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

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Clin Ther

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. 2026 Feb 6:S0149-2918(25)00423-0.

doi: 10.1016/j.clinthera.2025.12.013. Online ahead of print.

Safety Assessment of Budesonide/Formoterol: Real-World Pharmacovigilance Analysis Using the FAERS, JADER, and CVAR Databases

Zhenyong Chen [1], Chengyu Zhu [1], Zhiwei Cui [2], Fan Zou [1], Yuanbo Lan [3]

Affiliations Expand

- **PMID: 41654451**

- **DOI: 10.1016/j.clinthera.2025.12.013**

Abstract

Background: Asthma and chronic obstructive pulmonary disease are common respiratory disorders with significant global health implications. Budesonide/formoterol (Symbicort) is a fixed-dose inhaler combining budesonide and formoterol fumarate dihydrate, widely used for disease management. While its clinical efficacy is well established, there is an increasing number of adverse drug event (ADE) reports, highlighting the need for thorough real-world safety evaluations.

Methods: We performed a retrospective pharmacovigilance study using three major spontaneous reporting systems: the US Food and Drug Administration Adverse

Event Reporting System (FAERS), the Japanese Adverse Drug Event Report (JADER), and the Canada Vigilance Adverse Reaction Database (CVARD). We used multiple disproportionality algorithms, including reporting odds ratio, proportional reporting ratio, Bayesian confidence propagation neural network, and multi-item gamma Poisson shrinker for signal detection. Additionally, subgroup and sensitivity, along with logistic regression, were performed. Weibull distribution and log-rank testing were used to assess event timing.

Results: A total of 30,689 ADEs were identified in FAERS, spanning 27 system organ classes. Expected signals such as cough, dysphonia, and bronchitis were confirmed. Unexpected events included dyspnea, visual and memory impairment, coronary artery embolism, and asthmatic crisis. Sex-stratified analysis revealed female-specific risks (eg, malaise, bronchitis, alopecia, weight gain) and male-specific risks (eg, dysuria, myocardial infarction). Younger patients (<18 years) were at higher risk for asthmatic crisis, whereas older patients (>65 years) showed a protective effect. The median onset of ADEs was 55 days. Distinctive signals emerged from JADER (eg, pneumonia, liver injury) and CVARD (eg, hemoptysis, hypothyroidism).

Conclusions: This multi-database analysis highlights the need for continuous pharmacovigilance for budesonide/formoterol. The identification of novel ADE signals emphasizes the importance of vigilant monitoring, especially during early treatment, to enhance safety and therapeutic outcomes.

Keywords: Adverse drug events; Asthma; Budesonide/formoterol; Disproportionality analysis; Real-world analysis.

Conflict of interest statement

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

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doi: 10.1016/j.ejim.2026.106736. Online ahead of print.

Chronic obstructive pulmonary disease (COPD) and cardiovascular comorbidities: Shedding light on key interactions and therapeutic approaches

Giulia M Stella [1], Francesco R Bertuccio [2], Valentina Conio [3], Chandra Bortolotto [4], Ilaria Salzillo [5], Edoardo Destefanis Gallo [5], Vito D'Agnano [6], Fabio Perrotta [6], Alice Maccarini [7], Angelo G Corsico [2], Simone Savastano [8], Antonio Bozzani [5]

Affiliations Expand

- PMID: 41654418

- DOI: 10.1016/j.ejim.2026.106736

Abstract

Chronic obstructive pulmonary disease (COPD) is often associated with cardiovascular disease and the both conditions share common risk factors (smoke), associated pathophysiological mechanisms (pulmonary hyperinflation and vasoconstriction, systemic inflammation and sympathetic activation) and drug use (beta agonists and/or antagonists, steroids, amiodarone). Moreover, COPD is known to be linked to peripheral arterial disease (PAD), mainly represented by aneurysmal dilations. Overall, this chronic immune-inflammatory context might be related to the growth and expansion of malignant clones with specific and well-known biologic traits. Recent improvement in the knowledge of molecular basis of COPD, heart diseases and PAD have pointed out a strong, complex and fascinating relationship linking these conditions, not simply definable as comorbidities. From these premises, we here aim at discussing on the novel and emerging integrated therapeutic perspectives, in some instances exploited from immune-oncology, which strongly deserve a multidisciplinary clinical management.

Keywords: COPD; Cardiovascular pathology; Immune-inflammatory context; PAD; Personalized medicine.

Conflict of interest statement

Declaration of competing interest All authors declare that they have no conflicts of interest to declare. Dr. F. Bertuccio and Prof. G.M. Stella

Supplementary info

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Cite

3

Allergy

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. 2026 Feb 7.

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Update on Non-Biological and RNA-Based Therapeutics in Chronic Inflammatory Diseases: Precision Medicine Through Small Molecules

F Roth-Walter [1], I M Adcock [2], C Benito-Villalvilla [3 4], R Bianchini [1], L Bjermer [5], G Caramori [6], L Cari [7], K F Chung [8], Z Diamant [9 10 11], I Eguiluz-Gracia [12], E F Knol [13], M Jesenak [14], F Levi-Schaffer [15], G Nocentini [7], L O'Mahony [16 17 18], O Palomares [3], F Redegeld [19], M Sokolowska [20], B Van Esch [19], M Zurlo [15], C Stellato [21]

Affiliations Expand

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- DOI: 10.1111/all.70235

Abstract

In the last decades, critical advancements in research technology and knowledge on disease mechanisms steered therapeutic approaches for chronic inflammatory diseases towards unprecedented target specificity. For allergic and chronic lung diseases, biologic drugs pioneered this goal, acquiring on the way-through the clinical use of monoclonal antibodies-a deeper understanding of how inflammatory and immune pathways are configured in disease-specific patterns. In this biomarker-driven approach, synthetic small molecule drugs (SMDs) were perceived as lagging behind in innovation for their relative lack of specificity. This was, however, mostly due to a shift in focus towards biologics rather than true obsolescence of SMDs. In the same timeframe, in fact, advances in structural biology and medicinal chemistry, bioinformatics and artificial intelligence held steadily SMDs' innovation and relevance. The use of kinase inhibitors, well established in the treatment of cancer and rheumatological diseases, is now approved for some allergic skin diseases and is approaching asthma and COPD with several clinical trials; moreover, new therapeutics targeting mast cell receptors and molecules involved in innate immunity are entering preclinical and clinical testing. Alongside, the portfolio of biologics is harboring the expansion of RNA therapeutics, which gained global recognition during the COVID-19 pandemic due to RNA vaccines. Different types of RNA therapeutics, including those based on different non-coding RNAs, are advancing to agency approval and market, thanks to

improvements in molecule stability and delivery systems. In summary, the evidence presented in this position paper illustrates that precision medicine is becoming a goal shared between synthetic SMDs and biologics, both protein/antibody-based and RNA therapeutics. We review the current state, unmet needs and opportunities within this evolving landscape, highlighting how small molecular species, both synthetic as SMDs and biologic in nature as RNA, can contribute to the precision medicine approach along with protein and antibody-based biologics and cell therapies.

Keywords: RNA-based therapies; biomarker-driven drug development; chronic inflammatory diseases; kinase inhibitors; precision medicine; small molecule drugs.

- 333 references

Supplementary info

Grants and fundingExpand

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Clin Exp Med

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. 2026 Feb 7.

doi: 10.1007/s10238-026-02065-y. Online ahead of print.

Integrating multi-source data and machine learning to Decipher the psoriasis-COPD comorbidity

YuFeng He[#1,2], LinMei Xiang[#1,2], YanCheng He[#1,2], GuanJie Wang[1,2], HuiLi Jiang[1,2], YuZe Li[1,2], XiaoYi Qi[3,4]

Affiliations Expand

- PMID: 41653319

- DOI: 10.1007/s10238-026-02065-y

No abstract available

Keywords: Biomarkers; COPD; Comorbidity; Diagnostic Model; Inflammatory Pathways; Machine Learning; Psoriasis; Risk Factors.

Conflict of interest statement

Declarations. Competing interests: The authors declare no competing interests. Ethics approval and consent to participate: This work was approved by Ethics Review Board of National Center for Health Statistics. Written informed consent has been obtained from all NHANES participants. Consent for publication: Not applicable.

- **49 references**

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Editorial

Thorax

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doi: 10.1136/thorax-2025-224645. Online ahead of print.

Similar movements, different messages: are sit-to-stand tests interchangeable in people with COPD?

Paulien Mellaerts [1], Thierry Troosters [2], Simone Pancera [2]

Affiliations Expand

- **PMID: 41651657**

- **DOI: 10.1136/thorax-2025-224645**

No abstract available

Keywords: Exercise; Pulmonary Disease, Chronic Obstructive; Pulmonary Rehabilitation.

Conflict of interest statement

Competing interests: None declared.

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6

BMJ Open

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Recurrent COVID-19 infection and the risk of exacerbation, mortality and long covid in patients with chronic obstructive pulmonary disease: a nationwide retrospective cohort study

Hyun Woo Lee [1], Kwang Yong Choi [2], Jung-Kyu Lee [3], Won Seo Yoon [4], Youlim Kim [5], Kwang-Ha Yoo [6], Yong Il Hwang [7]

Affiliations Expand

- **PMID: 41651528**

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Free article

Abstract

Objectives: To evaluate how recurrent COVID-19 infections influence the clinical course of patients with chronic obstructive pulmonary disease (COPD), focusing on moderate-to-severe symptom flare-ups, all-cause mortality and long covid.

Design: Nationwide retrospective cohort study.

Setting: Korean Health Insurance Review and Assessment database covering the entire Korean population between January 2020 and December 2023.

Participants: A total of 313 760 patients aged ≥40 years who met an established operational definition of COPD based on diagnostic codes and inhaled therapy prescriptions. Patients were stratified by the number of COVID-19 events: none, one, two or three or more.

Primary and secondary outcome measures: The primary outcomes were moderate-to-severe COPD exacerbations and all-cause mortality. The secondary outcome was long covid, defined by WHO criteria using International Classification of Diseases (ICD)-10 codes persisting ≥2 months within 3 months after infection.

Results: Among 313 760 patients, 154 095 (49.1 %) experienced at least one COVID-19 event. COVID-19 infection was associated with increased risk of exacerbations (adjusted HR (aHR) 1.64, 95% CI 1.62 to 1.66) and mortality (aHR 2.25, 95 % CI 2.19 to 2.31). Risk rose progressively with repeated infections, reaching an aHR of 2.41 for exacerbations and 2.93 for mortality after three or more events. Long covid was more frequent in patients with multiple infections, but most cases occurred after the first event, with diminishing occurrence after subsequent infections.

Conclusion: Recurrent COVID-19 infections in patients with COPD were linked to progressively higher risk of exacerbations and mortality, whereas the burden of long covid was greatest after the first infection. Preventing the initial infection and reducing reinfection risk remain critical components of COPD care in the post-COVID-19 era.

Keywords: COVID-19; Mortality; Pulmonary Disease; Pulmonary Disease, Chronic Obstructive.

Conflict of interest statement

Competing interests: None declared.

Supplementary info

MeSH termsExpand

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J Allergy Clin Immunol Pract

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Novel diagnostic approaches for eosinophilic lung diseases

Alexander Ruzic [1], Merritt L Fajt [2], Mark Hammer [3], Manali Mukherjee [4]

Affiliations Expand

- PMID: 41651409

- DOI: 10.1016/j.jaip.2026.01.023

Abstract

Eosinophilic lung diseases (ELDs) represent a heterogeneous group of airway and parenchymal disorders unified by eosinophilic inflammation but distinguished by diverse clinical features, mechanisms of persistence, and variable therapeutic responses. Traditional diagnostic tools-including blood eosinophil counts, bronchoalveolar lavage, sputum cytology, and exhaled nitric oxide predict the eosinophilic/T2 burden of the disease but often fail to distinguish IL-5-dependent from IL-5-independent pathways, overlook compartment-specific inflammation, and inadequately predict/monitor response to targeted biologics. The inconsistent efficacy of IL-5/IL-5R-directed monoclonal antibodies despite normalisation of blood eosinophils across the ELD spectrum, viz. robust clinical response in eosinophilic granulomatosis with polyangiitis and hypereosinophilic syndrome, partial in asthma, and largely absent in COPD-underscores the limitations of current biomarkers and the need for refined precision endotyping. To address these gaps, emerging biomarker platforms move beyond eosinophil enumeration to define upstream drivers, activation states, tissue localization, and immune pathways sustaining persistent eosinophilia. These advances include non-invasive tools such as lateral-flow devices for assaying eosinophil peroxidase (eosinophil activity biomarker), breathomics and volatile organic compound profiling, cytokine-level inflammatory mapping, and composite biomarker models integrating airway, blood, and molecular signatures. In parallel, functional imaging modalities-including hyperpolarized gas MRI, phase-resolved functional lung MRI, and quantitative computed tomography (CT)-provide non-invasive, high-resolution visualization of regional ventilation, perfusion, and inflammation. This enables clinicians to "look into the lungs" and offer powerful stand-alone or complementary biomarker capability. Collectively, these innovations mark a shift toward mechanistically informed, tissue-specific, multimodal biomarker strategies that refine diagnosis, improve therapeutic selection, and enhance monitoring across the ELD spectrum, advancing the promise of precision medicine.

Keywords: COPD; EGPA; HES; asthma; biomarkers; eosinophils; lung diseases.

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Review

Heart Lung

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. 2026 Feb 5:78:102733.

doi: 10.1016/j.hrtlng.2026.102733. Online ahead of print.

How usual is usual care in Chronic Obstructive Pulmonary Disease trials? A systematic review on quality of reporting and validity of comparator interventions

Ana Paula Coelho Figueira Freire [1], Mark R Elkins [2], Marceli Rocha Leite [3], Ryan Galindo [4], Italo Ribeiro Lemes [5], Hailey McNeill [4], Bo Warner [4], Jacob Crumb [4], Nathan Herde [4], Heloisa Rocha Reverte Siqueira Ribeiro [6], Karen Roemer [4], Francis Lopes Pacagnelli [3], Rafael Z Pinto [7]

Affiliations Expand

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- DOI: 10.1016/j.hrtlng.2026.102733

Abstract

Background: 'Usual care' is a term that can refer to a variety of control conditions in randomized controlled trials (RCTs). The lack of standardization of usual care groups can lead to problems for clinical decision-making.

Objectives: 1) Systematically describe the types and characterizations of "usual care" interventions in COPD RCTs. 2) Determine how well RCTs report usual care interventions and the extent to which COPD guideline-recommended treatment components are a part of usual care interventions.

Methods: Systematic review design. Two investigators screened studies and independently extracted data. We extracted type of usual care described, quality of reporting, and classification of usual care components as validated (i.e., aligned with guidelines) or unvalidated comparators.

Results: We included 233 studies. The most frequently described usual care intervention included patient education (n = 72, 31%) and continued care with the general practitioner (n = 67, 29%). Only 7% of the studies provided a complete description of the usual care intervention. Almost half of usual care interventions (49%) were deemed unvalidated. Higher PEDro scores were associated with greater odds of the intervention being validated (Exp(B) = 1.32; 95% CI: 1.04 to 1.66).

Conclusion: There is significant variability and frequent lack of reporting in the characterization of 'usual care' comparators in RCTs involving patients with COPD. Usual care is often poorly described, inconsistently delivered, and commonly not aligned with clinical guidelines. Higher quality trials had better odds of providing valid usual care.

Keywords: COPD; Randomized clinical trials; Standard of care; Usual care.

Conflict of interest statement

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

Supplementary info

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Thorax

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Understanding risk of poor outcomes in adults hospitalised with respiratory syncytial virus infection: evidence from a multicentre UK cohort

Tommaso Morelli [1 2], Martha Purcell [3 2], Jon Panaguiton [4], Rachel Patel [5], Sharon Weinberg [6], George Hulston [6], Hans Siy-Yap [6], Emma A Davies [6], Anluan Keating [3 2], Ida Saidy [6], Anna Freeman [3 2], Karl J Staples [3 2], Pedro Rodrigues [7], Abigail Jones [7], Alexander Allen [7], Aruna T Bansal [8], Stefan J

Marciniak [9 10], Neil J Greening [11], Michael G Crooks [12], Philip Mitchelmore [5], Salman H Siddiqui [13], James Myerson [14], Matthew J Pavitt [14], Cyrus Daneshvar [15], James D Chalmers [16], Paul H Lee [7], Tom Lewis [5], Tristan W Clark [3 2], Sarah Denny [17], Dexter J Wiseman [17], Huw Ellis [6], Tom Ma Wilkinson [3 2]; UNIVERSAL Study Group; Universal Study Group

Collaborators, Affiliations Expand

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- DOI: 10.1136/thorax-2025-224192

Free article

Abstract

Background: Respiratory syncytial virus (RSV) causes substantial winter pressure on adult services. In the UK, RSV vaccination currently targets adults aged ≥75 years and care home residents; it remains uncertain whether this age criterion alone meaningfully discriminates risk of poor outcome among adults hospitalised with RSV.

Methods: We pooled three UK hospital cohorts (one prospective, two retrospective) of adults admitted with acute respiratory infection (ARI) and PCR-confirmed RSV. The primary outcome was intensive care unit/high dependency unit (ICU/HDU) admission or all-cause mortality within 60 days. Prespecified predictors (age, sex and comorbidities) entered a least absolute shrinkage and selection operator (LASSO) penalised logistic regression; selected variables were refitted using standard logistic regression. Discrimination, calibration and decision-analytic performance were assessed using 1000-bootstrap internal validation and decision-curve analysis.

Results: Among 334 adults, 37 (11.1%) experienced the primary outcome. An age-only rule mirroring current UK vaccine age-eligibility (≥75 years) demonstrated only modest discrimination (optimism-adjusted area under the receiver operating characteristic curve (AUC) 0.58, 95% CI 0.48 to 0.65) and a compressed distribution of predicted risks. A four-predictor model-including age, COPD, active/previous cancer and dementia-achieved higher discrimination AUC (0.77 (0.69 to 0.85)), a wider spread of predicted risks and the greatest net benefit across clinically plausible escalation thresholds (5-20%).

Conclusions: In adults hospitalised with RSV-associated ARI, simple age-based heuristics-including the UK ≥75-year threshold-showed only modest ability to discriminate risk of ICU/HDU admission/60-day mortality once hospitalised. Comorbidity-inclusive approaches may provide more informative hospital-level risk stratification and warrant evaluation in future RSV vaccine-effectiveness and outcome studies. Any application requires external validation, more systematic RSV testing and comparison with physiology-based scores in larger, vaccinated cohorts.

Keywords: COPD Exacerbations; Clinical Epidemiology; Mortality; Respiratory Infection; Viral infection.

Conflict of interest statement

Competing interests: SHS has received fees for advisory services/speaker fees from AstraZeneca, Chiesi, GSK, Areteia Therapeutics, CSL Behring and Medscape. KJS: reports research grants from AstraZeneca and EpiEndo; speakers' honouraria from AstraZeneca. TWC has received research grants from BioFire Diagnostics, bioMérieux, QIAGEN, Sense Biodetection and Inflammatix; speaker fees, honouraria and travel reimbursement from BioFire Diagnostics, bioMérieux, QIAGEN, Cepheid and Janssen; consultancy fees from bioMérieux, QIAGEN, Cepheid, Roche, Janssen and Synairgen; has served on advisory boards for Cepheid, Roche, Roche Diagnostics, Janssen, GSK, Shionogi, Sanofi and Seqirus; member of an independent data monitoring committee for a trial sponsored by Roche; holds shares in Synairgen plc. TMW has received grants and fees from AstraZeneca, BergenBio, Boehringer Ingelheim, Chiesi, GSK, Janssen, Olam, MMH, Synairgen, Union Chimique Belge and Valneva. All other authors declare no competing interests.

Cite

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Review

Respir Med

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Influence of Chronic Obstructive Pulmonary Disease on Cardiovascular Outcomes and Mortality benefits of Sodium Glucose Co-transporter Inhibitors in Heart Failure Patients: A Systematic Review and Meta-Analysis

Rohab Sohail [1], Zaraq Ahmad Khan [2], Ridda Khattak [3], Prakhar Anand [4], Vyom Patel [5], Marcos Alberto [6], Mark Georgy [7], Karan Dhand [8], Andrei Feldiorean [9], Seemab Fatima [10], Sana Murtaza [11], Manjeet Singh [12], Syed Nazeer Mehmood [13]

Affiliations Expand

- PMID: 41643785

- DOI: 10.1016/j.rmed.2026.108685

Abstract

Background: By 2030, healthcare expenditures related to congestive heart failure (CHF) in the United States are projected to surpass $70 billion. Despite substantial advances in guideline-directed medical therapy, morbidity and mortality remain unacceptably high, particularly among patients with concomitant chronic obstructive pulmonary disease (COPD), a comorbidity reported in approximately 5%-41% of individuals with CHF. Although COPD is independently associated with worse CHF outcomes, its influence on the mortality benefit conferred by sodium-glucose cotransporter-2 (SGLT-2) inhibitors remains poorly defined.

Objective: To evaluate whether COPD alters the cardiovascular and mortality benefit of SGLT-2 inhibitors in CHF patients.

Methods: PubMed, Cochrane and Google Scholar were searched from inception to February 2025 to identify studies meeting inclusion criteria. Review Manager was employed to calculate results in the form of relative risk (RR) with 95% confidence interval.

Results: Our analysis of 15,058 patients (1,725 (11%) COPD patients) showed that COPD was associated with significantly higher risks of composite outcomes (RR=1.63; 95% CI: 1.49-1.79; p<0.00001), CV mortality (RR=1.62; 95% CI: 1.39-1.88; p<0.0001), heart failure hospitalization (RR=1.84; 95% CI: 1.40-2.40; p<0.00001), and all-cause mortality (RR=1.59; 95% CI: 1.42-1.78; p<0.00001). Additionally, adverse outcomes were more frequent in COPD patients, including volume depletion (RR=1.34; 95% CI: 1.25-1.51; p<0.00001), and adverse renal events (RR=1.46, 95% CI: 1.17-1.82; P=0.0007).

Conclusion: Our analysis indicates that heart failure (HF) patients with COPD may drive a somewhat attenuated benefit from SGLT-2 inhibitors, underscoring a clinical profile that merits careful consideration.

Keywords: Cardiovascular Outcomes; Chronic Obstructive Pulmonary Disease; Drug-related adverse effects; Heart failure; Sodium Glucose Co-transport Inhibitors.

Conflict of interest statement

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

Supplementary info

Publication typesExpand

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Review

Expert Rev Clin Immunol

. 2026 Feb 4.

doi: 10.1080/1744666X.2026.2625967. Online ahead of print.

The role of glucagon-like peptide-1 receptor agonists and sodium-glucose cotransporter-2 inhibitors in Chronic obstructive pulmonary disease

Jordina Sy Mah [1], Pei Chia Eng [2], Chioma Izzi-Engbeaya [3 4], Lydia J Finney [1 4]

Affiliations Expand

- PMID: 41640042

- DOI: 10.1080/1744666X.2026.2625967

Abstract

Introduction: Chronic Obstructive Pulmonary Disease (COPD) is a leading cause of morbidity and mortality worldwide, with type 2 diabetes mellitus (T2DM), obesity and cardiovascular disease being common co-morbidities associated with worse outcomes. Glucagon-like peptide-1 receptor agonists (GLP-1RAs) and sodium-glucose cotransporter-2 (SGLT2) inhibitors which were originally developed for treatment of T2DM and/or obesity, have recently been shown to reduce exacerbations in observational studies of patients with COPD, suggesting that repurposing GLP-1RAs and SGLT2 inhibitors could improve clinical outcomes in COPD.

Areas covered: COPD, diabetes and obesity share several common inflammatory pathways, including macrophage dysfunction, inflammasome activation and metabolic dysregulation. Here we review the pharmacology, pre-clinical and emerging clinical data which could support repurposing of GLP-1RAs and SGLT2 inhibitors for use in COPD through a search of articles in PubMed and Medline from 01/1950 to 08/2025.

Expert opinion: Reevaluating metabolic therapeutic targets has the potential to redefine treatment strategies for patients with COPD and metabolic comorbidities. Potential mechanisms of action could be via modulation of the NLRP3 inflammasome and macrophage polarization or better control of co-morbid conditions. However, randomized controlled trials and mechanistic studies are needed to confirm these observational findings and elucidate underlying mechanisms.

Keywords: Chronic obstructive pulmonary disease (COPD); Glucagon-like peptide-1 (GLP-1) receptor agonist; Sodium-glucose cotransporter -2 (SGLT2) inhibitor; exacerbations; inflammation; obesity; type 2 diabetes.

Supplementary info

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Review

Eur Respir Rev

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. 2026 Feb 4;35(179):250167.

doi: 10.1183/16000617.0167-2025. Print 2026 Jan.

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

Alvaro A Cruz [1], Kevin J Mortimer [2 3 4], Ingrid T Sepúlveda-Pachón [5], Hilde Vroling [6], Charles Williams [7]

Affiliations Expand

- **PMID: 41638875**

- **DOI: 10.1183/16000617.0167-2025**

Free article

Abstract

Background: COPD is associated with an increased risk of infections, such as herpes zoster, potentially leading to greater morbidity and mortality. This systematic review assessed the evidence on herpes zoster burden in COPD.

Methods: A global systematic literature review and meta-analysis was conducted (MEDLINE/Embase, 2003-2024) on herpes zoster burden (incidence, risk, complications, impact on COPD and healthcare resources) in adults aged ≥18 years with COPD.

Results: 22 studies on herpes zoster burden in COPD were included. The pooled herpes zoster incidence rate per 1000 person-years in adults with COPD aged ≥18 years was 10.98 (95% CI 8.28-14.56), increasing to 13.95 (10.80-18.02) in adults aged ≥50 years. The pooled risk ratio of developing herpes zoster was 1.49 (1.17-1.89) in adults aged ≥18 years with COPD and 1.86 (1.28-2.69) in COPD treated with corticosteroids. The pooled rate ratio of developing post-herpetic neuralgia (persistent pain lasting ≥90 days) was 1.50 (1.10-2.04) in adults with herpes zoster and COPD *versus* with herpes zoster alone. Herpes zoster was linked to higher healthcare costs and resource use, and may be associated with COPD exacerbations. Study designs, settings, case definitions, sample sizes and study periods differed, resulting in heterogeneity.

Conclusions: Adults with COPD have an increased risk of herpes zoster and complications and an associated burden on healthcare systems, with higher risks in those on corticosteroids. Herpes zoster vaccines offer effective protection, including for adults with COPD, and could help reduce the disease and its economic burden.

Conflict of interest statement

Conflict of interest: A.A. Cruz declares grants and sponsorship from GSK to support ProAR Foundation, consulting or lecture fees from Abdi-Ibrahim, AstraZeneca, Boehringer Ingelheim, Chiesi, Crossject, Eurofarma, Farmoquimica, Glennmark, GSK, Mylan, Novartis and Sanofi for Asthma-related activities. K.J. Mortimer declares grants and sponsorship from AstraZeneca and GSK to support the Global Asthma Network, consulting fees from AstraZeneca and GSK on Asthma and COPD-related advisory boards and honorarium from GSK for a lecture on improving vaccine access for people with asthma, outside the submitted work. I.T. Sepúlveda-Pachón is employed by P95/Pallas. P95/Pallas received funding from GSK for the submitted work. P95/Pallas holds/held contracts with AstraZeneca, GSK, Pfizer, Sanofi, Seqirus, Merck, Takeda, Orchard, Biomarin, Daiichi, Bavarian Nordic and Bayer (work for the non-GSK companies was not related to herpes zoster). H. Vroling is employed by P95/Pallas. P95/Pallas received funding from GSK for the submitted work. P95/Pallas holds/held contracts with AstraZeneca, GSK, Pfizer, Sanofi, Seqirus, Merck, Takeda, Orchard, Biomarin, Daiichi, Bavarian Nordic and Bayer (work for the non-GSK companies was not related to herpes zoster). C. Williams is employed by GSK. The authors declare no other financial and nonfinancial relationships and activities.

Supplementary info

Publication types, MeSH termsExpand

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BMJ Open

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. 2026 Feb 4;16(2):e104689.

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Efficacy and safety of pharmacotherapy in COPD with arteriosclerosis: protocol for a systematic review and network meta-analysis

Xiaotong Wei [1], Siping Wang [1], Hongpeng Yu [2], Li Shi [3]

Affiliations Expand

- PMID: 41638743
- PMCID: PMC12878226
- DOI: 10.1136/bmjopen-2025-104689

Abstract

Introduction: Chronic obstructive pulmonary disease (COPD) is associated with increased cardiovascular morbidity and mortality. Arterial stiffness, an independent predictor of cardiovascular risk, enables detection of early vascular alterations preceding major clinical outcomes, making it critical for COPD management. Pharmacotherapy currently represents a major focus of therapeutic research for arterial stiffness modulation in this population. However, while current evidence supports specific pharmacological approaches, such as statins' vascular modulation in certain subgroups, their clinical efficacy remains inconclusively demonstrated across trials.

Methods and analysis: To address this critical knowledge gap, we propose a Preferred Reporting Items for Systematic Reviews and Meta-Analyses-compliant systematic review and meta-analysis focusing specifically on COPD patients with concomitant arterial stiffness, aiming to evaluate the efficacy of vascular-targeted

pharmacotherapies (statins, phosphodiesterase-4 inhibitors, long-acting bronchodilators). We conduct an extensive search across various databases (including MEDLINE and Embase, the Cochrane Central Register of Controlled Trials, Epistemonikos, Scopus, Web of Science Core Collection and China National Knowledge Infrastructure). The search will focus on randomised controlled trials (RCTs) of pharmacotherapy interventions associated with concurrent arteriosclerosis in COPD patients published from the date of creation of these databases to 1 May 2025. The primary outcome will be arterial pulse wave velocity, with secondary outcomes encompassing vascular function biomarkers, COPD clinical characteristics, systemic inflammatory markers (including tumour necrosis factor-alpha), clinical remission rate and adverse events. Two independent reviewers will systematically search seven biomedical databases using validated strategies, followed by risk-of-bias assessment (Cochrane RoB 2.0) and evidence quality grading (Grading of Recommendations Assessment, Development and Evaluation). Subgroup analyses will be initiated contingent on identification of significant statistical heterogeneity. Stratification variables may include, but are not limited to, disease severity (Global Initiative for Chronic Obstructive Lung Disease (GOLD) criteria), cumulative smoking exposure (quantified in pack-years) and comorbidity burden (eg, cardiovascular/metabolic disorders). Both conventional pairwise and network meta-analyses will be implemented to hierarchically rank therapeutic interventions and identify the optimal regimen.

Ethics and dissemination: This systematic review protocol is based on published RCTs and does not contain private information about the patient; therefore, ethical approval is not required.

Prospero registration number: CRD42024628739.

Keywords: Chronic Disease; Meta-Analysis; Pulmonary Disease.

Conflict of interest statement

Competing interests: None declared.

- 34 references
- 1 figure

Supplementary info

MeSH terms, SubstancesExpand

Full text links

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Cite

Cardiol Rev

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. 2026 Feb 4.

doi: 10.1097/CRD.0000000000001191. Online ahead of print.

Temporal Trends of Mortality Associated With Coronary Artery Disease-Chronic Obstructive Pulmonary Disease Comorbidity in the United States

Muhammad Shaheer Bin Faheem [1], Syed Tawassul Hassan [2], Tehreem Asghar [3], Own E Mohammad Najmi [4], Sivaram Neppala [5], M Chadi Alraies [6]

Affiliations Expand

- PMID: 41634924

- DOI: 10.1097/CRD.0000000000001191

Abstract

Coronary artery disease (CAD) and chronic obstructive pulmonary disease (COPD) exhibit a significant bidirectional relationship, whereby the presence of 1 condition significantly increases the risk of developing the other, resulting in their frequent co-occurrence. We seek to assess demographic and geographic disparities and examine mortality trends from CAD and COPD in the United States from 1999 to 2023. We retrieved mortality data for patients with CAD and COPD from the Centres for Disease Control and Prevention, Wide-Ranging Online Data for Epidemiologic Research Multiple Cause of Death database from 1999 to 2023. Age-adjusted mortality rates (AAMRs) per 100,000 population were calculated, and trends were analyzed using the Joinpoint regression model to estimate the annual percent change (APC) in AAMR. Mortality data were stratified by age, sex, race/ethnicity, urbanization, and Census regions. A total of 1,471,054 mortalities showed the existence of CAD and COPD on death certification. The AAMR decreased from 61.1 to 41.8 from 1999 to 2023. The AAMR declined sharply until 2018 (APC -1.9), followed by a significant incline till 2021 (APC 4), after which it continued to decrease significantly until 2023 (APC -6.12). AAMR was twofold greater in males (71.7) than in females (34.3). Among races/ethnicities, non-Hispanic Whites (52.7) had the top AAMR. Mortality rates were 13 times greater among older adults than among middle-aged adults. From geographics, nonmetropolitan areas (63.3) and the Midwest region (55.2) had the highest AAMRs. These disparities across demographic and geographical variables necessitate appropriate resource allocation and targeted interventions to reduce the CAD-COPD mortality burden.

Keywords: CDC Wonder; chronic obstructive pulmonary disease; coronary artery disease; mortality.

Conflict of interest statement

Disclosure: The authors declare no conflict of interest.

- **54 references**

Full text links

Proceed to details

Cite

15

Sci Rep

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. 2026 Feb 3.

doi: 10.1038/s41598-026-38579-4. Online ahead of print.

Correlation analysis of chest HRCT quantitative parameters, exhaled nitric oxide, and pulmonary function in patients with chronic obstructive pulmonary disease

Ya Shen [# 1], Jin-Feng Gu [# 2], Jing-Feng Shi [# 1], Li-Li Yang [1], Guo-Lan Ning [1], Zi-Xiao Cao [1], Xiao-Bao Teng [3], Ming-Feng Han [4]

Affiliations Expand

- **PMID: 41634360**

- **DOI: 10.1038/s41598-026-38579-4**

Free article

No abstract available

Keywords: Chronic obstructive pulmonary disease; Exhaled nitric oxide; High-resolution CT; Pulmonary function.

Conflict of interest statement

Declarations. Competing interests: The authors declare no competing interests. Ethics approval and consent to participate: This study was approved by the Ethics Committee of Fuyang Second People's Hospital (Fuyang Infectious Disease Clinical College of Anhui Medical University) (Approval No.: 20230106001). All procedures complied with the ethical standards outlined in the Declaration of Helsinki. Written informed consent was obtained from each participant.

- 42 references

Full text links

Proceed to details

Cite

16

Expert Rev Vaccines

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. 2026 Feb 3:2626916.

doi: 10.1080/14760584.2026.2626916. Online ahead of print.

Cost-effectiveness of a single dose of the adjuvanted RSVPreF3 vaccine for the prevention of respiratory syncytial virus (RSV) among patients with chronic obstructive pulmonary disease in Italy

Anna Puggina [1], Filippo Rumi [2], Eleftherios Zarkadoulas [3], Giancarlo Lorenzini [1], Fabiano Di Marco [4], Giovanna Elisa Calabró [5 6]

Affiliations Expand

- PMID: 41631651

- DOI: 10.1080/14760584.2026.2626916

Free article

Abstract

Background: Chronic obstructive pulmonary disease (COPD) increases the risk of severe respiratory syncytial virus (RSV)-related disease. This analysis evaluated the potential public health impact and cost-effectiveness of RSV vaccination with a single dose of adjuvanted RSVPreF3 vaccine over five years in people aged 60-74 years with COPD in Italy.

Research design and methods: A static multi-cohort Markov model estimated RSV-related events, costs, and quality-adjusted life-years (QALY) over five years in people aged 60-74 years with COPD in Italy vaccinated with one dose of adjuvanted RSVPreF3, versus no vaccination. Vaccine efficacy and waning data were based on AReSVi-006 Phase III clinical trial results. Other input data came from published literature and official databases. Sensitivity analyses were conducted.

Results: A single dose of adjuvanted RSVPreF3 vaccine (75% coverage) was projected to reduce RSV-related acute respiratory infections by 29% and RSV-related hospitalizations and deaths by 38% among patients with COPD aged 60-74 years in Italy. The incremental cost-effectiveness ratio (health system perspective) was €1,306/QALY.

Conclusions: These results indicated that a single dose of adjuvanted RSVPreF3 vaccine in patients with COPD aged 60-74 years in Italy is a cost-effective preventive option that could potentially reduce RSV-related disease burden and costs over five years.

Keywords: Chronic obstructive pulmonary disease; Italy; cost-effectiveness; respiratory syncytial virus; vaccination.

17

Respir Care

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. 2026 Feb 3:19433654251412342.

doi: 10.1177/19433654251412342. Online ahead of print.

High-Flow Nasal Cannula Reduces Ventilatory Requirements During Endobronchial Ultrasound

Jeffrey Miechels [1], Niels J M Claessens [2], Mark V Koning [3]

Affiliations Expand

- **PMID: 41631620**
- **DOI: 10.1177/19433654251412342**

Abstract

Background: High-flow nasal cannula (HFNC) reduces dead-space ventilation, but this effect is diminished by open-mouth breathing and partial airway obstruction. Consequently, it is uncertain whether HFNC provides respiratory support during endobronchial ultrasound (EBUS) procedures.

Methods: A single-center randomized controlled crossover study was conducted at the Rijnstate Hospital, Arnhem, the Netherlands, from November 2022 to August 2024.Patients with severe COPD (Gold III/IV) were evaluated to determine if HFNC reduces dead space ventilation during an EBUS procedure. Exclusion criteria were known neurodegenerative conditions, allergies to propofol or esketamine, pregnancy, upper-airway obstructions, or severe pulmonary hypertension.Subjects received two sequences of HFNC flow (30 and 70 L/min or vice versa) during EBUS.The primary outcome was CO_2 washout, determined by a 60-s capnography trace with and without HFNC flow to measure the difference in inspiratory, end-tidal CO_2, and β-angle.

Results: Twenty subjects with severe COPD (Gold III/IV) were included (Group A *n* = 10; Group B *n* = 10), of which one could not complete the bronchial measurements because of an obstructing carcinoma. CO_2 washout at carina was observed at 70 L/min of HFNC flow, demonstrated by a reduced inspiratory CO_2 of mean 6.0 mm Hg (95% CI: 4.5-8.3, *P* < .001) and end-tidal CO_2 of 5.3 mm Hg (95% CI: 2.3-7.5, *P* = .002), but not at 30 L/min of HFNC flow (mean inspiratory CO_2 difference of 1.5 mm Hg (95% CI: -2.3 to 6.0, *P* = .69) and mean end-tidal CO_2 difference of 0.8 mm Hg (95% CI: -2.3 to 3.0, *P* = .35). A flow of 70 L/min reduced inspiratory CO_2 in the left main bronchus (mean = 5.3 mm Hg; 95% CI: 2.3-8.3, *P* < .001), but not the end-tidal CO_2 (mean = 3.0 mm Hg; 95% CI: 0.0-6.0, *P* = .07).

Conclusions: An HFNC flow of 70 L/min reduced dead-space ventilation in subjects with severe COPD undergoing EBUS procedures during deep sedation, suggesting respiratory support during this procedure.

Keywords: electrocardiogram; endobronchial ultrasound; high-flow nasal cannula; millimeters of mercurybreathing frequency.

18

Eur Respir J

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. 2026 Feb 5;67(2):2501326.

doi: 10.1183/13993003.01326-2025. Print 2026 Feb.

Whole lung directed anti-muscarinic therapy improves small airway dysfunction in COPD patients

Omar S Usmani [1], Dimitrios Toumpanakis [2], Sally Meah [3], Vincent Mak [4], Martyn F Biddiscombe [3]

Affiliations Expand

- PMID: 41309266
- PMCID: PMC12873461
- DOI: 10.1183/13993003.01326-2025

Abstract

Directed distribution of inhaled therapy to diseased lung regions improves patient lung function. Small airway disease should be considered a treatable trait and actively sought in the clinic, leading to targeting therapeutic treatment to this region. https://bit.ly/4oHAwGM

Conflict of interest statement

Conflict of interest: O.S. Usmani reports support for the present study from Boehringer Ingelheim, grants from AstraZeneca, Boehringer Ingelheim, Chiesi and GlaxoSmithKline, consultancy fees from AstraZeneca, Cipla and Mereo Biopharma, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Mundipharma, Sandoz, Takeda, Cipla, Covis, Novartis, Orion, Menarini, UCB, Trudell Medical, Deva and Kamada, and leadership roles with the European Respiratory Society, International Society of Aerosols in Medicine and the UK Inhaler Group. D. Toumpanakis reports support for the present study from Boehringer Ingelheim, and payment or honoraria for lectures, presentations, manuscript writing or educational events from Menarini, Chiesi, AstraZeneca and GlaxoSmithKline. S. Meah reports support for the present study from Boehringer Ingelheim. V. Mak reports support for the present study from Boehringer Ingelheim, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca and Chiesi, support for attending meetings from AstraZeneca and Chiesi, and leadership roles with the Primary Care Respiratory Society, NHS London, International Primary Care Respiratory Group and Rightbreathe.com. M.F. Biddiscombe reports support for the present study from Boehringer Ingelheim.

- 13 references

Supplementary info

Publication typesExpand

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Editorial

Eur Respir J

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. 2026 Feb 5;67(2):2502244.

doi: 10.1183/13993003.02244-2025. Print 2026 Feb.

Addressing the global challenges of COPD and asthma: a shared vision from the Global Initiative for Chronic Obstructive Pulmonary Disease (GOLD) and the Global Initiative for Asthma (GINA)

David M G Halpin [1 2], Refiloe Masekela [3 4 2], Claus F Vogelmeier [5], Obianuju B Ozoh [6], Alvaro A Cruz [7], Helen K Reddel [8 9 10], Arzu Yorgancioglu [11 12], Alvar Agusti [13 12]; Boards of Directors of the Global Initiative for Chronic Obstructive Lung Disease (GOLD) and Global Initiative for Asthma (GINA)

Affiliations Expand

- PMID: 41198399

- DOI: 10.1183/13993003.02244-2025

No abstract available

Conflict of interest statement

Conflict of interest: D.M.G. Halpin reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Inogen, Novartis, Pfizer, Sanofi and Menarini, and participation on a data safety monitoring board or advisory board with Chiesi and Synairgen. R. Masekela reports an unpaid leadership or fiduciary role as GINA scientific committee member. C.F. Vogelmeier reports grants from German Ministry of Education and Science (BMBF), AstraZeneca, Boehringer Ingelheim, Chiesi, CSL Behring, GlaxoSmithKline and Grifols, consultancy fees from Aerogen, AstraZeneca, Boehringer Ingelheim, CSL Behring, Chiesi, GlaxoSmithKline, Insmed, Menarini, Roche and Sanofi, and payment or honoraria for lectures, presentations, manuscript writing or educational events from Aerogen, AstraZeneca, Boehringer Ingelheim, CSL Behring, Chiesi, GlaxoSmithKline, Insmed, Menarini, Roche and Sanofi. O.B. Ozoh reports grants from National Institute of Health and Care Research (UK) and Medical Research Foundation, payment or honoraria for lectures, presentations, manuscript writing or educational events from Gerts

Pharma, and an unpaid leadership or fiduciary role as Board member of the Global Initiative for Chronic Obstructive Lung Disease (GOLD). A.A. Cruz reports consulting fees from AstraZeneca, Chiesi, GSK and Sanofi, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Chiesi, GSK, Sanofi and Eurofarma, support for attending meetings from AstraZeneca, and is a member of the Board of Directors of the Global Initiative for Asthma (GINA), President of Fundacao ProAR and member of the WHO Asthma Guideline Development Group. H.K. Reddel reports grants from GlaxoSmithKline, AstraZeneca, Sanofi and Chiesi, consultancy fees from AstraZeneca, Sanofi and Chiesi, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Getz, Cipla and Chiesi, support for attending meetings from AstraZeneca, participation on a data safety monitoring board or advisory board with AstraZeneca, GSK, Chiesi, Sanofi and Novartis, leadership role as Chair of the Science Committee for the Global Initiative for Asthma (GINA), and receipt of drugs for an investigator-sponsored study from AstraZeneca. A. Yorgancıoğlu reports unpaid leadership or fiduciary roles as GINA Board Member and ERS Vice President. A. Agusti reports grants from GSK, AZ, Chiesi and Menarini, consultancy fees from GSK, AZ, Chiesi, Roche and Menarini, payment or honoraria for lectures, presentations, manuscript writing or educational events from GSK, AZ, Chiesi, Roche, Menarini, Zambon and Glenmark, support for attending meetings from Roche, and leadership role as Chairman of the Board of Directors of GOLD.

Supplementary info

Publication types

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

1

BMC Prim Care

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. 2026 Feb 7.

doi: 10.1186/s12875-026-03216-6. Online ahead of print.

Proactive health behaviour intervention strategies for older T2DM patients with multimorbidity: protocol for a cluster randomised controlled trial with hybrid type 2 effectiveness-implementation design

Yang Li[#1,2], Qian Huang[#1,2], Jianli Ge[1,2], Yue Liu[1,2], Shasha Geng[1,2], Qingqing Li[1,2], Xin Chen[1,2], Yinggian Zhu[1,2], Xiaotong Guo[1,2], Fengyi Lu[1,2], Ning Xu[1,2], Minggang Yu[1,3], Liang Zheng[4], Hua Jiang[5,6]

Affiliations Expand

- **PMID: 41654714**

- **DOI: 10.1186/s12875-026-03216-6**

No abstract available

Keywords: Behaviour change; Multimorbidity; Older people; Primary care; Proactive health; T2DM.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: Approval for this study was granted by the Ethics Committee of Shanghai East Hospital (Approval No. 2024YS-083) on 10/05/2024. Written informed consent will be obtained from all participants, and permission will be sought to collect biological samples for storage and further research. Should participants wish to withdraw from the trial, they will be asked whether they consent to the utilisation of their data for subsequent analyses. In the event of any material alterations being made to the initial approval document, these will be submitted by the principal investigator for approval to the ethics committee. Following the requisite approval, the revised protocol will be disseminated to all pertinent stakeholders, and updated in the Chinese Clinical Trial Registry. Consent for publication: The findings of this study will be disseminated in peer-reviewed journals for the benefit of professional practitioners, without any individual data or confidential information being disclosed. Competing interests: The authors declare no competing interests.

- **79 references**

Supplementary info

Grants and fundingExpand

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Cite

2

PLoS One

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. 2026 Feb 6;21(2):e0340098.

doi: 10.1371/journal.pone.0340098. eCollection 2026.

C-reactive protein-triglyceride-glucose index versus triglyceride-glucose index in predicting cardiovascular metabolic multimorbidity risk: A cohort study

Hongjin Wang [1], Ming Yang [2], Wenjing Cai [3], Hao Zeng [4], Xin Luo [1], Zengkai Xu [1], Jiahuang Wu [1], Youdong Lin [5], Zhisheng Wang [1]

Affiliations Expand

- PMID: 41649995
- PMCID: PMC12880693
- DOI: 10.1371/journal.pone.0340098

Abstract

Background: Cardiovascular Metabolic Multimorbidity (CMM), a leading global cause of mortality, lacks evidence on the predictive utility of the novel C-reactive protein-triglyceride-glucose index (CTI), which integrates insulin resistance and inflammation. This study compared CTI with the established Triglyceride-Glucose (TyG) index in predicting CMM risk.

Methods: A cohort of 8,487 adults aged ≥45 from the CHARLS database (2011-2020) was analyzed. Over nine years, CMM events were tracked. Cox regression, restricted cubic spline (RCS), and ROC curve analyses assessed associations between TyG, CTI, and CMM risk. Subgroup analyses evaluated population-specific variations.

Results: Among participants, 1,030 (12.14%) developed CMM. Unadjusted Cox models showed TyG (HR = 1.89, 95%CI 1.73-2.07, P < 0.001) and CTI (HR = 1.83, 95%CI 1.70-1.97, P < 0.001) predicted CMM; adjusted models confirmed persistence. A dose-response association was observed for both CTI and TyG with CMM risk. In fully adjusted models, the overall dose-response trend remained similar. ROC analysis favored CTI (higher AUC). Subgroup analyses indicated TyG's association varied by sex, smoking, and hypertension (P < 0.05), while CTI's association differed by age, sex, and hypertension (P < 0.05).

Conclusions: Elevated CTI independently correlates with increased CMM risk, demonstrating superior predictive accuracy over TyG. Its linear association highlights potential clinical utility for early CMM risk stratification.

Conflict of interest statement

The authors have declared that no competing interests exist.

- 33 references
- 6 figures

Supplementary info

MeSH terms, SubstancesExpand

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Cite

3

Ann Med

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. 2026 Dec;58(1):2618318.

doi: 10.1080/07853890.2026.2618318. Epub 2026 Feb 6.

Multiple electrolyte imbalances in hospitalized patients: a multimorbidity perspective from a large, retrospective cohort study

Nan Jiang [1 2], Siyu Liang [1], Yuelun Zhang [3], Lize Sun [4], Shi Chen [1], Hui Pan [1]

Affiliations Expand

- PMID: 41649147

- DOI: 10.1080/07853890.2026.2618318

Free article

Abstract

Introduction: Multiple electrolyte imbalances (MEIs) are underexplored in hospitalized patients. We aimed to determine: (1) the prevalence and prognostic impact of MEIs; (2) the associations between electrolyte imbalance (EI) combinations and adverse outcomes; and (3) the potential interactions among EI types.

Materials and methods: Hospitalized patients at Peking Union Medical College Hospital were enrolled from 2015 to 2020. Adverse outcomes included in-hospital mortality or discharge against medical advice. Multivariable logistic regression models were used to evaluate the associations of number of EIs, EI types, and their

combinations with adverse outcomes and to calculate the population-attributable fractions (PAFs). The additive and multiplicative interactions were examined for each EI combination.

Results: Among 324,056 hospitalizations, the prevalence of MEIs was 18.8%. Compared to patients without EIs, the odds ratios (ORs) for adverse outcomes were 2.18 (95% confidence interval [CI]: 1.83-2.59) for patients with 1 EI and 17.34 (95% CI: 15.32-19.62) for those with ≥2 EIs. The highest-risk EI combinations at the individual level were hypercalcemia-hypernatremia (OR = 14.96 [95% CI: 11.34-19.68]), hyponatremia-hypernatremia (13.00 [95% CI: 10.09-16.74]), and hypochloremia-hypernatremia (11.06 [95% CI: 8.51-14.34]), while hypokalemia-hypernatremia (PAF = 17.89% [95% CI: 17.37%-18.41%]), hyperchloremia-hypernatremia (15.29% [95% CI: 14.99%-15.59%]), and hypocalcemia-hypernatremia (12.40% [95% CI: 11.94%-12.86%]) contributed the most to adverse outcomes at the population level. Synergistic additive interactions were observed for hyperchloremia-hypernatremia (relative excess risk due to interaction = 4.80 [95% CI: 3.05-6.55]) and hypercalcemia-hypernatremia (6.98 [95% CI: 3.11-10.86]).

Conclusions: MEIs are common and harmful in hospitalized patients. Prioritizing different intervention targets at individual and population levels may improve clinical outcomes.

Keywords: Water-electrolyte imbalance; multimorbidity; prevalence; prognosis.

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Commun Med (Lond)

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. 2026 Feb 4;6(1):67.

doi: 10.1038/s43856-025-01347-y.

Genetics identifies obesity as a shared risk factor for co-occurring multiple long-term conditions

Ninon Mounier [1], Bethany Voller [1], Jane A H Masoli [1 2], João Delgado [1], Frank Dudbridge [3], Luke C Pilling [1], Timothy M Frayling [1 4], Jack Bowden [5 6]; GEMINI Consortium

Collaborators, Affiliations Expand

- PMID: 41639422

- PMCID: PMC12873261

- DOI: 10.1038/s43856-025-01347-y

Abstract

Background: Multimorbidity, the co-occurrence of multiple long-term conditions (LTCs), is an increasingly important clinical problem, but little is known about the underlying causes. We investigate the role of a critical multimorbidity risk factor, obesity, as measured by body mass index (BMI), in explaining shared genetics amongst 71 common LTCs.

Methods: In a population of northern Europeans, we estimated genetic correlation, between LTCs and partial genetic correlations after adjustment for the genetics of BMI. We used multiple causal inference methods to confirm that BMI causally affects individual LTCs, and their co-occurrence. Finally, we quantified the population-level impact of intervening and lowering BMI on the prevalence of 15 key common multimorbid LTC pairs.

Results: BMI partially explains some of the shared genetics for 740 LTC pairs (30% of all pairs considered). For a further 161 LTC pairs, the genetic similarity between the LTCs was entirely accounted for by BMI genetics. This list included diabetes and osteoarthritis and gout and osteoarthritis: Causal inference methods confirmed that higher BMI acts as a common risk factor for a subset of these pairs, and therefore BMI-lowering interventions would likely reduce their prevalence. For example, we estimated that a 1 standard deviation or 4.5 unit decrease in BMI would result in 17 fewer people with both chronic kidney disease and osteoarthritis per 1000 who currently have both LTCs.

Conclusions: Our genetics-centred approach quantifies the contribution of obesity to multi-morbidity. Our method for calculating full and partial genetic correlations is published as an R package {partialLDSC}.

Plain language summary

More than half of people over 65 have several long-term health conditions at the same time. This is becoming a bigger issue in the UK, but we don’t fully understand why some people develop many conditions.We looked at how body weight, measured by body mass index (BMI), affects the shared genetic risks for 71 common health problems such as diabetes, heart disease, arthritis and depression. Using data from people with northern European ancestry, we studied how much the same genes are linked to different conditions — both before and after taking the genetics of BMI into account.We found that BMI explains some of the shared genetic risks between many health conditions, and all of the shared risk for some, such as diabetes and osteoarthritis.Our results suggest that helping people lower their BMI could reduce the number of long-term health problems they experience, allowing more people to live longer and healthier lives.

Conflict of interest statement

Competing interests: J.B. is a part-time employee of Novo Nordisk Research Centre Oxford, limited. T.F. has consulted for several pharmaceutical companies. All other authors have no disclosures to declare.

- 53 references
- 7 figures

Full text links

5

Pediatrics

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. 2026 Feb 6:e2025073742.

doi: 10.1542/peds.2025-073742. Online ahead of print.

Neurodevelopmental Outcomes 12 Years After Extremely Preterm Birth in Sweden

Fredrik Serenius [1], Thomas Abrahamsson [2 3], Ulrika Ådén [3 4 2], Kerstin Hellgren [5], Karin Sävman [6 7], Andreas Ohlin [8], David Ley [9], Lena Hellström Westas [1], Aijaz Farooqi [10], Karin Källén [11], Lisa B Thorell [12]

Affiliations Expand

- **PMID: 41638598**
- **DOI: 10.1542/peds.2025-073742**

Abstract

Objectives: We assessed the prevalence of neurodevelopmental disabilities (NDDs; cognition, cerebral palsy, vision/hearing, epilepsy), attention deficit hyperactivity disorder (ADHD), autism spectrum disorder (ASD), developmental coordination disorder (DCD), behavior problems, and multimorbidity in a national cohort of children born extremely preterm (EPT, <27-week gestation) to provide a comprehensive understanding of the challenges faced by children born EPT in early adolescence.

Methods: All infants born EPT in Sweden from April 2004 through March 2007 were enrolled in the Extremely Preterm Infants in Sweden Study (EXPRESS). Of 492 survivors at age 12 years, 462 were assessed alongside 373 term-born controls. Standard instruments were used to assess cognition, motor function, and behavior. Parents completed a structured health questionnaire. Diagnoses were obtained from national health registers.

Results: Compared with controls, children born EPT exhibited significantly higher rates of moderate/severe NDD (37.4% vs 4.6%), ASD (14.9% vs 2.41%), ADHD (21.2% vs 8.9%), DCD (29.4% vs 5.7%), and behavioral problems (35.3% vs 8.13%; all $P < .001$). Of children born EPT with no/mild NDD, 8.3% (24/289) were diagnosed with ASD and 14.5% (24/289) with ADHD, and of those with moderate/severe NDD, 26.0% (42/289) were diagnosed with ASD and 32.4% (56/173) with ADHD. Of children born EPT with moderate/severe NDD, 59% exhibited at least 2 co-occurring disabilities/disorders, and in those with no/mild disabilities, comorbidity was 24.9%. In the total EPT cohort, 57.4% were free from moderate/severe NDD and ASD, and 42.0% were free from ASD, ADHD, and DCD.

Conclusions: By age 12 years, a large proportion of children born EPT faced challenges because of NDD, ASD, ADHD, DCD, multimorbidity, and behavioral problems, necessitating multidisciplinary follow-up.

Cite

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Arch Public Health

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. 2026 Feb 3.

doi: 10.1186/s13690-026-01846-x. Online ahead of print.

Smoking status and cessation duration in relation to the progression of cardio-renal-metabolic multimorbidity: a prospective cohort study from the UK Biobank

Xinhui Liu [1 2], Shuo Wu [1 2], Heng Zhang [3], Fuzhong Xue [4 5 6]

Affiliations Expand

- PMID: 41634877

- **DOI: 10.1186/s13690-026-01846-x**

Free article

Abstract

Background: This study aimed to investigate the association of smoking status and years since cessation with the onset, progression, and prognosis of cardio-renal-metabolic (CRM) multimorbidity (CRMM).

Methods: This study included participants from the UK Biobank who were free of CRM disease at baseline. Covariates adjusted Cox proportional hazards models were employed to evaluate the associations of smoking status and years since smoking cessation with the risks of individual CRM diseases, including ischemic heart disease (IHD), stroke, type 2 diabetes (T2D), and chronic kidney disease (CKD), as well as with each state in CRMM progression, including first CRM disease (FCRMD), CRMM (defined as the occurrence of two or more CRM diseases), and death. Multi-state models were used to analyze the associations between smoking-related behaviors and CRMM progression. The effects of smoking cessation were further explored within subgroups according to sex, age at smoking initiation, smoking duration, smoking intensity, and genetic risk scores for individual CRM diseases.

Results: In total, 356,071 participants (median age 57 years; 44.9% male) who were free of CRM disease (healthy) at baseline and had complete information on smoking status were included. During a median follow-up of 13.6 years, 56,786 participants developed a FCRMD, and 11,508 progressed to CRMM, of whom 2,796 subsequently died. Across all transitions from healthy to FCRMD, then to CRMM, and ultimately to death, current smoking had a greater impact on transitions leading to mortality. Compared with never smokers, current smokers had an adjusted hazard ratio of 1.44 (95% CI: 1.40-1.47) for the transition from healthy to FCRMD and 2.49 (95% CI: 2.38-2.60) for the transition from healthy to death. Approximately 25 years of smoking cessation were required for risks across all transitions in CRMM progression among former smokers to became not significantly different from those of never smokers. Compared with current smokers, former smokers experienced significantly lower risks for transitions leading to death shortly after cessation, whereas risk reductions for the transitions from healthy to FCRMD and from FCRMD to CRMM were not observed until more than 5 and 20 years after cessation, respectively. When disease-specific transitions were further considered, longer post-cessation periods were required to achieve significant risk reductions for transitions from healthy to T2D or CKD and from IHD or T2D to death, compared with current smokers. The effects of smoking cessation on CRMM progression varied by sex and previous smoking behavior, but not by genetic susceptibility to specific CRM diseases.

Conclusion: Smoking has substantial but varied impacts across transitions in CRMM progression and disease-specific pathways. Long-term smoking cessation is an important strategy for reducing the risk of CRMM onset and progression. Individuals with specific prior smoking patterns (e.g., male or heavy smokers) and those at certain transition states warrant particular attention during the short-term period following smoking cessation.

Keywords: Cardio-renal-metabolic multimorbidity; Multi State model; Smoking cessation.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: All data used in this study can be downloaded from public UK Biobank, which has been approved by the North West Multicenter Research Ethical Committee, and informed consent was obtained from all participants. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- **43 references**

Supplementary info

Grants and fundingExpand

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Review

Heart Fail Rev

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. 2026 Feb 3;31(1):22.

doi: 10.1007/s10741-025-10586-z.

Heart failure with preserved ejection fraction: a systemic condition of comorbidities

Josephine Harrington [1] [2], Ambarish Pandey [3]

Affiliations Expand

- **PMID: 41632351**

- **DOI: 10.1007/s10741-025-10586-z**

No abstract available

Keywords: Atrial fibrillation; Heart failure with preserved ejection fraction; Multimorbidity; Obesity; Systemic.

Conflict of interest statement

Declarations. Competing interests: The authors declare no competing interests. Disclosures: Josephine Harrington has served as a consultant for Novo Nordisk. AP has research support from the National Institute on Minority Health and Disparities (R01MD017529), the National Institute of Heart, Lung, and Blood Institute (R21HL169708), American Heart Association, Ultromics, Anumana, SC Pharmaceuticals, SQ Innovation, Astra Zeneca, and Roche Diagnostics; serves as a consultant for and/or received honoraria outside of the present study as an advisor/consultant for Northwestern University, Tricog Health Inc, Lilly USA, Rivus, Cytokinetics, Roche Diagnostics, Sarfez Therapeutics, Edwards Lifesciences, Merck, Bayer, Anumana, Novo Nordisk, Alleviant, Pfizer, Abbott, iRhythm, Axon Therapies, Kilele Health, Acorai, Ultromics, Kardigan, Novartis, Idorsia Pharma, and Science37; also served as consultant for Palomarin Inc. with stocks compensation.

- **45 references**

Supplementary info

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Eur J Prev Cardiol

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doi: 10.1093/eurjpc/zwaf270.

Risk calculator of multimorbid risk of rehospitalization and death from heart failure: including the contribution of the gut microbiome

Muhammad Zubair Israr [1], Andrea Salzano [1 2 3], Hong Zhan [4], Adriaan A Voors [5], Leong L Ng [1], Toru Suzuki [1 6 7]

Affiliations Expand

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- DOI: 10.1093/eurjpc/zwaf270

Abstract

Aims: The elucidation of the contributory role of multimorbidity to heart failure (HF) including the gut-heart axis has added a new dimension to our understanding of HF pathophysiology that is not reflected in currently available risk scores. The present investigation aimed to develop and validate a novel risk score model of multimorbidity for HF risk stratification.

Methods and results: A risk model was developed based on the contribution of markers associated with HF multimorbidities on outcomes of mortality and/or rehospitalization due to HF (death/HF) at one year. Two independent HF cohorts were combined and randomly split 70:30 using a split-sample validation approach for training and validation cohorts that were not significantly different for investigated variables. Backward logistic regression was used to develop the risk model with a further scoring system to create a simple risk calculator. A final 11-variable risk model (age, previous HF hospitalization, NYHA group III/IV, NT-proBNP, diastolic blood pressure, loop diuretic use, beta-blocker non-use, creatinine, COPD, diabetes, and combined gut metabolites) showed a diagnostic performance of 0.71 in the training cohort (C-statistic validation cohort, 0.70, $P < 0.001$). A risk score/calculator was further developed based on this model with categorization into three (low-, mid-, and high-) and two (low- and high-) risk groups, with both approaches demonstrating increased incidence of death/HF in patients at the highest risk ($P < 0.001$).

Conclusion: A novel risk model and score were derived that showed the contribution of comorbidities including the added value of the gut-heart axis on risk stratification of HF patients on rehospitalization and death.

Lay summary: The contributory role of multimorbidity is not well understood in heart failure (HF), including the more recent addition of the gut microbiome (gut-heart axis). However, in current HF risk scores, the contributory role of multimorbidity is seldom considered. In this study, we developed an 11-variable risk model and a simple risk score calculator for clinical use that considers the contribution of HF multimorbidity, including the gut microbiome. The clinical risk score was developed and validated in a clinical cohort from two combined independent European studies from inpatient heart failure subjects. The outcomes were death due to HF and/or rehospitalization at 1 year. The final model showed diagnostic performance comparable to current HF risk scores. Furthermore, the risk score calculator, developed for clinical use, is able to stratify patients into low-, mid-, and high-risk groups, with worsening outcomes seen with increasing risk group. The importance and novelty of this risk model over current HF risk scores are the contribution of comorbidities including the added value of the gut-heart axis on HF risk stratification.

Keywords: Gut; Heart failure; Metabolites; Outcomes; Risk model.

Conflict of interest statement

Conflict of interest: L.L.N. has received grants from EU FP7. All other authors have no conflicts to report.

Comment in

- **Can risk prediction with multimorbid risk calculator translate into improved clinical management or prevention of heart failure outcomes?**

Tang WHW.Eur J Prev Cardiol. 2026 Feb 3;33(2):212-213. doi: 10.1093/eurjpc/zwaf416.PMID: 40638798 No abstract available.

- **Cited by 1 article**
- **48 references**
- **3 figures**

Supplementary info

Publication types, MeSH terms, Grants and funding

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

1

BMC Pulm Med

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. 2026 Feb 7.

doi: 10.1186/s12890-025-03994-2. Online ahead of print.

Age-sex differences in the global burden of asthma and risk factors, 1990-2021: results from the global burden of disease study 2021

Sinuo Wu [# 1], Rongmei Ding [# 2], Wanjie Huang [# 1], Yunxiao Shang [1], Wei Xu [1], Feng Shi [3], Qi Cheng [4]

Affiliations Expand

- **PMID: 41654876**
- **DOI: 10.1186/s12890-025-03994-2**

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Keywords: Age-sex differences; Asthma; Global burden of disease; Risk factors.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: This article does not contain personal data. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- 50 references

Supplementary info

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Clin Ther

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. 2026 Feb 6:S0149-2918(25)00423-0.

doi: 10.1016/j.clinthera.2025.12.013. Online ahead of print.

Safety Assessment of Budesonide/Formoterol: Real-World Pharmacovigilance Analysis Using the FAERS, JADER, and CVAR Databases

Zhenyong Chen [1], Chengyu Zhu [1], Zhiwei Cui [2], Fan Zou [1], Yuanbo Lan [3]

Affiliations Expand

- PMID: 41654451

- DOI: 10.1016/j.clinthera.2025.12.013

Abstract

Background: Asthma and chronic obstructive pulmonary disease are common respiratory disorders with significant global health implications. Budesonide/formoterol (Symbicort) is a fixed-dose inhaler combining budesonide

and formoterol fumarate dihydrate, widely used for disease management. While its clinical efficacy is well established, there is an increasing number of adverse drug event (ADE) reports, highlighting the need for thorough real-world safety evaluations.

Methods: We performed a retrospective pharmacovigilance study using three major spontaneous reporting systems: the US Food and Drug Administration Adverse Event Reporting System (FAERS), the Japanese Adverse Drug Event Report (JADER), and the Canada Vigilance Adverse Reaction Database (CVARD). We used multiple disproportionality algorithms, including reporting odds ratio, proportional reporting ratio, Bayesian confidence propagation neural network, and multi-item gamma Poisson shrinker for signal detection. Additionally, subgroup and sensitivity, along with logistic regression, were performed. Weibull distribution and log-rank testing were used to assess event timing.

Results: A total of 30,689 ADEs were identified in FAERS, spanning 27 system organ classes. Expected signals such as cough, dysphonia, and bronchitis were confirmed. Unexpected events included dyspnea, visual and memory impairment, coronary artery embolism, and asthmatic crisis. Sex-stratified analysis revealed female-specific risks (eg, malaise, bronchitis, alopecia, weight gain) and male-specific risks (eg, dysuria, myocardial infarction). Younger patients (<18 years) were at higher risk for asthmatic crisis, whereas older patients (>65 years) showed a protective effect. The median onset of ADEs was 55 days. Distinctive signals emerged from JADER (eg, pneumonia, liver injury) and CVARD (eg, hemoptysis, hypothyroidism).

Conclusions: This multi-database analysis highlights the need for continuous pharmacovigilance for budesonide/formoterol. The identification of novel ADE signals emphasizes the importance of vigilant monitoring, especially during early treatment, to enhance safety and therapeutic outcomes.

Keywords: Adverse drug events; Asthma; Budesonide/formoterol; Disproportionality analysis; Real-world analysis.

Conflict of interest statement

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

Full text links

. 2026 Feb 7.

doi: 10.1111/all.70235. Online ahead of print.

Update on Non-Biological and RNA-Based Therapeutics in Chronic Inflammatory Diseases: Precision Medicine Through Small Molecules

F Roth-Walter [1], I M Adcock [2], C Benito-Villalvilla [3 4], R Bianchini [1], L Bjermer [5], G Caramori [6], L Cari [7], K F Chung [8], Z Diamant [9 10 11], I Eguiluz-Gracia [12], E F Knol [13], M Jesenak [14], F Levi-Schaffer [15], G Nocentini [7], L O'Mahony [16 17 18], O Palomares [3], F Redegeld [19], M Sokolowska [20], B Van Esch [19], M Zurlo [15], C Stellato [21]

Affiliations Expand

- PMID: 41654320

- DOI: 10.1111/all.70235

Abstract

In the last decades, critical advancements in research technology and knowledge on disease mechanisms steered therapeutic approaches for chronic inflammatory diseases towards unprecedented target specificity. For allergic and chronic lung diseases, biologic drugs pioneered this goal, acquiring on the way-through the clinical use of monoclonal antibodies-a deeper understanding of how inflammatory and immune pathways are configured in disease-specific patterns. In this biomarker-driven approach, synthetic small molecule drugs (SMDs) were perceived as lagging behind in innovation for their relative lack of specificity. This was, however, mostly due to a shift in focus towards biologics rather than true obsolescence of SMDs. In the same timeframe, in fact, advances in structural biology and medicinal chemistry, bioinformatics and artificial intelligence held steadily SMDs' innovation and relevance. The use of kinase inhibitors, well established in the treatment of cancer and rheumatological diseases, is now approved for some allergic skin diseases and is approaching asthma and COPD with several clinical trials; moreover, new therapeutics targeting mast cell receptors and molecules involved in innate immunity are entering preclinical and clinical testing. Alongside, the portfolio of biologics is harboring the expansion of RNA therapeutics, which gained global recognition during the COVID-19 pandemic due to RNA vaccines. Different types of RNA therapeutics, including those based on different non-coding RNAs, are advancing to agency approval and market, thanks to improvements in molecule stability and delivery systems. In summary, the evidence presented in this position paper illustrates that precision medicine is becoming a goal shared between synthetic SMDs and biologics, both protein/antibody-based and RNA therapeutics. We review the current state, unmet needs and opportunities within this evolving landscape, highlighting how small molecular species, both synthetic as SMDs and biologic in nature as RNA, can contribute to the precision

medicine approach along with protein and antibody-based biologics and cell therapies.

Keywords: RNA-based therapies; biomarker-driven drug development; chronic inflammatory diseases; kinase inhibitors; precision medicine; small molecule drugs.

- **333 references**

Supplementary info

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4

J Allergy Clin Immunol

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. 2026 Feb 5:S0091-6749(26)00078-3.

doi: 10.1016/j.jaci.2026.01.024. Online ahead of print.

Macrolides for asthma: a systematic review and meta-analysis of randomized trials

Leonardo M Ologundudu [1], Melanie M Wong [2], Nazmul Islam [3], Daniel G Rayner [4], Alexandro W L Chu [5], Mark Loeb [6], Katherine Rivera-Spoljaric [7], Bradley Chipps [8], Kaharu Sumino [9], John Oppenheimer [10], Sharmilee M Nyenhuis [11], Elliot Israel [12], Flavia Hoyte [13], Tamara T Perry [14], Ellen McCabe [15], Valerie G Press [16], Susana Rangel [17], Gordon H Guyatt [18], Lindsay E Shade [19], Paul M O'Byrne [20], Hilarry Orr [21], Dia Sue-Wah-Sing [22], Angel Melendez [23], Tonya Winders [24], Donna D Gardner [25], Kathyrn Przywara [26], Giselle Mosnaim [27], Leonard B Bacharier [28], Matthew A Rank [29], Derek K Chu [30]

Affiliations Expand

- **PMID: 41654262**

- **DOI: 10.1016/j.jaci.2026.01.024**

Abstract

Background: The benefits and harms of using macrolides for asthma remain unclear.

Objective: As part of upcoming AAAAI/ACAAI JTFPP guidelines addressing severe asthma, we systematically reviewed the efficacy and safety of macrolides for asthma.

Methods: We systematically searched MEDLINE, EMBASE, and CENTRAL to April 12, 2025, for randomized trials comparing macrolides to placebo or standard care for asthma. Paired reviewers independently screened records and extracted data. Individual patient-level data in random effects ANCOVA models addressed asthma control and asthma-related quality of life (QoL). Random effects meta-analyses addressed severe exacerbations and harms. We used the GRADE approach to evaluate certainty of evidence. PROSPERO (CRD42023408677).

Results: Nineteen trials enrolled 1825 participants. Compared to placebo, macrolides improve asthma control (ACQ-6; 0-6; lower better; between-group mean difference [MD]: -0.23 [95%CI -0.32 to -0.13]; 40.6% vs. 21.6% improving by minimally important difference [MID] of 0.5 points; high certainty), likely reduce severe exacerbations (incidence rate ratio: 0.75 [95%CI 0.57 to 0.98]; rate difference: 0.26 fewer events per patient-year [95%CI 0.45 to 0.02 fewer events]; moderate certainty), and likely modestly improve QoL (AQLQ; 1-7; higher better; MD: 0.11 [95%CI -0.06 to 0.29]; 47.6% vs. 42.4% improving by MID of 0.5 points; moderate certainty) with little to no effect on serious adverse events and mortality (high certainty). Relative effects were similar among patients with T2-high versus T2-low asthma.

Conclusion: Macrolides likely reduce severe exacerbations and improve asthma control and QoL with little to no difference in serious harms among patients with T2-high or T2-low asthma.

Keywords: GRADE approach; antibiotic resistance; asthma control; asthma-related quality of life; severe asthma exacerbations.

5

J Allergy Clin Immunol Pract

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The Safety of Biologic Treatment for Asthma in Pregnancy

Madeline S Kellam [1], Jeffrey M Chambliss [2], Luyu Xie [3], Timothy G Chow [2]

Affiliations Expand

- PMID: 41654181

- DOI: 10.1016/j.jaip.2026.01.035

Abstract

Background: Poorly controlled asthma during pregnancy has been associated with adverse maternal and neonatal outcomes. Biologic medications, such as monoclonal antibodies, can improve control and reduce exacerbations in patients with moderate-severe asthma. However, there is limited data about the safety of biologics during pregnancy.

Objective: To determine the frequency of adverse pregnancy outcomes in patients with moderate-severe persistent asthma prescribed biologic therapies compared to an unexposed disease matched cohort.

Methods: This is a retrospective cohort study utilizing the TriNetX US Collaborative Network. Pregnant women ages 15 to 44 years old with moderate-severe asthma between January 2010 and July 2025 were identified. The study included two groups: asthma biologic prescription group and unexposed asthma controls which were 1:1 propensity score-matched by age, race, ethnicity, comorbidities, substance use, and obesity. Primary outcomes were defined as maternal and fetal complications that occurred in relation to the index event (pregnancy date). Odds ratios with 95% confidence intervals were calculated between matched groups for each outcome.

Results: After propensity score matching, there were 535 pregnant patients in each group. There was a decreased risk of any adverse pregnancy outcomes in the asthma biologic prescription group when compared to the disease matched controls (OR 0.609, CI 0.460-0.807, p=0.001).

Conclusion: Prescribed biologics for the treatment of moderate-severe asthma during pregnancy was not associated with an increased risk for adverse pregnancy outcomes when compared to disease matched controls, and may have a protective effect in reducing adverse pregnancy outcomes.

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Respir Med

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. 2026 Feb 5:108706.

doi: 10.1016/j.rmed.2026.108706. Online ahead of print.

The C-Reactive Protein-Albumin-Lymphocyte (CALLY) Index and All-Cause Mortality in Adults with Asthma: A Cohort Study Using NHANES 1999-2010

Wen Luo [1], Zhenzhen Yu [2], Yongcai Zhang [3], Dingnan Lin [1], Wanyu Wang [4], Chen Wang [5]

Affiliations Expand

- PMID: 41654001

- DOI: 10.1016/j.rmed.2026.108706

Abstract

Background: Systemic inflammation, nutritional depletion, and immune dysregulation are common in asthma, yet no composite indicator has been prospectively linked to long-term survival; accordingly, the association between the C-Reactive Protein-Albumin-Lymphocyte (CALLY) index and all-cause mortality in U.S. adults with asthma was examined.

Methods: We analyzed 3,887 asthma participants aged ≥18 years from the National Health and Nutrition Examination Survey (NHANES) 1999-2010, linked to the National Death Index (NDI) through December 2019. Cox regression estimated hazard ratios (HR) per CALLY quartile and per one-unit increase in ln-transformed CALLY, adjusting for sociodemographic, lifestyle and comorbidity covariates. Non-linearity was assessed with restricted cubic splines; subgroup analyses tested effect consistency.

Results: During a median 157 months, 729 deaths occurred (18.8% mortality). Higher CALLY was associated with younger age, lower BMI and fewer comorbidities. After full adjustment, each unit increase in CALLY conferred a 19% lower mortality risk (HR 0.81, 95 % CI 0.76-0.86). The dose-response gradient remained linear across the entire distribution, and the inverse association was consistently observed across all predefined strata.

Conclusion: In this cohort, a higher CALLY index was independently associated with lower all-cause mortality among adults with asthma; prospective studies are warranted to confirm this association.

Keywords: All-cause mortality; Asthma; CALLY index; NHANES; Systemic inflammation.

Conflict of interest statement

Declaration of Competing Interest The authors declare that they have no competing interests.

Full text links

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J Allergy Clin Immunol Pract

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Novel diagnostic approaches for eosinophilic lung diseases

Alexander Ruzic [1], Merritt L Fajt [2], Mark Hammer [3], Manali Mukherjee [4]

Affiliations Expand

- **PMID: 41651409**
- **DOI: 10.1016/j.jaip.2026.01.023**

Abstract

Eosinophilic lung diseases (ELDs) represent a heterogeneous group of airway and parenchymal disorders unified by eosinophilic inflammation but distinguished by diverse clinical features, mechanisms of persistence, and variable therapeutic responses. Traditional diagnostic tools-including blood eosinophil counts, bronchoalveolar lavage, sputum cytology, and exhaled nitric oxide predict the eosinophilic/T2 burden of the disease but often fail to distinguish IL-5-dependent from IL-5-independent pathways, overlook compartment-specific inflammation, and inadequately predict/monitor response to targeted biologics. The inconsistent efficacy of IL-5/IL-5R-directed monoclonal antibodies despite normalisation of blood eosinophils across the ELD spectrum, viz. robust clinical response in eosinophilic granulomatosis with polyangiitis and hypereosinophilic syndrome, partial in

asthma, and largely absent in COPD-underscores the limitations of current biomarkers and the need for refined precision endotyping. To address these gaps, emerging biomarker platforms move beyond eosinophil enumeration to define upstream drivers, activation states, tissue localization, and immune pathways sustaining persistent eosinophilia. These advances include non-invasive tools such as lateral-flow devices for assaying eosinophil peroxidase (eosinophil activity biomarker), breathomics and volatile organic compound profiling, cytokine-level inflammatory mapping, and composite biomarker models integrating airway, blood, and molecular signatures. In parallel, functional imaging modalities-including hyperpolarized gas MRI, phase-resolved functional lung MRI, and quantitative computed tomography (CT)-provide non-invasive, high-resolution visualization of regional ventilation, perfusion, and inflammation. This enables clinicians to "look into the lungs" and offer powerful stand-alone or complementary biomarker capability. Collectively, these innovations mark a shift toward mechanistically informed, tissue-specific, multimodal biomarker strategies that refine diagnosis, improve therapeutic selection, and enhance monitoring across the ELD spectrum, advancing the promise of precision medicine.

Keywords: COPD; EGPA; HES; asthma; biomarkers; eosinophils; lung diseases.

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Respir Med

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doi: 10.1016/j.rmed.2026.108698. Online ahead of print.

Obesity and impaired muscle function in severe asthma: a cross sectional study

Ariele Pedroso [1], Joice M Oliveira [2], Vanessa L Clark [2], Rebecca F McLoughlin [2], Karina C Furlanetto [3], Peter G Gibson [4], Vanessa M McDonald [5]

Affiliations Expand

- **PMID: 41651034**

- **DOI: 10.1016/j.rmed.2026.108698**

Abstract

Aims: To compare physical, functional and inflammatory characteristics between adults with severe asthma and controls with and without obesity, and to evaluate factors associated with sarcopenia and muscle quality.

Methods: This cross-sectional study included four groups: adults with severe asthma and controls (without respiratory diseases), stratified by the presence or absence of obesity. Assessments included lung function, asthma outcomes, clinical variables, body composition, sarcopenia, muscle quality index (MQI), muscle function and strength, six-minute walk distance (6MWD), and inflammatory markers.

Results: A total of 233 participants were included (140 with severe asthma, 93 controls). The group with obesity and severe asthma showed worse core function, limb strength, MQI and 6MWD, compared to the other groups (P<0.0001 for all). No significant differences were observed in lean mass (P=0.123) or in the prevalence of sarcopenia (P=0.291) between groups. Inflammatory markers were elevated in asthma, regardless of obesity. A multiple linear regression model including age, sex, asthma, fat mass, lower limb strength and 6MWD explained 43.3% of the variability in appendicular skeletal muscle mass index (ASMMI).

Conclusion: Obesity plays a key role in muscle dysfunction on core, upper, and lower limb muscle groups. This reinforces the need for integrated clinical approaches addressing both asthma and obesity.

Keywords: Asthma; Body Composition; Obesity; Sarcopenia; Skeletal muscles.

Conflict of interest statement

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

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Respir Med

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. 2026 Feb 4:108695.

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The bacterial lysate OM-85 Reduces Exacerbations and Oral Corticosteroid Use in Frequently Exacerbating Patients with T2-High Asthma: The OMREXA Real-World Evidence Study

Maria Elpida Cristopoulou [1], Lilia S Panteli [2], John A Moisidis [2], Ioannis A Christopoulos I [3], Amalia S Tryphonidou [2], Antonios I Christopoulos [4]

Affiliations Expand

- PMID: 41651033

- DOI: 10.1016/j.rmed.2026.108695

Abstract

Background: Underlying immune modifications are offered by the Polyvalent Chemical Bacterial Lysate OM-85 (i.e., anti-viral properties, enhancement of the epithelium barrier function, and induction of a tolerance landscape in the lungs). This secondary post hoc analysis used data from the OMRIA study, to assess the effect of add-on OM-85 on reducing the risk for exacerbations of any origin in adults with difficult-to-treat T2-high asthma.

Methods: The Oral Bacterial Lysate OM-85 Prevents Respiratory Tract Infections in Asthma (OMRIA) study enrolled adults with T2-high asthma frequently exacerbating, under standard of care asthma therapy (SoC), who were started on OM-85 (two 3-month courses with a 3-month treatment-off period in between). Patients were assigned to two groups (OM-85 plus SoC n=70 and SoC group n=67) and all AEXs and OCS bursts were recorded throughout a 12-month period. A clinical categorization to identify infectious and non-infectious AEXs was also applied: 1. Asthma symptoms alone (non-infectious), 2. Combined asthma and common cold symptoms (infectious), 3. Combined asthma and bronchitis, sinusitis, or pneumonia symptoms (infectious).

Results: The weighted with propensity scores analyses (Poisson and negative binomial regression model), verified the statistically significant decreases in the average numbers of AEXs and OCS bursts reported in OMRIA study, in patients treated with OM-85. Same tendencies were recorded in each AEX class (class 1-non-infectious: 50.5% decrease, classes 2 and 3-infectious: 72.2% and 89.8% decrease, respectively).

Conclusion: This secondary post hoc analysis supports the therapeutic benefit of OM-85 in patients with T2-high asthma who have frequent exacerbations despite adherence to SoC asthma therapy.

Keywords: Bronchial Asthma; Exacerbations; OM-85; Oral corticosteroids; T2-high asthma.

Conflict of interest statement

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

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Allergy

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The International Guideline for the Definition, Classification, Diagnosis and Management of Urticaria

T Zuberbier [1 2], Z Abdul Hameed Ansari [3], A H Abdul Latiff [4], M M Abuzakouk [5], M S Agcaoili-De Jesus [6], R C Agondi [7], M Al-Ahmad [8], A A Alangari [9], H Alhameli [5], C D Alonso Bello [10], S Alshareef [11], S Al-Tamemi [12 13], S Altrichter [14], H Al Wahshi [15], S Aquilina [16], M Araújo [17], R Arnaout [11], R Asero [18], B Ballmer-Weber [19], C Bangert [20], A Bauer [21], M Ben-Shoshan [22], J Bernstein [23], C Bindslev-Jensen [24], M Bizjak [25 26 27], I Boccon-Gibod [28], H Bonnekoh [1 2], L Bouillet [28], K Brockow [29], Z Brzoza [30], M Bulatović Ćalasan [31], A Bulkhi [32], T Buttgereit [1 2], A Bygum [33], T Caballero [34], O Calderon [35], R Campos [36], M Cancian [37], E Carne [38], M A Castor [6], I Cerecedo [5], T Çetinarslan [39], I Cherrez-Ojeda [1 40 41], N Chkhikvadze [42], H J Chong-Neto [43], K Choo [44], G Christoff [45], C-Y Chu [46], K Ciupka [1 2], N Conlon [47], C Costa [48], T Craig [49 50], P Criado [51], I Danilycheva [52], R Darlenski [53], E De Arruda Chaves [54], L de Montjoye [55], M S Doutre [56], A Du-Thanh [57], D Ebo [58], S Elkhalifa [5 59], S Elmariah [60], T El-Shanawany [61], L F Ensina [62], R Ertaş [63], R Fachini Jardim Criado [51], M Ferrer [64], S Ferrucci [65], J S Fok [66], D Fomina [67 68], L Fonacier [69], G Fouda [70], I Francescantonio [71], A Fukunaga [72], C A Galvan Calle [73], E Garcia [74], K Gáspár [75], A Gelincik [76], S Geng [77], K Godse [78], M Gonçalo [79], M Gotua [42 80], C Grattan [81], M Grosber [82 83], G Guidos Fogelbach [84], M Guilarte [85 86], R Guillod [87], E Hamelmann [88], J Hawkes [89], K Hayama [90], R Heuer [91], M Hide [92 93], W Hoetzenecker [94], N Inomata [95], H-R Kang [96], A Kaplan [97], A Kapp [98], M Karam [99], A Kasperska-Zajac [100], C H Katelaris [101], A Kessel [102], M Khoshkhui [103], B Kim [104], T Kinaciyan [20], E Kocatürk [1 2 105], M Kolacinska-Flont [106], P Kolkhir [1 2], G N Konstantinou [107], M Kosnik [26 108], D Krasowska [109], K Kulthanan [110], M S Kumaran [111], I Kuprys-Lipinska [106], M Labrador [85], J I Larco [112], D Larenas-Linnemann [113], E Latysheva [52], E Lazaridou [114], P H Li [115], H Lima [116], U Lippert [117], M Magerl [1 2], M Makris [118], J Alves Marcelino [119], A V Marzano [65 120], I Medina [121], R Meshkova [122], D Micallef [16], R Mohammed Ali [123], C G Mortz [124], M

Munoz [1,2], H N G Oude Elberink [125], A Nakonechna [126], I Nasr [3], A Nast [91], E Netchiporouk [127], E Nettis [128], S Nieto [129], I Ogueta Canales [130], T-L Okas [131], R L Orfali [132], E Özkaya [133], C Parisi [134], A Pennitz [91], R Pawankar [135], M P Pereira [1,2], J Peter [136], E Petkova [137], P D Pigatto [138,139], I Podder [140], T Popov [141], G Porebski [142,143], P Pyatilova [1,2], G D Ramon [144], H A Ratti Sisa [145], M Recto [146], K Ress [147], K Ridge [148], M Riedl [149], C Ritchie [150], N Rosario Filho [151], I Rosmaninho [152], M Rudenko [153], M Rukhadze [42,154], K Rutkowski [155], V Sabato [58], U M Sahiner [156], S Saini [157], F Saleh Al Sabbagh [158], A Salman [159], F Salvo [5], J Sanchez [160], A Santucci [161], S Schliemann [162], P Schmid-Grendelmeier [163], B E Sekerel [156], F Serpa [164], F Sheikh [165], J Sheikh [166], H Shendi [167], F Siebenhaar [1,2], M Sonomjamts [168], A Soria [169], B Sousa Pinto [170,171], M Staevska [172], P Staubach [173], M Stephan [1,2], K Stevanovic [1,2], L Stingeni [174], M Stobiecki [143], Ö Su Küçük [175], G Sussman [176], A Szegedi [175], S Takahagi [177], A Tanaka [178], N Teovska Mitrevska [179], S F Thomsen [180], E Toubi [102], F Tsatsou [114], M Turk [181], Z Vadasz [102], A Valerieva [182], S Valle [183], M V Doorn [184], B Veleiro Perez [185], C E Vera Ayala [1,2], C Vestergaard [186], R J Vieira [170,171], C W Maruta [132], B Wedi [187], R N Werner [91], E W Y Yap [188], P Xepapadaki [118], Y Xiang [189], Y-M Ye [190], P Yong [191], G Yosipovitch [192], A Z J Zalewska-Janowska [193], C Zeyen [91], Z Zhao [194], M Metz [1,2], A M Giménez-Arnau [195]

Affiliations Expand

- **PMID: 41649409**

- **DOI: 10.1111/all.70210**

Abstract

This update and revision of the international guideline for urticaria was developed in accordance with the methods recommended by Cochrane and the Grading of Recommendations Assessment, Development and Evaluation (GRADE) working group. It is an initiative of the Global Allergy and Asthma Excellence Network (GA²LEN) and its Urticaria and Angioedema Centers of Reference and Excellence (UCAREs and ACAREs), with the participation of 210 delegates from 107 national and international societies, from 59 countries. The consensus conference was held on December 6th, 2024. This guideline was acknowledged and accepted by the European Union of Medical Specialists (UEMS). Urticaria is a frequent, mast cell-driven disease, defined by a rapid appearance of wheals, angioedema, or both. The lifetime prevalence of acute urticaria is estimated to be approximately 20%. Chronic urticaria, categorized as either chronic spontaneous urticaria or chronic inducible urticaria, is disabling, impairs quality of life, and affects performance at work and school, however, novel therapies are available. This updated version of the international guideline for urticaria covers the definition and classification of urticaria and outlines expert-guided and evidence-based diagnostic and therapeutic approaches for the different subtypes of urticaria.

Keywords: angioedema; consensus; evidence-based; hives; itch; mast cell; urticaria; wheals.

- **240 references**

Supplementary info

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. 2026 Feb 6.

doi: 10.1002/alr.70111. Online ahead of print.

Dupilumab Beyond the Airway: Decreased Morbidity in a Real-World Analysis

Emma J Anisman [1], Spencer Short [1], Emma Tam [1], Benjamin F Bitner [1], Abdulghafoor Alani [1], Marc Rosen [1], Mindy Rabinowitz [1], Damaris Pena Evertz [2], Elina Toskala [1], Gurston G Nyquist [1]

Affiliations Expand

- PMID: 41649402

- DOI: 10.1002/alr.70111

Abstract

Background: Post hoc analyses of clinical trials have characterized dupilumab's adverse effects, yet the real-world impact in chronic rhinosinusitis with nasal polyps (CRSwNP) and asthma is not well described. This study aims to characterize the risks of lymphoma, cardiovascular events, eosinophilia, joint pain, inflammatory arthritis, and sleep apnea in dupilumab-treated CRSwNP and/or asthma patients compared to those not taking dupilumab, and to other biologics.

Methods: This retrospective cohort study used TriNetX, a de-identified database containing over 100 million patient records. Demographics and adverse effects associated with immunotherapy use were collected.

Results: We identified 21,249 dupilumab-treated CRSwNP and/or asthma patients. After matching for demographics, comorbid conditions, and medication use, dupilumab was associated with a lower risk of acute myocardial infarction (RR 0.538, 95% CI 0.435-0.665), pulmonary embolism (RR 0.639, 95% CI 0.500-0.817),

cerebral infarction (RR 0.716, 95% CI 0.580-0.884), venous thrombosis (RR 0.625, 95% CI 0.511-0.763), cardiovascular disease (RR 0.733, 95% CI 0.678-0.791), and sleep apnea (RR 0.891, 95% CI 0.818-0.970), with a higher risk of eosinophilia (RR 3.157, 95% CI 2.606-3.826), versus no biologic. Dupilumab was associated with a similar risk of lymphoma and musculoskeletal outcomes. Compared to omalizumab and mepolizumab, dupilumab showed a more favorable musculoskeletal and cardiovascular profile, while it demonstrated a largely similar profile to tezepelumab.

Conclusions: Despite eosinophilia, dupilumab was associated with decreased risk of major cardiovascular, thromboembolic, and sleep apnea outcomes in CRSwNP and asthma. These findings suggest dupilumab may confer protection against adverse outcomes beyond respiratory symptom control.

Keywords: adverse events; arthritis; asthma; chronic rhinosinusitis; eosinophilia; lymphoma; nasal polyps.

- **58 references**

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Allergy

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. 2026 Feb 5.

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Comorbid Chronic Rhinosinusitis and Asthma: Shared Risk Factors and Treatment Implications-An EAACI Task Force Report

Sanna Toppila-Salmi [1 2 3], Sietze Reitsma [4], Valérie Hox [5], Simon Gane [6], Philippe Gevaert [7], Juan Maza-Solano [8 9], Alma Helevä [3], Ida Sulku [1], Kaisa Santala [1], Iiris Kangasniemi [1], Ludger Klimek [10], Adam Chaker [11], Aspasia Karavelia [12], Michael Rudenko [13], Oliver Pfaar [14], Laura Van Gerven [15 16 17], Shaari Ariana [18], Michele Schiappoli [19], Marie Lundberg [20], Jan Hagemann [10], Ibon Eguíluz-Gracia [21], Andre Moreira [22 23 24]

Affiliations Expand

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- DOI: 10.1111/all.70237

Abstract

Chronic rhinosinusitis (CRS) and asthma are prevalent conditions that often coexist. These diseases share common inflammatory mechanisms, such as T-helper cell 2 (T2)-high inflammation, driven by interleukin (IL)-4, IL-5, and IL-13 cytokines. The frequent comorbidity between CRS, especially CRS with nasal polyps (CRSwNP), and asthma exacerbates disease severity, impairs quality of life, and complicates treatment. Patients with NSAID-exacerbated respiratory disease (N-ERD) represent a severe phenotype of this disease, characterized by the coexistence of CRSwNP, asthma, and NSAID hypersensitivity, which poses unique therapeutic challenges. This EAACI Task Force explores the shared risk factors, including genetic predispositions, epithelial barrier dysfunction, microbiome dysbiosis, underlying CRS, and asthma. It also evaluates current therapeutic strategies such as biologics, aspirin therapy after desensitization (ATAD), and endoscopic sinus surgery (ESS). Biologics have shown their effectiveness and safety in the treatment of asthma and CRS. Dupilumab, mepolizumab, depemokimab, and omalizumab have emerged as transformative therapies, particularly for patients with severe type 2 inflammation. Tezepelulumab is effective for both T2-high and T2-low asthma and CRSwNP. Itepekimab has shown its effect in asthma and is under investigation for CRSwNP. Omalizumab is effective in allergic asthma and CRSwNP. ATAD provides an additional disease-modifying approach for N-ERD, though patient adherence and tolerability remain critical challenges. ESS significantly improves asthma control, reduces medication use, and enhances sinonasal outcomes, particularly in severe asthma cases; however, these patients often need recurring surgeries. Despite these advances, treatment outcomes vary based on individual phenotypes and endotypes, underscoring the need for personalized approaches. The report highlights gaps in the literature, such as the lack of head-to-head trials comparing biologics, ATAD, and surgery. Future research should focus on refining treatment algorithms, identifying biomarkers for treatment selection, and assessing long-term outcomes to optimize care for patients with CRS, asthma, and N-ERD.

Keywords: ENT (rhinitis, sinusitis, nasal polyps…); asthma; asthma treatment.

- 199 references

Supplementary info

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Allergol Int

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doi: 10.1016/j.alit.2025.12.004. Online ahead of print.

Outcomes following the discontinuation of biologic therapy in patients with severe asthma

Tadao Nagasaki [1], Hisako Matsumoto [2], Takashi Iwanaga [3], Kazuto Matsunaga [4], Kiyoshi Sekiya [5], Tomoya Harada [6], Shogo Sakurai [7], Norihiro Harada [8], Toshiyuki Koya [9], Koichi Fukunaga [10], Takeshi Kaneko [11], Kazuhisa Asai [12], Yuko Komase [13], Yasuhiro Gon [14], Akihiko Tanaka [15], Hironori Sagara [15], Hironobu Sunadome [16], Tatsuya Nagano [17], Yoichi Nakamura [18], Akio Niimi [19], Noboru Hattori [20], Takashi Hajiro [21], Hajime Fujimoto [22], Masayuki Hojo [23], Nobuaki Miyahara [24], Masafumi Yamaguchi [25], Kimiko Tsuji [26], Akiko Sano [27], Ryuta Haraguchi [27], Hiroyuki Sano [27], Masato Muraki [1], Yuji Tohda [27]

Affiliations Expand

- PMID: 41644318

- DOI: 10.1016/j.alit.2025.12.004

Free article

Abstract

Background: Biologic therapies are pivotal in managing severe asthma. Despite their efficacy, some patients discontinue biologics, with varying outcomes. Predictors of successful versus unsuccessful discontinuation remain poorly defined. This study aimed to identify clinical factors associated with post-discontinuation outcomes in a real-world practice.

Methods: This retrospective cohort included adults with severe asthma who had received biologics for at least 12 months and subsequently discontinued therapy for a minimum of three consecutive months. We assessed the effects of baseline blood eosinophilia (≥300 cells/μL), residual sputum symptoms during biologic therapy, treatment responsiveness, biologic class, and discontinuation reasons on post-discontinuation asthma exacerbation rates using multivariable Cox models.

Results: A total of 118 patients were analyzed. The Kaplan-Meier analysis estimated a 65 % exacerbation-free probability at 12 months after discontinuation. Factors associated with successful discontinuation included a robust clinical response and

absence of exacerbations before cessation. Conversely, baseline eosinophilia, residual sputum symptoms during biologics, and discontinuation due to inadequate therapeutic response or financial burden were associated with post-discontinuation exacerbations. In class-stratified restricted models, persistent sputum remained significantly associated with post-discontinuation exacerbations after stopping anti-IL-5 therapies, while baseline eosinophilia was associated with post-discontinuation exacerbations after stopping anti-IgE or anti-IL-4Rα. Among patients with sputum symptoms or poor-response discontinuation, the overall frequency of exacerbations declined after discontinuation.

Conclusions: Baseline eosinophilia, persistent sputum during therapy, and discontinuation prompted by poor response or cost may serve as risk factors for post-discontinuation exacerbations; however, risk is phenotype- and class-dependent. Careful patient selection and monitoring are essential when considering the discontinuation of biologic treatment.

Keywords: Adult asthma; Biologics; Discontinuation; Exacerbation; Severe asthma.

Conflict of interest statement

Conflict of interest TKaneko, HM, and HSagara report lecture fees from AstraZeneca, GlaxoSmithKline, Novartis, and Sanofi, unrelated to the submitted work. NHattori, M H, TKoya, KM, NM, TNagano, KS, AT, and MY report lecture fees from AstraZeneca, GlaxoSmithKline, and Sanofi, unrelated to the submitted work. KF reports honoraria for lectures and speaker bureaus from AstraZeneca, GlaxoSmithKline, Novartis, and Sanofi, unrelated to the submitted work. NHarada reports research grants and lecture fees from AstraZeneca and Sanofi, and lecture fees from GlaxoSmithKline, unrelated to the submitted work. TI reports speaker bureau honoraria from AstraZeneca, GlaxoSmithKline, and Novartis, unrelated to the submitted work. AN reports lecture fees from AstraZeneca, and GlaxoSmithKline, unrelated to the submitted work. HSano reports lecture fees from AstraZeneca, GlaxoSmithKline, and Novartis, unrelated to the submitted work. YT reports lecture fees from AstraZeneca, GlaxoSmithKline, unrelated to the submitted work. The rest of the authors have no conflict of interest.

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Updated Treatment of Non-Steroidal Anti-Inflammatory Drug-Exacerbated Respiratory Disease: How to Decide on Aspirin Therapy After Desensitization or Biologics? When? How? An EAACI Task Force Report

Gülfem E Çelik [1], Joanna S Makowska [2], Maria Jose Torres [3 4], Cristobalina Mayorga [5 6], Tanya M Laidlaw [7], Alessandra Vultaggio [8], Sanna Toppila-Salmi [9 10 11], Ludger Klimek [12], Aslı Gelincik [13], Annick Barbaud [14 15], Lene H Garvey [16 17], Ömür Aydın [18], Thomas Eiwegger [19 20 21 22], Katharine M Woessner [23]

Affiliations Expand

- PMID: 41641665

- DOI: 10.1111/all.70243

Abstract

Nonsteroidal anti-inflammatory drug (NSAID)-exacerbated respiratory disease (NSAID-ERD) is a heterogeneous condition characterized by chronic eosinophilic airway inflammation in patients with chronic rhinosinusitis with nasal polyps (CRSwNP) and asthma whose symptoms are aggravated after ingestion of aspirin and other NSAIDs. As a unique treatment, aspirin treatment after desensitization (ATAD) has been in use for several years after showing the inhibitory effect on CRS symptoms and nasal polyp growth as well as severe asthma. However, in recent years, biologics have also shown to cause a decrease in polyp size as well as associated outcomes such as quality of life. In this manuscript, considerations on choosing the best treatment of NSAID-ERD are laid out based on current literature.

Keywords: NSAIDs exacerbated respiratory disease; aspirin desensitization; aspirin exacerbated respiratory disease; aspirin treatment after desensitization; asthma; biologics; chronic rhinosinusitis with nasal polyps (CRSwNP); endoscopic sinus surgery.

- 122 references

Supplementary info

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Respir Res

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doi: 10.1186/s12931-026-03515-7. Online ahead of print.

Comparative effectiveness of biologics in lung function improvement among patients with severe asthma: a real-world study

Arnaud Bourdin [1], Giorgio Walter Canonica [2], Johann Christian Virchow [3], Kinga Borsos [4], Richard H Stanford [5], Olivier Ledanois [6], Jason Kwah [7], Wenzhen Ge [7], Lynn Huynh [8], Mei Sheng Duh [8], Andra-Ecaterina Boca [8], Wei-Han Cheng [4], Aakash Gandhi [9]

Affiliations Expand

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Free article

No abstract available

Keywords: Biologics; Dupilumab; EU-ADVANTAGE; FEV1; Lung function; Real world; Severe asthma.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The study received exemption from the Pearl Institutional Review Board along with an authorisation waiver. Consent for publication: Not applicable. Competing interests: AB received research grants from AstraZeneca-MedImmune, Boehringer Ingelheim, Cephalon/Teva, GSK, Novartis, Sanofi and Regeneron Pharmaceuticals Inc. and is a consultant to Med-in-Cell, Actelion, Merck, Roche and Chiesi Pharmaceuticals and an investigator/coinvestigator for AstraZeneca-MedImmune, Boehringer Ingelheim, GSK, Novartis, Sanofi, Regeneron Pharmaceuticals, Inc., Chiesi Pharmaceuticals, Actelion, Merck, Roche, Vertex and Galapagos. GWC received research grants and lecturer or advisory board fees from A. Menarini, Allergy Therapeutics, AstraZeneca, Chiesi Pharmaceuticals, Faes, Firma, Genentech, GSK, HAL Allergy, Innovacaremd, Novartis, OM Pharma, Red Maple, Sanofi-Aventis, Sanofi-Genzyme, Stallergenes Greer and Uriach Pharma. JCV received research grants from Deutsche Forschungsgesellschaft, Land Mecklenburg-Vorpommern, GSK and MSD; is an advisory committee member of Avontec, Boehringer Ingelheim, Cipla, Chiesi

Pharmaceuticals, Essex/Schering Plough, Genzyme, GSK, Janssen-Cilag, MEDA, MSD, Mundipharma, Novartis, Regeneron Pharmaceuticals, Inc., Revotar, Roche, Sanofi-Aventis, Sandoz-Hexal, TEVA, UCB/Schwarz-Pharma and others; has conducted independent lectures for and received honoraria from AstraZeneca, Avontec, Bayer, Bencard, Bionorica, Boehringer Ingelheim, Chiesi Pharmaceuticals, Cipla, German Remedies, Essex/Schering-Plough, Genzyme, GSK, Janssen-Cilag, Leti, MEDA, Merck, MSD, Mundipharma, Noramed, Novartis, Nycomed/Altana, Pfizer, Providens, Regeneron Pharmaceuticals, Inc., Revotar, Sandoz-Hexal, Sanofi-Aventis, Stallergenes Greer, TEVA, UCB/Schwarz-Pharma, Zydus/Cadila and others. KB and W-HC were employees of Sanofi at the time of this study execution. RHS is an employee of AESARA Inc. and a paid consultant to Sanofi. OL and AG are employees of Sanofi and may hold stocks and/or stock options in the company. JK and WG are employees of Regeneron Pharmaceuticals Inc. and may hold stocks and/or stock options in the company. LH and MSD are employees of Analysis Group, Inc., which received research funds from Sanofi. LH and MSD served as consultants to GSK PLC., within the past 36 months, for which Analysis Group, Inc. received research funding. AE-B was an employee of Analysis Group, Inc. at the time of conception, conduct and completion of the study as well as during the manuscript development.

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Review

Curr Allergy Asthma Rep

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. 2026 Feb 4;26(1):8.

doi: 10.1007/s11882-026-01252-x.

Biologics in Pediatric Asthma: Controlling Symptoms, Maintaining Safety, and Improving Outcomes

Priya Chopra [1], William C Anderson Iii [2]

Affiliations Expand

- PMID: 41636912

- DOI: 10.1007/s11882-026-01252-x

No abstract available

Keywords: Biologic efficacy; Biologic safety; Biologic therapy; Pediatric asthma; Severe asthma; Type 2 inflammation.

Conflict of interest statement

Declarations. Competing interests: The authors declare no competing interests. Human and Animal Rights and Informed Consent: This article does not contain any studies with human or animal subjects performed by any of the authors. Disclosures: Dr. Chopra has no disclosures. Dr. Anderson has served as a consultant for Regeneron and Sanofi. He has received program development support from the Colorado Medicaid Supplement Funding Program.

- 62 references

Supplementary info

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Cochrane Database Syst Rev

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. 2026 Feb 3;2(2):CD016177.

doi: 10.1002/14651858.CD016177.

Metformin for asthma exacerbations

Nurul Syafiqah Othman [1,2], Amy Hy Chan [1], Jeff Harrison [1], Kebede A Beyene [1], Adam Wright-St Clair [1], Nataly Martini [1], Jiayi Gong [1]

Affiliations Expand

- PMID: 41631535

- PMCID: PMC12865881

- DOI: 10.1002/14651858.CD016177

Abstract

This is a protocol for a Cochrane Review (intervention). The objectives are as follows: To assess the effects of metformin for exacerbations in people with asthma.

Conflict of interest statement

AC: AC is affiliated with the Asthma UK Centre for Applied Research and was previously supported by Asthma UK (AUK-AC-2012-01 and AUK-AC-2018-01). AC is the Clinical Director for Asthma NZ and on the Scientific Advisory Board for the Asthma and Respiratory Foundation NZ. AC is a working group lead for the European Respiratory Society (ERS) 'CONNECT' Clinical Research Collaboration and Chair of the adherence working group for Respiratory Effectiveness Group (REG). NS: PhD Candidate supervised by JG, AC, JH. No conflict of interest. JH: no conflict of interest. KB: honorary academic at The University of Auckland and current employee of Cigna (Evernorth Research Institute). AW: no conflict of interest. NM: no conflict of interest. JG: no conflict of interest.

- 77 references

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Curr Opin Pulm Med

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. 2026 Feb 3.

doi: 10.1097/MCP.0000000000001248. Online ahead of print.

Pulmonary rehabilitation in adults with asthma

Inga Jarosch [1 2], Tessa Schneeberger [1 2], Rainer Gloeckl [1 2], Andreas Rembert Koczulla [1 2 3]

Affiliations Expand

- PMID: 41631368

- DOI: 10.1097/MCP.0000000000001248

Abstract

Purpose of review: Nonpharmacological strategies, including pulmonary rehabilitation (PR), are increasingly recognized as essential components of asthma management, particularly for individuals with persistent symptoms, poor asthma symptom control, or complex disease. This review summarize recent evidence on PR and related behavioural, lifestyle, and digital interventions, and explores emerging models to improve access and long-term effectiveness.

Recent findings: Current evidence demonstrate that PR improves asthma control, exercise capacity, quality of life, and several patient-reported outcomes across multiple asthma phenotypes. Benefits extend to those with obesity-associated asthma, elevated airway inflammation, and high psychosocial burden. Early data also suggest reductions in exacerbation frequency and steroid requirements. Nevertheless, PR remains markedly underutilized. Digital self-management interventions show promising, albeit inconsistent effects on asthma control, with adherence being a critical determinant of success. New models combining synchronous (real-time) supervision with modular digital components may address major access barriers and provide scalable support.

Summary: Although underutilized in routine care, PR and other structured nonpharmacological strategies offer clinically meaningful benefits for individuals with asthma. Flexible, digitally enabled delivery models aligned with disease complexity may help to expand reach, promote earlier intervention and support sustained behavioural change. Future work should prioritize phenotype-specific effectiveness, long-term outcomes and implementation frameworks.

Keywords: asthma; healthcare delivery; nonpharmacologic therapies; pulmonary rehabilitation; telemedicine.

- 27 references

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Ann Intern Med

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. 2026 Feb 3.

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In severe chronic rhinosinusitis with polyps and asthma, dupilumab improved nasal polyp score and sense of smell vs. omalizumab at 24 wk

Derek K Chu [1], Matthew A Rank [2]; ACP Journal Club Editorial Team at McMaster University

Affiliations Expand

- **PMID: 41628459**

- **DOI: 10.7326/ANNALS-25-05457-JC**

Abstract

GIM/FP/GP: [Formula: see text] Allerg & Immunol: [Formula: see text] Pulmonology: [Formula: see text].

Conflict of interest statement

Disclosures: Disclosure forms are available with the article online.

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J Asthma

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doi: 10.1080/02770903.2026.2623427. Online ahead of print.

Clinical response to biologic therapies in patients with severe asthma: impact of obesity status

Ninon Brousse [1], Bruno Pereira [2], Benjamin Bonnet [3], Yves Boirie [4], Clairelyne Dupin [5], Camille Rolland-Debord [1]

Affiliations Expand

- PMID: 41606965

- DOI: 10.1080/02770903.2026.2623427

Abstract

Background: Biologic agents targeting airway inflammation improve symptoms and reduce corticosteroid use in severe asthma. Obesity is associated with more severe disease and greater corticosteroid dependence. However, data are limited on whether obesity modifies the clinical response to biologics.

Objective: To compare clinical outcomes of biologics in severe asthma patients with and without comorbid obesity.

Methods: We conducted a retrospective, single-center observational study of adults with severe asthma receiving biologics. Patients were classified by obesity status (BMI > 30 kg/m^2). Baseline characteristics and outcomes at 6 months were compared, including proportion of patients experiencing at least one exacerbation, changes in weight and lung function, and biologic switching/discontinuation.

Results: Eighty-one patients were included (mean age 58 ± 17 years; mean BMI 28.1 ± 7.7 kg/m^2), of whom 28 (34.5%) were obese. Obese patients had higher prevalence of obstructive sleep apnea (25% vs. 3.8%, $p < 0.001$) and more often received triple inhaled therapy (85.7% vs. 54.7%, $p = 0.005$). Baseline proportion of patients experiencing at least one exacerbation were similar between obese and non-obese patients (median 3 [IQR 1-3] vs. 2 (1-3), respectively; $p = 0.356$). At 6 months, the proportion of patients with at least one exacerbation was 28.6% in obese patients (8/28) and 20.8% in non-obese patients (11/53), with no significant difference between groups (OR 1.53, 95% CI 0.53-4.39; $p = 0.431$). Obese patients experienced modest but significant weight loss ($p = 0.045$). Biologic switching/discontinuation rates were similar.

Conclusions: Obesity did not significantly alter the clinical response to biologics in severe asthma, suggesting comparable efficacy across BMI categories.Further studies with deeper phenotyping are needed to optimize treatment strategies for this complex phenotype.

Keywords: Severe asthma; biotherapy; obesity; response.

Cite

21

Editorial

Eur Respir J

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doi: 10.1183/13993003.02244-2025. Print 2026 Feb.

Addressing the global challenges of COPD and asthma: a shared vision from the Global Initiative for Chronic Obstructive Pulmonary Disease (GOLD) and the Global Initiative for Asthma (GINA)

David M G Halpin [1 2], Refiloe Masekela [3 4 2], Claus F Vogelmeier [5], Obianuju B Ozoh [6], Alvaro A Cruz [7], Helen K Reddel [8 9 10], Arzu Yorgancioglu [11 12], Alvar Agusti [13 12]; Boards of Directors of the Global Initiative for Chronic Obstructive Lung Disease (GOLD) and Global Initiative for Asthma (GINA)

Affiliations Expand

- PMID: 41198399

- DOI: 10.1183/13993003.02244-2025

No abstract available

Conflict of interest statement

Conflict of interest: D.M.G. Halpin reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Inogen, Novartis, Pfizer, Sanofi and Menarini, and participation on a data safety monitoring board or advisory board with Chiesi and Synairgen. R. Masekela reports an unpaid leadership or fiduciary role as GINA scientific committee member. C.F. Vogelmeier reports grants from German Ministry of Education and Science (BMBF), AstraZeneca, Boehringer Ingelheim, Chiesi, CSL Behring, GlaxoSmithKline and Grifols, consultancy fees from Aerogen, AstraZeneca, Boehringer Ingelheim, CSL Behring, Chiesi, GlaxoSmithKline, Insmed, Menarini, Roche and Sanofi, and payment or honoraria for lectures, presentations, manuscript writing or educational events from Aerogen, AstraZeneca, Boehringer Ingelheim, CSL Behring, Chiesi, GlaxoSmithKline, Insmed, Menarini, Roche and Sanofi. O.B. Ozoh reports grants from National Institute of Health and Care Research (UK) and Medical Research Foundation, payment or honoraria for lectures, presentations, manuscript writing or educational events from Gerts

Pharma, and an unpaid leadership or fiduciary role as Board member of the Global Initiative for Chronic Obstructive Lung Disease (GOLD). A.A. Cruz reports consulting fees from AstraZeneca, Chiesi, GSK and Sanofi, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Chiesi, GSK, Sanofi and Eurofarma, support for attending meetings from AstraZeneca, and is a member of the Board of Directors of the Global Initiative for Asthma (GINA), President of Fundacao ProAR and member of the WHO Asthma Guideline Development Group. H.K. Reddel reports grants from GlaxoSmithKline, AstraZeneca, Sanofi and Chiesi, consultancy fees from AstraZeneca, Sanofi and Chiesi, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Getz, Cipla and Chiesi, support for attending meetings from AstraZeneca, participation on a data safety monitoring board or advisory board with AstraZeneca, GSK, Chiesi, Sanofi and Novartis, leadership role as Chair of the Science Committee for the Global Initiative for Asthma (GINA), and receipt of drugs for an investigator-sponsored study from AstraZeneca. A. Yorgancıoğlu reports unpaid leadership or fiduciary roles as GINA Board Member and ERS Vice President. A. Agusti reports grants from GSK, AZ, Chiesi and Menarini, consultancy fees from GSK, AZ, Chiesi, Roche and Menarini, payment or honoraria for lectures, presentations, manuscript writing or educational events from GSK, AZ, Chiesi, Roche, Menarini, Zambon and Glenmark, support for attending meetings from Roche, and leadership role as Chairman of the Board of Directors of GOLD.

Supplementary info

Publication typesExpand

Full text links

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

Allergy
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. 2026 Feb 5.
doi: 10.1111/all.70237. Online ahead of print.

Comorbid Chronic Rhinosinusitis and Asthma: Shared Risk Factors and Treatment Implications-An EAACI Task Force Report

Sanna Toppila-Salmi [1 2 3], Sietze Reitsma [4], Valérie Hox [5], Simon Gane [6], Philippe Gevaert [7], Juan Maza-Solano [8 9], Alma Helevä [3], Ida Sulku [1], Kaisa Santala [1], Iiris Kangasniemi [1], Ludger Klimek [10], Adam Chaker [11], Aspasia Karavelia [12], Michael Rudenko [13], Oliver Pfaar [14], Laura Van Gerven [15 16 17], Shaari Ariana [18], Michele Schiappoli [19], Marie Lundberg [20], Jan Hagemann [10], Ibon Eguíluz-Gracia [21], Andre Moreira [22 23 24]

Affiliations Expand

- **PMID: 41645639**
- **DOI: 10.1111/all.70237**

Abstract

Chronic rhinosinusitis (CRS) and asthma are prevalent conditions that often coexist. These diseases share common inflammatory mechanisms, such as T-helper cell 2 (T2)-high inflammation, driven by interleukin (IL)-4, IL-5, and IL-13 cytokines. The frequent comorbidity between CRS, especially CRS with nasal polyps (CRSwNP), and asthma exacerbates disease severity, impairs quality of life, and complicates treatment. Patients with NSAID-exacerbated respiratory disease (N-ERD) represent a severe phenotype of this disease, characterized by the coexistence of CRSwNP, asthma, and NSAID hypersensitivity, which poses unique therapeutic challenges. This EAACI Task Force explores the shared risk factors, including genetic predispositions, epithelial barrier dysfunction, microbiome dysbiosis, underlying CRS, and asthma. It also evaluates current therapeutic strategies such as biologics, aspirin therapy after desensitization (ATAD), and endoscopic sinus surgery (ESS). Biologics have shown their effectiveness and safety in the treatment of asthma and CRS. Dupilumab, mepolizumab, depemokimab, and omalizumab have emerged as transformative therapies, particularly for patients with severe type 2 inflammation. Tezepelulumab is effective for both T2-high and T2-low asthma and CRSwNP. Itepekimab has shown its effect in asthma and is under investigation for CRSwNP. Omalizumab is effective in allergic asthma and CRSwNP. ATAD provides an additional disease-modifying approach for N-ERD, though patient adherence and tolerability remain critical challenges. ESS significantly improves asthma control, reduces medication use, and enhances sinonasal outcomes, particularly in severe asthma cases; however, these patients often need recurring surgeries. Despite these advances, treatment outcomes vary based on individual phenotypes and endotypes, underscoring the need for personalized approaches. The report highlights gaps in the literature, such as the lack of head-to-head trials comparing biologics, ATAD, and surgery. Future research should focus on refining treatment algorithms, identifying biomarkers for treatment selection, and assessing long-term outcomes to optimize care for patients with CRS, asthma, and N-ERD.

Keywords: ENT (rhinitis, sinusitis, nasal polyps…); asthma; asthma treatment.

- **199 references**

Supplementary info

Grants and fundingExpand

Full text links

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Cite

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Am J Rhinol Allergy

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. 2026 Feb 5:19458924261420337.

doi: 10.1177/19458924261420337. Online ahead of print.

Factors Impacting Adherence to Saline Nasal Irrigation Treatment in an Urban Population

Raena Greenbaum [1], Anusha Ponduri [2], Manish Bhatta [1], Anastasia Fotis [1], Carolyn Rachofsky [1], Alice Lee [2], Nadeem Akbar [2], Patrick Colley [2], Christina H Fang [2]

Affiliations Expand

- PMID: 41642877

- DOI: 10.1177/19458924261420337

Abstract

BackgroundSaline nasal irrigation (SNI) is an effective first-line treatment for allergic rhinitis (AR) and chronic rhinosinusitis (CRS), yet adherence remains challenging. Better understanding of adherence patterns and related barriers is important for the development of patient-centered interventions to improve adherence.ObjectiveTo investigate adherence to SNI in patients with AR and CRS, including clinical and sociodemographic predictors of adherence, reported barriers to adherence, and patient-recommended methods to increase adherence.MethodsAdult patients treated with SNI for AR or CRS at our medical center in January 2024 were surveyed via phone in December 2024, and their medical records were reviewed. The primary outcome was adherence rate. Secondary outcomes included patient-reported barriers and proposed methods for improving adherence.ResultsOf 174 patients surveyed, 38.9% were adherent. Adherence was significantly associated with English as a primary language (*P* = .026) and history of allergies (*P* = .043), with a borderline significant association with prior endoscopic sinus surgery (ESS) (*P* = .053). The most cited barriers were logistical issues (*n* = 26, 21.3%), discomfort or pain (*n* = 21, 17.2%), forgetting (*n* = 17, 13.9%), and the time required (*n* = 16, 13.1%). The most commonly suggested interventions were better instructions for use (*n* = 28, 28.0%), increased education about SNI (*n* = 27, 27.0%), offering a list of affordable options (*n* = 24, 24.0%), and help setting up reminders (*n* = 21, 21.0%).ConclusionIn our urban population, adherence to SNI among patients with AR and CRS is relatively low. English speakers, those with allergies, and those with prior ESS are more likely to adhere. Barriers include logistics, discomfort, forgetfulness, and time commitment. Patient-centered interventions such as education, clearer instructions, cost transparency, and reminders may increase adherence.

Keywords: adherence; allergic rhinitis; chronic rhinosinusitis; endoscopic sinus surgery; health disparities; health literacy; patient education; patient-centered interventions; saline nasal irrigation; survey study.

3

Clin Exp Allergy

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. 2026 Feb 3.

doi: 10.1111/cea.70229. Online ahead of print.

Effectiveness and Predictors of House Dust Mite Subcutaneous Immunotherapy in Polysensitised Patients With Allergic Rhinitis: A Multicentre Retrospective Study

Zhouxian Pan [1], Shengyang Yao [1 2], Lisha Li [1], Yongshi Yang [1 3], Wenchao Guan [4], Yin Wang [3], Xiaoshang Lou [5], Chuanhe Liu [5], Yanmin Bao [6], Shijie Zhuang [6], Li Sha [5], Ruonan Chai [4], Rongfei Zhu [3], Kai Guan [1]

Affiliations Expand

- PMID: 41633380

- DOI: 10.1111/cea.70229

Abstract

Background: In China, therapeutic options are limited by the narrow availability of allergen preparations, with house dust mite (HDM) allergen immunotherapy (AIT) as the main choice for most patients. However, polysensitization is highly prevalent, and the benefit of HDM AIT in such patients remains uncertain. The study aims to evaluate the effectiveness of single-allergen HDM AIT on both perennial and coexisting allergen-specific symptoms in polysensitised allergic rhinitis (AR) patients and to explore predictors of treatment response.

Methods: We performed a multicenter retrospective cohort study including 81 patients with AR who were polysensitised to HDM and at least one other inhalant allergen (e.g., pollens, mould or animal dander). All participants received HDM subcutaneous immunotherapy (SCIT) for 12 to 36 months. Baseline characteristics, including serum allergen-specific IgE (sIgE) levels and comorbidities, were collected. Symptom severity was assessed using the Visual Analog Scale (VAS), and treatment response was defined as a ≥ 30% reduction in VAS scores from baseline. Statistical comparisons between responders and non-responders were conducted using Fisher's exact test for categorical variables and Mann-Whitney U tests for continuous data. Firth logistic regression was used to identify predictors of treatment response.

Results: The overall response rate for perennial symptoms was 68.8%, and varied in patients with co-existing allergies: 72.7% for moulds, 70.0% for animal dander, 65.5% for tree pollen, 70.2% for weed pollens. Allergen-specific symptom response rates varied across allergens: 68.2% for moulds, 30.0% for animal dander, 56.7% for tree pollens, 74.5% for weed pollens. Higher sIgE levels to HDM and mould were significantly associated with lower response rates in patients co-sensitised to both. A predictive model incorporating both sIgEs showed good specificity.

Conclusion: Single-allergen HDM AIT is effective in many polysensitised AR patients; however, its efficacy varies by coexisting allergen type and sIgE level. Patients co-sensitised to mould with high HDM and mould sIgE appeared to have poorer outcomes. These preliminary findings require confirmation in larger prospective studies to guide tailored AIT strategies.

Keywords: allergic rhinitis; house dust mite; moulds; multicenter study; polysensitization; subcutaneous immunotherapy.

- 28 references

Supplementary info

Grants and fundingExpand

Full text links

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

1

Respir Med

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. 2026 Feb 4:108697.

doi: 10.1016/j.rmed.2026.108697. Online ahead of print.

"Side versus adverse effects of elexacaftor/tezacaftor/ivacaftor therapy in people with CF"

J B A Gorgels [1], J Koopman [1], E C van der Hout [1], R W Hofland [1], H G M Heijerman [1], I Bronsveld [1]

Affiliations Expand

- PMID: 41651036

- DOI: 10.1016/j.rmed.2026.108697

Abstract

Background: Elexacaftor/Tezacaftor/Ivacaftor (ETI) therapy is highly effective for people with cystic fibrosis (pwCF) carrying at least one F508del mutation. However, clinical trials often include a limited subset of eligible patients, with inclusion rates as low as 31%. Additionally, some adverse effects linked to ETI may stem from restored CFTR function (side effects) rather than drug toxicity (adverse effects). This study evaluates the real-world efficacy and tolerability of ETI in adults with CF, while differentiating side from adverse effects.

Methods: In this retrospective single-centre cohort study, 198 adults with CF (46.5% female) initiating ETI between January 2022 and April 2023 were analysed. Clinical data, laboratory results, and adverse events were collected. Subgroup-analyses were performed based on baseline ppFEV1 and genotype.

Results: ETI therapy increased mean ppFEV1 by 11.2% (95% CI: 9.7%, 12.7%) and BMI by 0.7 kg/m^2 (95% CI: 0.5, 0.9), decreased sweat chloride by 43.7 mmol/L (95% CI: -46.7, -40.6), and reduced yearly exacerbation rate (70 vs. 12, p<0.001). Common side effects included increased sputum, cough, and headache. Headache was more frequent in patients with ppFEV1 <40% (p<0.001). Increased sputum and cough were most prevalent in F/F and F/MF subgroups. Frequent adverse effects were fatigue, depressed state, and mood swings. Side effects resolved spontaneously more often than adverse effects (89.3% vs. 47.9%).

Conclusion: ETI demonstrates robust real-world efficacy in adults with CF. Side effects due to CFTR restoration are generally self-limiting, whereas adverse effects from drug toxicity persist longer and are more frequently cause for permanent discontinuation of ETI.

Keywords: Adverse effects; Cystic fibrosis; ETI; Elexacaftor/Tezacaftor/Ivacaftor; Real-world; Side effects.

Conflict of interest statement

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

Full text links

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Cite

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Allergol Int

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. 2026 Feb 3:S1323-8930(26)00002-X.

doi: 10.1016/j.alit.2025.12.007. Online ahead of print.

Long-term changes and risk factors for persistent cough and sputum in adult patients with asthma treated by Japanese specialists: The SARAS study (1997-2023)

Chikako Kitamura [1], Satsuki Miyajima [2], Hiroshi Tanaka [3], Mitsuhide Ohmichi [4], Midori Hashimoto [5], Takumi Yoshikawa [6], Yoshitaka Sugawara [7], Eiji Ito [8], Eiki Kikuchi [9], Chiaki Hamamatsu [10], Katsunori Shigehara [11], Takiko Aketa [12], Toshiyuki Sumi [13], Yasuhito Honda [14], Masayuki Koyama [15], Hirotaka Nishikiori [1], Hirofumi Chiba [1]

Affiliations Expand

- **PMID: 41638962**

- **DOI: 10.1016/j.alit.2025.12.007**

Free article

Abstract

Background: Advances in pharmacologic therapy have improved asthma outcomes, yet persistent symptoms can challenge a subset of patients, thereby hindering clinical remission. This study aimed to assess longitudinal trends in symptom control and identify factors associated with persistent symptoms in adult patients with asthma receiving established treatments in Japan.

Methods: We analyzed data from the SApporo Real-world Asthma Survey, a repeated cross-sectional study conducted in Japan over a 26-year period (1997-2023). The participants were adult patients with asthma receiving guideline-based

care from respiratory and/or allergy specialists. Data were collected through patient questionnaires and physician records. Multivariable logistic regression analysis was performed to identify risk factors for persistent symptoms.

Results: The median age of the analyzed 13,243 patients increased during the study (from 52 years in 1997 to 60 years in 2023), as did the proportion of women. Although nighttime symptoms, dyspnea, and unscheduled visits for exacerbation declined, 10 %-30 % of patients reported persistent cough and 20 %-40 % had sputum despite therapeutic advances. Chronic rhinosinusitis and current smoking were significant predictors of persistent symptoms. Patients undergoing intensive therapies had a higher symptom burden, although the symptom severity and unscheduled visit rates decreased within each treatment category over time.

Conclusions: Despite therapeutic advances and guideline-based specialist care, residual symptoms, especially cough and sputum, persisted in a significant proportion of Japanese adult patients with asthma. Comprehensive management strategies targeting comorbidities such as chronic rhinosinusitis and smoking are essential to achieve clinical remission and improve patient-centered outcomes.

Keywords: Asthma; Chronic rhinosinusitis; Cough; Longitudinal studies; Sputum.

Conflict of interest statement

Conflict of interest HT reports receiving payments or honoraria for lectures, presentations, manuscript writing, or educational events from GSK, Novartis Pharma, AstraZeneca, and Kyorin. MO reports receiving payments or honoraria for lectures, presentations, manuscript writing, or educational events from GSK. TS reports receiving payments or honoraria for lectures, presentations, manuscript writing, or educational events from GSK, AstraZeneca, and Sanofi. HN reports receiving research funding from Boehringer Ingelheim (Japan) and M3, as well as consulting fees from M3. The rest of the authors have no conflict of interest.

3

Review

Eur Respir Rev

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. 2026 Feb 4;35(179):250159.

doi: 10.1183/16000617.0159-2025. Print 2026 Jan.

Neuroplasticity and neuroimmune interactions with type 2 inflammation in asthma

Carli S Koster [1 2 3], Chiara Lavitola [1 2 3], Raluca Teodorescu [1], Bart A Bakker [1], Reinoud Gosens [4 2]

Affiliations Expand

- PMID: 41638876

- PMCID: PMC12871055

- DOI: 10.1183/16000617.0159-2025

Abstract

The lungs are innervated by both afferent and efferent nerve fibres that regulate key respiratory functions, including the cough reflex, airway tone, mucus secretion, and the detection of mechanical and chemical stimuli. In asthma, airway hyperresponsiveness and inflammation are, in part, modulated by the nervous system. Recent findings have identified neuroplasticity as a pathological feature of severe asthma, suggesting that altered neural remodelling contributes to disease symptoms. Additionally, growing evidence highlights bidirectional interactions between the airway nervous system and local immune cells, which play a crucial role in modulating each other's activity. In this review, we explore the emerging roles of airway neuroplasticity and neuroimmune interactions in the development of type 2 inflammation in asthma. We focus on the involvement of neuropeptides and cytokines in mediating this bidirectional crosstalk, aiming to elucidate the mechanistic link between neural remodelling and immune activation and to identify novel targets for pharmacological intervention.

Conflict of interest statement

Conflict of interest: C.S. Koster reports support for the present study from the Dutch Research Council (NWO), grant OCENW.M20.107, and the payment was made to the institution (University of Groningen). C. Lavitola reports support for the present study from ZonMW grant number 09120232310020, and the payment was made to the institution (University of Groningen). R. Teodorescu and B.A. Bakker have nothing to disclose. R. Gosens reports support for the present study from the Dutch Research Council (NWO) and ZonMW, with payments made to the institution; grants from Chiesi, Aquilo, MimeCure and Boehringer Ingelheim; royalties or licences from patent PCT/NL2024/050253 (Osteoglycin) licensed by the institution to MimeCure BV; and patents planned, issued or pending (PCT/NL2024/050253 Osteoglycin) with MimeCure BV.

Comment in

- doi: 10.1183/16000617.0191-2025
- 179 references
- 2 figures

Supplementary info

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4

BMC Pediatr

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. 2026 Feb 3.

doi: 10.1186/s12887-026-06546-7. Online ahead of print.

Difference of breath sound spectrum between healthy children and children with cough variant asthma

Di Lv [#1,2], Chaoshang Hu [#3], Jing Liu [#1], Lijuan Tang [1], Yuanmei Chen [1], Fang Ye [1], Chao Wang [1], Yiqiang Fan [4], Qi Zhang [5,6]

Affiliations Expand

- PMID: 41634642

- DOI: 10.1186/s12887-026-06546-7

Free article

No abstract available

Keywords: Allergy grades; Breath sounds analysis; Children; Cough variant asthma; Pulmonary function.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study was conducted in accordance with the ethical principles outlined in the Institutional Review Board of China-Japan Friendship Hospital (No: 2022-KY-006-1). Written informed consent was obtained from the legal guardians of all children who participated in this study. All study procedures were in accordance with the ethical standards of the Declaration of Helsinki. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- **38 references**

Supplementary info

Grants and fundingExpand

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

1

BMC Pulm Med

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. 2026 Feb 7.

doi: 10.1186/s12890-026-04145-x. Online ahead of print.

Clinical and prognostic characteristics of stable bronchiectasis in adults with chronic Pseudomonas aeruginosa infection: a prospective cohort study

Rui Zhou [#1], Shao-Yan Zhang [#1], Ben Su [1], Tao Chen [1], Xin-Yuan Xu [1], Yu-Xian Chen [1], Zheng-Yi Zhang [1], Ding-Zhong Wu [1], Zhen-Hui Lu [2], Lei Qiu [3]

Affiliations Expand

- **PMID: 41654920**

- **DOI: 10.1186/s12890-026-04145-x**

Free article

No abstract available

Keywords: Bronchiectasis; Chronic infection; Lung function; Propensity score matching; Pseudomonas aeruginosa.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The study was approved by the Ethics Committee of Longhua Hospital Affiliated to Shanghai University of Traditional Chinese Medicine (Approval No. 2019LCSY058 and 2024LCSY144), in accordance with the Declaration of Helsinki. Written informed consent was obtained from all patients/participants involved in the study. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- **38 references**

Supplementary info

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Comment

Eur Respir J

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. 2026 Feb 5;67(2):2501434.

doi: 10.1183/13993003.01434-2025. Print 2026 Feb.

Beyond phenotypic differences: integrating clinical pharmacy into precision management of paediatric-onset bronchiectasis

Jiaying Ding [1 2], Jun Li [3 4], Yaling Li [5 2 4]

Affiliations Expand

- **PMID: 41644179**

- **DOI: 10.1183/13993003.01434-2025**

No abstract available

Conflict of interest statement

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

Comment on

- **Greater disease severity in adults with paediatric-onset *versus* adult-onset bronchiectasis: a multicentre EMBARC registry study.**

Khalaili L, Aliberti S, Viligorska K, Blasi F, Stein N, Cohen R, Zoubi R, Adir Y, De Angelis A, New BJ, Marshall L, Chalmers JD, Shteinberg M.Eur Respir J. 2026 Jan 22;67(1):2500665. doi: 10.1183/13993003.00665-2025. Print 2026 Jan.PMID: 40610053 Free PMC article.

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Comment

Eur Respir J

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. 2026 Feb 5;67(2):2501810.

doi: 10.1183/13993003.01810-2025. Print 2026 Feb.

Reply to: An incomplete map: diagnostic gaps in bronchiectasis by age of onset

Michal Shteinberg [1 2], Luai Khalaili [3], Nili Stein [4], Stefano Aliberti [5 6], Francesco Blasi [7 8], James D Chalmers [9]

Affiliations Expand

- **PMID: 41644177**

- **DOI: 10.1183/13993003.01810-2025**

No abstract available

Conflict of interest statement

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Comment on

- **Greater disease severity in adults with paediatric-onset *versus* adult-onset bronchiectasis: a multicentre EMBARC registry study.**

Khalaili L, Aliberti S, Viligorska K, Blasi F, Stein N, Cohen R, Zoubi R, Adir Y, De Angelis A, New BJ, Marshall L, Chalmers JD, Shteinberg M.Eur Respir J. 2026 Jan 22;67(1):2500665. doi: 10.1183/13993003.00665-2025. Print 2026 Jan.PMID: 40610053 Free PMC article.

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Publication typesExpand

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Comment

Eur Respir J

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. 2026 Feb 5;67(2):2501578.

doi: 10.1183/13993003.01578-2025. Print 2026 Feb.

An incomplete map: diagnostic gaps in bronchiectasis by age of onset

Yujiao Wu [1 2], Yaling Li [3 4], Jun Li [5 2 4]

Affiliations Expand

- PMID: 41644174

- DOI: 10.1183/13993003.01578-2025

No abstract available

Conflict of interest statement

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Comment on

- Greater disease severity in adults with paediatric-onset *versus* adult-onset bronchiectasis: a multicentre EMBARC registry study.

Khalaili L, Aliberti S, Viligorska K, Blasi F, Stein N, Cohen R, Zoubi R, Adir Y, De Angelis A, New BJ, Marshall L, Chalmers JD, Shteinberg M.Eur Respir J. 2026 Jan 22;67(1):2500665. doi: 10.1183/13993003.00665-2025. Print 2026 Jan.PMID: 40610053 Free PMC article.

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Comment

Eur Respir J

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. 2026 Feb 5;67(2):2501660.

doi: 10.1183/13993003.01660-2025. Print 2026 Feb.

Reply: Paediatric-onset bronchiectasis: an overlooked facet in the multifaceted approach to bronchiectasis

Luai Khalaili [1 2], Stefano Aliberti [3 4], Francesco Blasi [5 6], James Chalmers [7], Michal Shteinberg [8 2]

Affiliations Expand

- **PMID: 41644172**

- **DOI: 10.1183/13993003.01660-2025**

No abstract available

Conflict of interest statement

Conflicts of interest: L. Khalaili has no potential conflicts of interest to disclose. S. Aliberti reports grants from GSK, consultancy fees from Insmed Incorporated, Insmed Italy, Insmed Ireland Ltd, Insmed Netherlands BV, Zambon Spa, AstraZeneca, Menarini, CSL Behring GmbH, Pfizer, Fondazione Internazionale Menarini, Moderna Italy, Moderna TX, Boehringer Ingelheim, Chiesi Farmaceutica Spa, MSD Italia S.r.l., Vertex Pharmaceuticals, BRAHMS GMBH, Physioassist SAS, AN2 Therapeutics, GlaxoSmithKline Spa and Verona, payment or honoraria for lectures, presentations, manuscript writing or educational events from GlaxoSmithKline Spa, Fondazione Internazionale Menarini, INSMED Italy, INSMED Ireland Ltd, Boehringer Ingelheim, Zambon and Vertex Pharmaceuticals, and participation on a data safety monitoring board or advisory board with Insmed Incorporated, Insmed Italy, AstraZeneca UK Limited, MSD Italia S.r.l. and Verona Pharma plc. F. Blasi reports grants from AstraZeneca, Chiesi and Insmed, consultancy fees from Menarini, and payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Chiesi, Boehringer Ingelheim, GSK, Guidotti, Grifols, Insmed, Menarini, Novartis, OM Pharma, Pfizer, Sanofi, Viatris, Vertex and Zambon. J. Chalmers is the Chief Editor of the European Respiratory Journal and reports grants from AstraZeneca, Genentech, Boehringer Ingelheim, Gilead, Chiesi, Grifols, Insmed and Trudell, and consultancy fees from AstraZeneca, Chiesi, GlaxoSmithKline, Insmed, Grifols,

Novartis, Boehringer Ingelheim, Pfizer, Janssen, Antabio and Zambon. M. Shteinberg reports grants from the Tel Aviv League for Lung Diseases and G. Baum Foundation, consultancy fees from AstraZeneca, Boehringer Ingelheim, Dexcel, Kamada, Synchrony Medical, Trumed and Zambon, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, GSK, Kamada, Sanofi and Insmed, support for attending meetings from Boehringer Ingelheim Israel, AstraZeneca Israel, Kamada, Rafa and GSK Israel, participation on a data safety monitoring board or advisory board with Bonus Biotherapeutics, Boehringer Ingelheim and AstraZeneca, and leadership roles with AJRCCM (Associate Editor), JCF (Associate Editor), Israeli Pulmonology Society, Israeli Society for Tuberculosis and Mycobacterial Diseases, EMBARC (Management Board Member), ERJ (Editorial Board Member), the ERS task force on Bronchiectasis Guidelines and ERS task force on Transitioning in Bronchiectasis.

Comment on

- Greater disease severity in adults with paediatric-onset *versus* adult-onset bronchiectasis: a multicentre EMBARC registry study.

Khalaili L, Aliberti S, Viligorska K, Blasi F, Stein N, Cohen R, Zoubi R, Adir Y, De Angelis A, New BJ, Marshall L, Chalmers JD, Shteinberg M.Eur Respir J. 2026 Jan 22;67(1):2500665. doi: 10.1183/13993003.00665-2025. Print 2026 Jan.PMID: 40610053 Free PMC article.

Supplementary info

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Respirology

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. 2026 Feb 4.

doi: 10.1002/resp.70202. Online ahead of print.

Body Composition and Muscle Function in Bronchiectasis: A Comparative Longitudinal Study

Joice Mara de Oliveira [1 2], Amber Smith [1 2], Paola D Urroz Guerrero [1 2], Laura Cordova Rivera [3], Dennis Thomas [2 4], Vanessa L Clark [1 2], Peter G Gibson [2 4 5], Vanessa M McDonald [1 2 5]

Affiliations Expand

- **PMID: 41639944**

- **DOI: 10.1002/resp.70202**

Abstract

Background and objective: Adults with bronchiectasis often present with altered body composition and muscle strength, yet prognostic value of peripheral muscle strength are not well understood. This study compared body composition and muscle function between adults with bronchiectasis and healthy controls and examined whether peripheral muscle strength estimates one-year clinical outcomes.

Methods: Adults with HRCT-confirmed bronchiectasis and controls underwent assessments including DXA (body composition), dynamometry (leg and shoulder strength), and core endurance tests. Participants with bronchiectasis were classified as having retained or impaired leg strength based on the 10^{th} percentile of control values and were reassessed after one year for exacerbations, dyspnoea, quality of life, anxiety and depression, and exercise capacity.

Results: Seventy-one participants with bronchiectasis and 92 controls were included; 43 bronchiectasis participants completed follow-up. Females with bronchiectasis had lower appendicular muscle index ($p = 0.018$) and both sexes had lower bone mineral density compared to their control counterparts ($p < 0.001$). Osteopenia was 3 times more prevalent in females with bronchiectasis compared to their counterparts (54% versus 18%). Females with bronchiectasis have poorer lateral core endurance than those without ($p \leq 0.003$). Leg strength was reduced in bronchiectasis compared to controls, regardless of sex (mean difference [95% CI] for males -25 [-50; -1] Kg and females -18 [-29; -7] Kg). Reduced leg strength is associated with worse dyspnoea, health related quality of life, and functional capacity over one year, explaining up to 33% of the variance ($p \leq 0.001$).

Conclusion: Individuals with bronchiectasis exhibit impaired muscle function and bone health, with leg strength showing a significant association with clinical outcomes over one year.

Keywords: abdominal muscles; bronchiectasis; dyspnoea; quality of life; skeletal muscles; walk test.

- **52 references**

Supplementary info

Grants and fundingExpand

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BMJ Open Respir Res

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. 2026 Feb 4;13(1):e003683.

doi: 10.1136/bmjresp-2025-003683.

Clinical characteristics of pulmonary non-tuberculous mycobacterial disease with *CFTR* variants in the Japanese population

Genta Nagao [1], Ho Namkoong [2], Hiromu Tanaka [1], Takanori Asakura [1 3], Akemi Hara [4], Naoki Fukunaga [1], Masanori Kaji [1], Shuhei Azekawa [1], Kensuke Nakagawara [1], Atsuho Morita [1], Hirofumi Kamata [1], Tomoyasu Nishimura [5], Fuyuki Miya [6], Kenjiro Kosaki [6], Koichi Fukunaga [1], Steven M Holland [7], Naoki Hasegawa [4]

Affiliations Expand

- PMID: 41638757

- PMCID: PMC12878488

- DOI: 10.1136/bmjresp-2025-003683

Abstract

Background: Pulmonary non-tuberculous mycobacterial (NTM) disease is a respiratory infection with an increasing incidence worldwide, including Japan. Host factors may also be involved in the establishment of pulmonary NTM disease. Cystic fibrosis transmembrane conductance regulator (*CFTR*) variants are associated with pulmonary NTM disease and bronchiectasis. However, data on *CFTR* variants in the Japanese population remain limited.

Objectives: We aimed to determine the frequency of *CFTR* variants and the impact on the clinical features of pulmonary NTM disease and bronchiectasis in the Japanese population.

Methods: We analysed 458 patients with either pulmonary NTM disease, non-cystic fibrosis bronchiectasis or both at Keio University Hospital from February 2016 to March 2019. *CFTR* variants were identified using exome sequencing, Sanger sequencing and multiplex ligation-dependent probe amplification (MLPA). These variants were determined to be deleterious using CFTR2 and in silico tools. Clinical characteristics of patients with and without *CFTR* variants were compared in a 1:8

age-matched and sex-matched ratio. Additionally, exome sequencing was performed for the family of a patient with a family history of pulmonary NTM disease.

Results: Deleterious *CFTR* variants were identified in 16 patients (3.5%). One variant was identified by MLPA, and 15 by Sanger sequencing. All patients harboured a *CFTR* variant in one allele. Compared with matched controls, these patients had lower sputum culture conversion rates and higher rates of macrolide resistance. In one family cluster, members with pulmonary NTM disease were found to carry the same *CFTR* variant.

Conclusions: We defined the frequency and clinical characteristics of *CFTR* variants among the Japanese population with either pulmonary NTM disease, non-cystic fibrosis bronchiectasis or both and found that patients with *CFTR* variants may be refractory to pulmonary *Mycobacterium avium* complex disease. Further comprehensive research is needed to assess the impact of *CFTR* variants on pulmonary NTM disease and bronchiectasis in non-European populations.

Keywords: Bacterial Infection; Bronchiectasis; Respiratory Infection.

Conflict of interest statement

Competing interests: None declared.

- 55 references
- 2 figures

Supplementary info

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. 2026 Feb 3.

doi: 10.1038/s41598-026-36722-9. Online ahead of print.

Cardiac autonomic function in bronchiectasis and age and gender-matched healthy participants: case-control study

Dhiya Dinesh [1 2], K Vaishali [3], Anup Bhat [1], Mukesh Kumar Sinha [1], Amithash M Prabhudev [4 5]

Affiliations Expand

- PMID: 41634076

- DOI: 10.1038/s41598-026-36722-9

Free article

Abstract

This study aims to evaluate and compare cardiac autonomic function, specifically through heart rate variability (HRV), between individuals with bronchiectasis and their age- and gender-matched healthy counterparts. This study employed a case-control design, involving 60 participants diagnosed with bronchiectasis (cases) and a control group of healthy individuals matched by age and gender. HRV data was collected over a five-minute interval, focusing on frequency domain parameters including total power, very low frequency (VLF), low frequency (LF), high frequency (HF), and the LF/HF ratio. The bronchiectasis group exhibited a significantly elevated LF/HF ratio, indicating a shift in cardiac sympathovagal balance, relative to the control group (2.25 ± 0.39 vs. 2.05 ± 0.38; p = 0.006). Additionally, marked differences were found in specific frequency domain parameters: LF (2.33 ± 0.55 vs. 2.55 ± 0.46; p = 0.021) and HF (2.06 ± 0.75 vs. 2.5 ± 0.56; p = 0.001). The results suggest a notable disturbance in cardiac autonomic regulation among individuals with bronchiectasis, compared to healthy individuals.

Keywords: Autonomic modulation; Autonomic nervous system; Chronic respiratory diseases; Heart rate variability; Sympathetic nervous system.

Conflict of interest statement

Declarations. Competing interests: The authors declare no competing interests. Ethical approval and consent to participate: The study was approved by Kasturba Medical College and Kasturba Hospital Institutional Ethics Committee (IEC: 72/2018) and was registered under the Clinical Trial Registry of India.(CTRI/2018/11/016355)(https://ctri.nic.in/Clinicaltrials/pmaindet2.php?EncHid=MjU2MzE=&Enc=&userName=CTRI/2018/11/016355). Before their participation, all participants provided informed consent by signing and returning the consent documents.

- 36 references

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Editorial

Expert Rev Respir Med

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. 2026 Feb 5:1-4.

doi: 10.1080/17476348.2026.2624864. Online ahead of print.

Impact of anxiety, depression, fatigue, and social isolation in patients with bronchiectasis

Abebaw Mengistu Yohannes [1 2], Pooja Arora [1], George Marty Solomon [2 3]

Affiliations Expand

- PMID: 41603793

- DOI: 10.1080/17476348.2026.2624864

No abstract available

Keywords: Anxiety; bronchiectasis; depression; fatigue; pulmonary rehabilitation.

Supplementary info

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Comparative Study

Eur Respir J

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Changes in sputum viscoelastic properties and airway inflammation in primary ciliary dyskinesia are comparable to cystic fibrosis on elexacaftor/tezacaftor/ivacaftor therapy

Hannah Nussstein [1 2 3], Ruth M Urbantat [1 2 3 4], Kerstin Fentker [5 6], Aditi Loewe [1 2 3], Julia Duerr [1 2 3], Mohamed Haji [5], Felix Doellinger [7], Mirjam Stahl [1 2 3 4], Simon Y Graeber [1 2 3 4], Michael Gradzielski [8], Jobst Röhmel [1 2 3 4], Philipp Mertins [3 4 5], Laura Schaupp [1 2 3 9], Marcus A Mall [10 2 3 4 9]

Affiliations Expand

- PMID: 40967762
- PMCID: PMC12873463
- DOI: 10.1183/13993003.00616-2025

Abstract

Background: Primary ciliary dyskinesia (PCD) and cystic fibrosis (CF) are muco-obstructive lung diseases that are caused by distinct genetically determined defects in mucociliary clearance; however, knowledge on the relative severity of airway mucus dysfunction and chronic inflammation remains limited. The aim of this study was therefore to compare sputum viscoelastic properties, inflammation markers and the proteome between patients with PCD and patients with CF before and under elexacaftor/tezacaftor/ivacaftor (ETI) therapy.

Methods: We compared sputum rheology, inflammation markers and the proteome in 42 clinically stable adolescent and adult patients with PCD, 40 patients with CF with at least one *F508del* allele before (baseline) and 3 months after initiation of ETI, and 15 age-matched healthy controls.

Results: The elastic modulus (*G'*) and viscous modulus (*G''*) of PCD sputum was increased compared to healthy controls ($p<0.001$), lower than in CF at baseline ($p<0.001$) and similar to CF on ETI. Inflammation markers in PCD sputum including neutrophil elastase, free DNA, myeloperoxidase, interleukin (IL)-1β and IL-8 were also increased compared to healthy controls (all $p<0.001$), lower than in CF at baseline ($p<0.05$ to $p<0.001$) and comparable to CF on ETI. Similarly, changes in the sputum proteome were less pronounced in PCD compared to CF at baseline, but comparable between PCD and CF on ETI.

Conclusions: Clinically stable patients with PCD show changes in sputum viscoelastic properties, inflammation markers and the proteome that are less severe than in patients with CF at baseline, but comparable to CF patients on ETI therapy.

Conflict of interest statement

Conflict of interest: J. Duerr reports support for the present study from the German Research Foundation (DFG). M. Stahl reports support for the present study from the German Research Foundation (DFG), grants, payment or honoraria for lectures, presentations, manuscript writing or educational events from Vertex Pharmaceuticals, participation on a data safety monitoring board or advisory board with Vertex Pharmaceuticals, and is an unpaid chairman of the German Cystic Fibrosis Association, member of the secretary group CF within the European Respiratory Society and treasurer for the German Society for Pediatric Pneumology. S.Y. Graeber reports grants from the Christiane Herzog Foundation, German Cystic Fibrosis Association (FGM) and Vertex Pharmaceuticals, payment or honoraria for lectures, presentations, manuscript writing or educational events from Chiesi and Vertex Pharmaceuticals, support for attending meetings from Vertex Pharmaceuticals, participation on a data safety monitoring board or advisory board with Chiesi and Vertex Pharmaceuticals, and is a board member of the research council of Mukoviszidose e.V., the German Cystic Fibrosis Association (FGM). M. Gradzielski reports grants from the German Research Foundation (DFG) and German Federal Ministry for Education and Research (BMBF) (payments made to institution), and is a board member of the Colloid Society and managing director and treasurer of the Berlin-Brandenburg Association for Polymer Research. J. Röhmel reports payment or honoraria for lectures, presentations, manuscript writing or educational events from Vertex Pharmaceuticals, Insmed, Chiesi and Pari, and is a member of the BEAT-PCD management committee. P. Mertins reports grants from the German Research Foundation (DFG) and German Federal Ministry for Education and Research (BMBF). L. Schaupp reports grants from the German Research Foundation (DFG), and support for attending meetings from Mukoviszidose e.V., German Society for Pediatric Pneumology and European Cystic Fibrosis Society. M.A. Mall reports support for the present study from the European Framework 7 (EUFP7) program, German Research Foundation (DFG) and German Ministry for Education and Research (BMBF), grants from the German Innovation Fund, Vertex Pharmaceuticals, Boehringer Ingelheim and Enterprise Therapeutics, consultancy fees from Boehringer Ingelheim, Enterprise Therapeutics, Kither Biotech, Splisense and Vertex Pharmaceuticals, payment or honoraria for lectures, presentations, manuscript writing or educational events from Vertex Pharmaceuticals, support for attending meetings from Boehringer Ingelheim and Vertex Pharmaceuticals, participation on an advisory board with Boehringer Ingelheim, Enterprise Therapeutics, Kither Biotech, Pari and Vertex Pharmaceuticals, and is a Fellow of the European Respiratory Society and an Associate Editor for the European Respiratory Journal. The remaining authors have no potential conflicts of interest to disclose.

Comment in

- **Inflammation and mucus properties in inherited diseases of mucociliary clearance.**

Shoemark A.Eur Respir J. 2026 Feb 5;67(2):2502426. doi: 10.1183/13993003.02426-2025. Print 2026 Feb.PMID: 41644173 No abstract available.

- **Cited by 1 article**
- **53 references**
- **4 figures**

Supplementary info

Publication types, MeSH terms, Substances