3.

doi: 10.1186/s12931-026-03599-1. Online ahead of print.

CFTR activity in nasal potential difference of adults with idiopathic bronchiectasis

Burkhard Tümmler [1 2], Angela Schulz [3], Rebecca Minso [3], Nadine Alfeis [3], Stephanie Tamm [3], Jessica Rademacher [4 5], Felix C Ringshausen [4 5]

Affiliations Expand

- PMID: 41776502

- **DOI: 10.1186/s12931-026-03599-1**

Free article

No abstract available

Keywords: CFTR; CFTR-related disorder; Epithelial sodium channel ENaC; Idiopathic bronchiectasis; Nasal potential difference.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The BE MHH study was approved by the Ethics Committee of Hannover Medical School (study no. 5391). Informed consent was obtained from all participants of the BE MHH study or their parental guides. Likewise, the Diagnostic BE study (assessment of healthy people, people with CF and people of the diagnostic BE cohort by CFTR biomarkers and the documentation of metadata) was approved by the Ethics Committee of Hannover Medical School (study nos. 6071 and 6790). Informed consent was obtained from all participants of the diagnostic BE study or their parental guides. The BE MHH study and the Diagnostic BE study were performed in accordance with the Declaration of Helsinki as revised in 2013. Consent for publication: Not applicable. Competing interests: Burkhard Tümmler reports grants from the Deutsche Forschungsgemeinschaft (DFG), the Volkswagen Stiftung, the German Center for Lung Research (DZL) and the German Center for Infection Research (DZIF); consulting fees from the Helmholtz-Zentrum für Infektionsforschung; honoraria for lectures and educational events from Vertex Pharmaceuticals Germany; payment for the attendance of advisory boards from Vertex Pharmaceutical Inc; unpaid roles as co-speaker of the Disease Spanning Working Group 'Microbiome/Metagenome' of the DZL and as a member of the Scientific Advisory Board of the Christiane Herzog Stiftung. Jessica Rademacher reports payment or honoraria for lectures, presentations, speakers bureaus, or educational events from CSL Seqirus, Berlin-Chemie, GlaxoSmithKline, AstraZeneca, Chiesi, ThermoFisher, Boehringer Ingelheim, Pfizer, Shionogi, and INSMED; and participation on a data safety monitoring board or advisory board from GlaxoSmithKline, GILEAD, ThermoFischer, Shionogi, and INSMED. Felix Christian Ringshausen reports grants or contracts from the German Center for Lung Research (DZL), the German Center for Infection Research (DZIF), the Innovative Medicines Initiative (EU/EFPIA), and the iABC Consortium (incl. Alaxia, Basilea, Novartis, and Polyphor), Mukoviszidose Institute, Novartis, Insmed Germany, Grifols, Bayer, InfectoPharm; consulting fees from Parion, Grifols, Zambon, Insmed, and Helmholtz-Zentrum für Infektionsforschung; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from I!DE Werbeagentur GmbH, Interkongress GmbH, AstraZeneca, Insmed, Grifols, and Universitätsklinikum Frankfurt am Main; payment for expert testimony from Social Court Cologne; support for attending meetings, travel, from German Kartagener Syndrome and Primary Ciliary Dyskinesia Patient Advocacy Group and Mukoviszidose e.V.; participation on a data safety monitoring board or advisory board for Insmed, Grifols, and Shionogi; leadership or fiduciary role, paid or unpaid, as coordinator of the European Reference Network (ERN)-LUNG Bronchiectasis Core Network, chair of the The Prospective German Non-CF-Bronchiectasis Registry (PROGNOSIS), member of the steering committee of the European Bronchiectasis Registry EMBARC, member of the steering committee of the European Nontuberculous Mycobacterial Pulmonary Disease Registry (EMBARC-NTM), co-speaker of the

medical advisory board of the German Kartagener Syndrome and Primary Ciliary Dyskinesia Patient Advocacy Group, speaker of the respiratory infections and TB group of the German Respiratory Society, speaker of the cystic fibrosis group of German Respiratory Society (DGP), primary investigator of the German Center for Lung Research, member of the protocol review committee of the Primary Ciliary Dyskinesia-Clinical Trial Network (PCD-CTN), member of physician association of the German Cystic Fibrosis Patient Advocacy Group; and other financial or nonfinancial interests with AstraZeneca, Boehringer Ingelheim, Celtaxsys, Corbus, Insmed, Novartis, Parion, University of Dundee, Vertex, and Zambon. Angela Schulz, Rebecca Minso, Nadine Alfeis and Stephanie Tamm declare no competing interests.

- **54 references**

Full text links

Cite

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Review

Br J Pharmacol

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. 2026 Mar 2.

doi: 10.1111/bph.70376. Online ahead of print.

Novel drugs approved by the EMA, the FDA and the MHRA in 2025: A year in review

Andreas Papapetropoulos [1 2], Stavros Topouzis [3], Steve P H Alexander [4], Miriam M Cortese-Krott [5], Zsuzsanna Helyes [6 7], Kirill Martemyanov [8], Claudio Mauro [9], Nithyanandan Nagercoil [10], Reynold A Panettieri Jr [11], Hemal H Patel [12], Rainer Schulz [13], Barbara Stefanska [14], Gary J Stephens [15], Nathalie Vergnolle [16], Xin Wang [17], Stephen Ward [18], Péter Ferdinandy [19 20 21]

Affiliations Expand

- **PMID: 41771767**

- **DOI: 10.1111/bph.70376**

Abstract

In the 2025 novel drug mini-review, one can take a full measure of the ingenuity that underlies current drug design and development, despite the year's smaller harvest (46 novel drugs) compared to 2024 (53) and 2023 (70). 54% of the novel drugs are first-in-class (FIC). The emphasis on proteins/antibodies is maintained (~25% novel drugs in 2025), an industry trend that does not seem to abate. Fewer than half of the novel medicines address major or common disorders. Among the FIC drugs, it is worth mentioning the $Na_V1.8$ channel inhibitor suzetrigine, the first non-opioid approved to palliate acute pain; the first positive allosteric modulator of transient receptor potential melastatin 8 (TRPM8), acoltremon, that increases basal tear production in dry eye disease, a globally common disorder; lerodalcibep, a 'third generation' adnectin inhibitor of the protease Proprotein Convertase Subtilisin/Kexin type 9 (PCSK9) to treat elevated LDL-c; and zoliflodacin and gepotidacin, both innovatively targeting bacterial topoisomerases to treat uncomplicated urinary tract infections. Most of the approved medicines target unmet medical need areas and/or orphan indications (the latter alone accounting for 41% of the 2025 novel drugs) by applying imaginative approaches. These approaches include: the combination of two FIC drugs, the RAF/MEK clamp avutometinib paired with the FAK/Pyk2 inhibitor defactinib, to block more efficiently the RAS-RAF-MEK-ERK/FAK oncogenic pathway in low-grade serous ovarian cancer; fitusiran, the first RNAi therapy for haemophilia, targeting for the first time the production of the natural anticoagulant anti-thrombin in the liver; and brensocatib, which attenuates the activation of downstream neutrophil proteases by inhibiting the protease DPP1, thereby preventing lung tissue destruction in bronchiectasis. The landscape of novel drugs approved in 2025 reveals that pharmaceutical innovation continues to advance through FIC mechanisms, sophisticated therapeutic approaches, and a strong focus on unmet medical need.

Keywords: EMA; FDA; MHRA; drug development; first-in-class; mechanism of action; novel drug approvals.

- **210 references**

Supplementary info

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5

Thorac Res Pract

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. 2026 Mar 2.

doi: 10.4274/ThoracResPract.2025.2025-10-10. Online ahead of print.

Emphysema or Bronchiectasis with Pulmonary Nodules: Impact on The Risk of Malignancy

Ayşegül Gencer [1], Ersan Atahan [1], Bilun Gemicioğlu [1], Şermin Börekçi [1], Buket Çalışkaner Öztürk [1]

Affiliations Expand

- PMID: 41766335

- DOI: 10.4274/ThoracResPract.2025.2025-10-10

Free article

Abstract

Objective: The increasing use of computed tomography (CT) has led to a significant rise in the detection of pulmonary nodules. This has resulted in more studies aimed at identifying risk factors associated with increased detection of early-stage lung cancer. The aim of this study is to investigate the effect of coexisting emphysema or bronchiectasis on the incidence of malignancy in pulmonary nodules.

Material and methods: The study included 212 patients with pulmonary nodules detected on CT images. They were divided into three groups based on the presence of emphysema or bronchiectasis. The effects of demographic factors and pulmonary nodule characteristics on malignancy were evaluated in these groups.

Results: Comparison of the incidence of malignancy in pulmonary nodules across groups showed no significant difference in the emphysema or bronchiectasis groups compared with the control group ($P > 0.05$).

Conclusion: Contrary to what is frequently reported in the literature, the presence of emphysema was not found to be a risk factor for lung cancer in this study. The presence of bronchiectasis was also found not to be a risk factor; however, there are insufficient data in the literature on this point.

Keywords: Pulmonary nodule with emphysema; lung cancer risk factors; lung cancer screening; pulmonary nodule with bronchiectasis.

Conflict of interest statement

No conflict of interest was declared by the authors.