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

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Acad Radiol

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. 2025 Nov 6:S1076-6332(25)01018-9.

doi: 10.1016/j.acra.2025.10.032. Online ahead of print.

Heterogeneity in Normal-appearing Lung Tissue on CT as a Potential Biomarker for Progression in COPD

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Affiliations Expand

- **PMID: 41203515**

- **DOI: 10.1016/j.acra.2025.10.032**

No abstract available

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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Int J Clin Pharm

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. 2025 Nov 7.

doi: 10.1007/s11096-025-02037-4. Online ahead of print.

Comparative effectiveness and safety of fluticasone-based versus beclometasone-based single-inhaler triple therapies in patients with chronic obstructive pulmonary disease: a population-based cohort study

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Affiliations Expand

- PMID: 41201486

- DOI: 10.1007/s11096-025-02037-4

Abstract

Introduction: There is a paucity of comparative real-world evidence for fluticasone-based and beclometasone-based single-inhaler triple therapies in patients with chronic obstructive pulmonary disease (COPD).

Aim: To compare clinical outcomes of fluticasone/umeclidinium/vilanterol (a once-daily dry powder inhaler) and beclometasone/glycopyrrolate/formoterol (a twice-daily metered dose inhaler) in patients with COPD.

Method: This population-based cohort study enrolled patients with COPD who initiated fluticasone/umeclidinium/vilanterol or beclometasone/glycopyrrolate/formoterol from a nationwide Taiwanese database between 2019 and 2022. The effectiveness outcomes included severe and moderate exacerbations and the safety outcomes were pneumonia and composite cardiovascular events. Patients were followed from the first day after cohort entry to the earliest of each outcome occurrence, study treatment discontinuation or

change, death, end of data (2022/12/31), or the 365th day after cohort entry. Cox regression models were employed to estimate hazard ratios (HRs) and corresponding 95% confidence intervals (CIs) for each outcome comparing fluticasone/umeclidinium/vilanterol versus beclometasone/glycopyrrolate/formoterol after high-dimensional propensity score matching.

Results: There were 12,971 initiators included in the high-dimensional propensity score matched cohort. The HR suggested a lower risk of severe and moderate exacerbations (0.80 [95% CI 0.69-0.93] and 0.80 [95% CI 0.74-0.87], respectively) and a marginally non-significant decreased risk of pneumonia (0.85 [95% CI 0.70-1.02]) associated with fluticasone/umeclidinium/vilanterol. However, both treatments showed a similar risk of composite cardiovascular events (0.96 [95% CI 0.69-1.35]). The results were generally consistent across several pre-specified sensitivity and subgroup analyses. Of note, among patients treated for ≥ 90 days (nearly 73% of the initiators), the differences in clinical outcomes of both treatments tended to be minimal, with an HR of 0.98 (95% CI 0.78-1.23) for severe exacerbations, 0.93 (95% CI 0.72-1.20) for pneumonia, and 1.07 (95% CI 0.64-1.77) for composite cardiovascular events. Nevertheless, fluticasone/umeclidinium/vilanterol remained having a lower risk of moderate exacerbations (0.86 [95% CI 0.74-0.98]).

Conclusion: This cohort study conducted in an Asian COPD population suggests that fluticasone/umeclidinium/vilanterol may be a preferred initial treatment option over beclometasone/glycopyrrolate/formoterol. While among patients who are able to maintain their therapies for ≥ 90 days, both treatments may demonstrate more comparable effectiveness and safety profiles.

Keywords: Adrenergic beta-2 receptor agonists; Cohort study; Glucocorticoids; Muscarinic antagonists; Pulmonary disease, chronic obstructive; Single-inhaler triple therapies.

Conflict of interest statement

Declarations. Competing interests: The authors declare no competing interests. Ethics approval: The National Yang-Ming Chiao Tung University Research Ethics Committee approved the study on 2023/05/30 (ID: NYCU112102AE). Informed consent was waived given the retrospective nature of the study and the analysis of anonymous data.

- 45 references

Supplementary info

Grants and fundingExpand

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Can J Respir Ther

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. 2025 Nov 3:61:262-271.

doi: 10.29390/001c.146372. eCollection 2025.

Impact of respiratory muscle training on muscle strength, pulmonary function, symptoms, and quality of life in COPD

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- PMID: 41200708
- PMCID: PMC12588354
- DOI: 10.29390/001c.146372

Abstract

Introduction: Chronic obstructive pulmonary disease (COPD) is characterized by respiratory muscle weakness, hyperinflation, and systemic inflammation, leading to impaired pulmonary function and quality of life. Respiratory muscle training (RMT) may strengthen the inspiratory and expiratory muscles, improve pulmonary function, reduce dyspnea, and enhance functional outcomes. This study assessed the impact of concurrent RMT on respiratory muscle strength, spirometry, dyspnea, and quality of life in patients with COPD.

Materials and methods: This was a single-cohort pre/post-intervention study initially recruiting 43 patients with COPD to participate in an 8-week RMT program using a threshold pressure device. Both inspiratory and expiratory training were performed using a PowerLung device with adjustable resistance. Training consisted of three sets of ten breaths twice daily for each mode, and participants were instructed to increase resistance incrementally when the load became easy. Assessments included spirometry, maximum inspiratory pressure (MIP), maximum expiratory pressure (MEP), COPD Assessment Test (CAT), Medical Research Council (MRC) Breathlessness Scale, and Airways Questionnaire 20 (AQ20). Data were collected at baseline and post-intervention and analyzed using paired *t*-tests and Wilcoxon signed-rank tests, stratified by GOLD category.

Results: Twenty-seven participants completed the study. Statistically significant improvements were observed in MIP (mean increase 14.1 cm H_2O, $p < .001$), MEP (mean increase 20.1 cm H_2O, $p < .001$), CAT (mean decrease 2.92, $p = .020$), and

AQ20 (mean decrease 1.67, $p = .005$). FEV_1 improved modestly but did not reach statistical significance (mean increase 0.0367 L, $p = .064$). The GOLD distribution included eight participants in GOLD 2, 12 in GOLD 3, and seven in GOLD 4. Improvements in MIP and MEP were statistically significant within all GOLD categories. A clinically meaningful increase in FEV_1 (≥ 60 mL) was observed in participants in GOLD 3 and 4 stages, though not statistically significant. Correlations between muscle strength improvements and symptom scores were moderate to strong.

Discussion: Concurrent RMT improves respiratory muscle strength and quality of life in patients with COPD, with the greatest benefits observed in advanced disease stages. Enhanced respiratory muscle efficiency may reduce dyspnea and promote exercise tolerance.

Conclusion: RMT is a promising intervention for COPD management that offers improved respiratory muscle strength and quality of life. Future studies should explore the long-term effects and optimize protocols for broader implementation.

Keywords: chronic lung disease; expiratory muscle strength; inspiratory muscle strength; respiratory muscle testing.

Conflict of interest statement

All authors have completed the ICMJE uniform disclosure form and declare no conflict of interest.

- 33 references

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Editorial

Eur Respir J

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

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- PMID: 41198399

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Eur Respir J

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doi: 10.1183/13993003.01289-2025. Online ahead of print.

Mortality in Severe Asthma - results from the NORDSTAR cohort

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

Affiliations Expand

- PMID: 41198390

- DOI: 10.1183/13993003.01289-2025

Abstract

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

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

Results: We included 11 811 and 118 810 patients with severe and mild-to-moderate asthma, respectively. All-cause mortality was significantly higher in patients with severe asthma compared to patients with mild-to-moderate asthma, both in absolute measures of the cumulative mortality [34% (95% CI: 32, 35) *versus* 20% (19, 20), p<0.001] after 20 years of follow-up and in relative measures [hazard ratio (HR)=1.99 (1.90, 2.09), p<0.001]. The HR of all-cause mortality was attenuated after adjustment for oral corticosteroid (OCS) use [HR=1.30 (95% CI: 1.23, 1.37, p<0.001)] and T2 inflammatory markers [HR=1.34 (1.09, 1.64), p<0.001]. The increased cumulative mortality risk was mainly due to respiratory diseases [12.6% (95% CI:11.7, 13.6) *versus* 3.3% (3.2, 3.5), p<0.001] with cancer [7.5% (95% CI: 6.8, 8.3) *versus* 5.9% (5.7, 6.2), p<0.001] and cardiovascular diseases [4.7% (95% CI: 4.1, 5.3) *versus* 3.8% (3.6, 4.0), p<0.001] also contributing. Though rare, the relative risk of asthma-related deaths was three-fold in severe asthma patients [HR=2.95 (2.08, 4.18), p<0.001].

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

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Guideline

N Z Med J

. 2025 Nov 7;138(1625):59-63.

doi: 10.26635/6965.7149.

New Zealand Chronic Obstructive Pulmonary Disease Guidelines: 2025 update

Robert Hancox [1], Stuart Jones [2], Christina Baggott [3], Sarah Candy [4], Nicola Corna [5], James Fingleton [6], Sandra Hotu [7], Syed Hussain [8], Wendy McRae [2], Murray Moore [9], Betty Poot [10], Jim Reid [11], Sarah Rhodes [12], Justin Travers [13], Joanna Turner [14], Robert Young [15]

Affiliations Expand

- PMID: 41197096

- DOI: 10.26635/6965.7149

Abstract

This update revises the Asthma and Respiratory Foundation NZ's Chronic Obstructive Pulmonary Disease (COPD) Guidelines in line with the latest national and international evidence. The aim is to provide simple, practical, evidence-based recommendations for the diagnosis, assessment and management of COPD in clinical practice in an Aotearoa New Zealand context. The intended users are health professionals responsible for delivering acute and chronic COPD care in community and hospital settings, and those responsible for the training of such health professionals.

Conflict of interest statement

R J Hancox reports grants and speaker fees from AstraZeneca, and grants and speaker fees from GlaxoSmithKline, and honoraria from Pharmac, outside the submitted work. RJH is the medical director of the Asthma and Respiratory Foundation NZ. S L Jones reports receiving honoraria from GlaxoSmithKline and AstraZeneca for speaking at education events and attending advisory meetings, outside the submitted work. C Baggott reports honoraria and personal fees from AstraZeneca and GlaxoSmithKline for giving educational talks and attending advisory meetings, outside the submitted work. CB reports participation on advisory boards for AstraZeneca and GlaxoSmithKline. S Candy reports honoraria for attending advisory meetings for AstraZeneca, outside the submitted work. N Corna reports receiving honorarium from AstraZeneca and GlaxoSmithKline for providing educational talks on airways disease and attending advisory boards, outside the submitted work. NC has also received honoraria from Boehringer Ingelheim as a panellist at a Boehringer Ingelheim–sponsored event, and travel and

accommodation to that event. NC reports fees paid to their organisation and to them for educational presentations from Mobile Health NZ. NC has participated in the GlaxoSmithKline advisory board; is TSANZ Nursing SIG co-convenor; is an Asthma and Respiratory Foundation Scientific Advisory Board member; and is an ALINA steering group member. J Fingleton reports grants, personal fees and nonfinancial support from AstraZeneca; grants from Chiesi; grants, personal fees and non-financial support from GlaxoSmithKline; grants from Sanofi; all outside the submitted work. JF is previous president of Thoracic Society of Australia and New Zealand (New Zealand branch) and NZ Director, TSANZ Ltd; and an Asthma and Respiratory Foundation Scientific Advisory Board member. S Hotu received support from Te Toka Tumai Auckland City Hospital, Health New Zealand – Te Whatu Ora and The University of Auckland for this manuscript. S Hussain reports honoraria from GlaxoSmithKline for giving educational talks on COPD management or attending advisory meetings, and support for attending meetings/travel from AstraZeneca and GlaxoSmithKline, outside the submitted work. B Poot is a member of the Asthma and Respiratory Foundation Scientific Advisory Board and a member of the Respiratory Specialist Advisory Committee PHARMAC. S Rhodes is president of the Thoracic Society of Australia and New Zealand (New Zealand branch). J Turner is a member of the Asthma and Respiratory Foundation Scientific Advisory Board. R Young reports honoraria from GlaxoSmithKline and AstraZeneca for educational talks on COPD management or attending advisory meetings outside the submitted work. RY holds stock in Synergenz BioScience. C Davies, W McRae, M Moore, J Reid, J Travers have no competing interests.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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. 2025 Nov 6.

doi: 10.1007/s43678-025-01050-w. Online ahead of print.

Just the Facts: Management of patients with an acute exacerbation of chronic obstructive pulmonary disease in the emergency department

Mathieu D Saint-Pierre [1], Nicolas Chagnon [2], J Alberto Neder [3]

Affiliations Expand

- PMID: 41196492

- DOI: 10.1007/s43678-025-01050-w

No abstract available

Keywords: Chronic obstructive pulmonary disease; Emergency department; Guidelines; Severe acute exacerbation.

Conflict of interest statement

Declarations. Conflict of interest: On behalf of all authors, the corresponding author declares no conflicts of interest. Ethical approval: Not applicable.

- 10 references

Full text links

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Cite

8

BMJ Open

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. 2025 Nov 4;15(11):e105521.

doi: 10.1136/bmjopen-2025-105521.

Telehealth Education Leveraging Electronic Transitions Of Care for COPD Patients (TELE-TOC): a study protocol for a type II hybrid effectiveness-implementation randomised, pragmatic clinical trial of a pharmacist-led intervention

Deepa Ramadurai [1], Cathryn T Lee [1], Leah Traeger [2], Geoff Pucci [3], Andrea Jackson-Sagredo [2], Sachin Shah [2], Joanna Abraham [4], Vineet M Arora [2], Valerie G Press [5]

Affiliations Expand

- PMID: 41193196

- PMCID: PMC12587980

- DOI: 10.1136/bmjopen-2025-105521

Abstract

Introduction: Transitions of care (TOC) between hospital, ambulatory and home settings for high-risk adults with chronic diseases are complex, costly and often result in poor health outcomes. Suboptimal care transitions lead to medication errors, non-adherence, decreased self-management skills and inadequate follow-up, all of which contribute to readmissions or emergency department visits. The Transitional Care Model aims to address these challenges through patient-centred, in-home interventions. We propose to implement and evaluate TELE-TOC: Telehealth Education Leveraging Electronic Transitions Of Care for Chronic Obstructive Pulmonary Disease (COPD) patients. This study will evaluate the added value of a virtual, pharmacy-based intervention integrated into an existing COPD TOC program within a single healthcare system.

Methods and analysis: Informed by the Proctor Framework implementation, service and health outcome domains, we will conduct a randomised controlled trial comparing the addition of at-home pharmacy team-based virtual visits to the standard of care (ie, our existing COPD TOC programme). Adult patients hospitalised for a COPD exacerbation will be randomised to receive the standard COPD TOC programme alone or the standard programme plus TELE-TOC virtual at-home pharmacy visits. We will use a pragmatic type II hybrid effectiveness-implementation trial. The primary effectiveness outcome is inhaler technique at 30 days postdischarge, and the primary implementation outcome is the proportion of patients receiving the intervention. Intention-to-treat analysis will be applied to all outcomes with χ^2 and logistic regression models adjusting for demographic factors. Treatment effects through 30 days will be assessed with generalised estimating equations and generalised linear mixed models.

Ethics and dissemination: This study, the waiver of consent and the opt-out flyer were approved by the University of Chicago Institutional Review Board (23-0934). Dissemination of the findings is planned for up to 4 years of completion of the study to local, regional and national conferences and peer-reviewed journals.

Trial registration number: NCT05897125.

Keywords: MEDICAL EDUCATION & TRAINING; Patients; Pulmonary Disease, Chronic Obstructive; Telemedicine.

Conflict of interest statement

Competing interests: DR reports a consulting relationship with the Global Allergy and Airways Patient Platform. CTL reports funding from a Pulmonary Fibrosis Foundation scholar award. VGP reports receiving grant funding from the National Institutes of Health (K24HL163408, R01HL146644) and the Agency for Healthcare Research and Quality (R01HS027804). VMA reports receiving grant funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (5R01HD097786), National Institutes of Health (5K23HL148387) and the Agency for Healthcare Research and Quality (R01HS027804). JA reports receiving grant funding from Agency for Healthcare Research and Quality (R01AS027804, 5R01HS029324)

and National Library of Medicine (5R25LM014224). VGP also reports receiving consulting fees for her work with Humana. All other authors have no conflicts to report.

- 53 references
- 4 figures

Supplementary info

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Respir Investig

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. 2025 Nov 4;63(6):1330-1337.

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Exacerbation and cardiopulmonary risk after prompt initiation of single-inhaler budesonide /glycopyrrolate/formoterol fumarate following COPD exacerbations: Insights from MITOS EROS (Japan) study

Koichiro Takahashi [1], Yuri Yoshida [2], Naoyuki Makita [2], Kenichiro Nishida [2], Michihiro Yoshimura [3], Zhao Cheng [4], Aaro Salosensaari [5], Catarina Camarinha [6], Reiko Yamaura [7], Marta Cuntin [8], Michael Pollack [9]

Affiliations Expand

- PMID: 41191980

- DOI: 10.1016/j.resinv.2025.10.015

Abstract

Background: Previous evidence supported prompt initiation of single-inhaler triple therapy in chronic obstructive pulmonary disease (COPD), but data specific to Japan are lacking. This study investigated the association between budesonide/glycopyrrolate/formoterol fumarate (BGF) initiation and subsequent

COPD exacerbations or severe cardiopulmonary events in Japanese patients initiating BGF following previous exacerbations.

Methods: This was an observational cohort study among patients with COPD using IQVIA Integrated claims data. Between BGF launch (September 2019) and March 2023, patients aged ≥40 years initiating BGF following COPD exacerbations (index) were included. Patients were categorized into BGF initiation groups by treatment initiation timing following index exacerbations: prompt (≤30 days), delayed (31-180 days), and very delayed (181-365 days). Multivariable negative binomial regression models evaluated the associations between BGF initiation strategies and subsequent exacerbations or severe cardiopulmonary events.

Results: 3402 eligible patients were included: 840 prompt, 1143 delayed, and 1419 very delayed BGF initiators. The crude COPD exacerbation event rate (95 % confidence interval [CI]) per person-year was 1.66 (1.58-1.74) for prompt, 2.36 (2.30-2.43) for delayed, and 2.60 (2.54-2.66) for very delayed initiators during follow-up. Compared to prompt initiation, delayed (adjusted rate ratio [RR]: 1.25; 95 % CI: 1.13-1.38) and very delayed (adjusted RR: 1.09; 95 % CI: 0.99-1.20) BGF initiation showed an increased risk of COPD exacerbations. No associations were observed between BGF initiation strategies and severe cardiopulmonary events.

Conclusion: Following COPD exacerbations, initiating BGF promptly was associated with reduction in subsequent exacerbations. Patients should receive prompt and proactive treatment to reduce COPD morbidity.

Keywords: Budesonide/glycopyrrolate/formoterol fumarate; Cardiopulmonary event; Chronic obstructive pulmonary disease; Exacerbation; Single-inhaler triple therapy.

Conflict of interest statement

Declaration of competing interest YY, NM, and KN are employees of AstraZeneca K.K.; MP is an employee of AstraZeneca; YY, NM, KN, and MP hold AstraZeneca stock; ZC, AS, CC, and MC are employees of IQVIA Ltd; RY is an employee of IQVIA Solutions Japan G.K.; ZC, AS, CC, RY, and MC serve as consultants to AstraZeneca; KT received honoria from AstraZeneca, Glaxo Smith Kline, Sanofi, and Boehringer Ingelheim; MY received honoria from AstraZeneca K.K., Daiichi Sankyo Co. Ltd., Otsuka Pharmaceutical Co. Ltd., Astellas Pharma Inc., Bayer Yakuhin, Ltd., Mochida Pharmaceutical Co. Ltd., Novartis Pharma K.K., Viatris Pharmaceuticals Japan Inc., and Novo Nordisk Pharma Ltd.; KT received research funding from Glaxo Smith Kline and Boehringer Ingelheim; MY received subsidies or donations from Otsuka Pharmaceutical Co. Ltd. And Mochida Pharmaceutical Co. Ltd.

Respirology

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. 2025 Nov 5.

doi: 10.1002/resp.70155. Online ahead of print.

Early Diagnosis of COPD-How Can we Do Better?

Shawn D Aaron [1]

Affiliations Expand

- PMID: 41190589

- DOI: 10.1002/resp.70155

No abstract available

Keywords: COPD; diagnosis; epidemiology.

- 9 references

Full text links

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Review

Ann Pharmacother

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doi: 10.1177/10600280251382202. Online ahead of print.

Novel Maintenance Therapies for Chronic Obstructive Pulmonary Disorder

Kelly Covert [1], Shelby Brooks [1], Jessica E Burchette [1]

Affiliations Expand

- PMID: 41190453

- DOI: 10.1177/10600280251382202

Abstract

Objective: To summarize the Global Initiative for Chronic Obstructive Lung Disease (GOLD) updates and data for novel therapies/interventions.

Data sources: Articles gathered from MEDLINE, Cochrane Reviews, and PubMed databases. Package inserts for novel agents were utilized. Search terms included chronic obstructive pulmonary disorder (COPD), inhaled corticosteroids (ICS), inhaled long-acting muscarinic antagonists (LAMA), inhaled long-acting beta-2 agonists (LABA), dupilumab, ensifentrine, icenticaftor, and itepekimab.

Study selection and data extraction: English-language primary literature and review articles evaluated. GOLD guidelines from 2001 to 2025 were utilized.

Data synthesis: Six meta-analyses and one randomized controlled trial (RCT) favor initial LAMA/LABA combination over monocomponent agents. Three RCTs note increased ICS efficacy with blood eosinophils >300 cells/μL. One meta-analysis and 8 RCTs address vaccinations, specifically RSV and pneumococcal. Novel medications ensifentrine, dupilumab, and icenticaftor each have 2 RCTs in patients with persistent symptoms despite optimized LAMA/LABA and ICS. Itepekimab is in phase 3 studies. The CAPTURE tool has 2 RCTs validating screening patients with unrecognized COPD.

Relevance to patient care and clinical practice: Identification of notable changes to optimal COPD management, including LABA/LAMA therapy, judicious ICS use, updated vaccine recommendations, and potential roles for ensifentrine and dupilumab.

Conclusion and relevance: Evidence supports LABA/LAMA with nuanced use of ICS. Several novel therapies are approved or are being studied for patients suboptimally controlled. Pharmacists can assist in medication optimization and access; however, patient-specific factors like exacerbation history, blood eosinophils, and COPD endotype must be considered. Implementing early identification screening tools such as CAPTURE should factor into patient assessment.

Keywords: bronchodilators; chronic obstructive pulmonary disease; inhaled corticosteroids; pharmaceutical care; vaccines.

Supplementary info

Publication typesExpand

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Circ Heart Fail

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. 2025 Nov 5:e012833.

doi: 10.1161/CIRCHEARTFAILURE.125.012833. Online ahead of print.

SPIROMICS HF: Rationale, Design, and Reproducibility of Measures

R Graham Barr [1], Joao A C Lima [2], Martin R Prince [1 3], Bharath Ambale Venkatesh [2], Theodore Abraham [4], Prachi P Agarwal [5], Garima Arora [6], Aparna Balasubramanian [2], Igor Barjaktarevic [7], Natalie A Bello [8], David A Bluemke [9], Matthew J Budoff [10], James C Carr [11], Dipayan Chaudhuri [12 13], Christopher B Cooper [7], David Couper [14], J Paul Finn [7], Benjamin H Freed [11], MeiLan K Han [5], Nadia N Hansel [2], Jeffrey J Hsu [7], Dalane W Kitzman [15], Jerry A Krishnan [16], Troy M LaBounty [5], Yoo Jin Lee [4], Jing Liu [4], Steven G Lloyd [6], Michael Markl [11], Monica Mukherjee [2], Lauren Beussink-Nelson [11], Jill Ohar [15], Victor E Ortega [17], Robert Paine 3rd, Stephen P Peters [15], Joyce D Schroeder [18], Wei Shen [1], Daniel Shepshelovich [1], Yifei Sun [1], Jens Vogel-Claussen [19], Karol E Watson [7], J Michael Wells [6], Oliver Wieben [9], Prescott G Woodruff [4], Sanjiv J Shah [11]

Affiliations Expand

- PMID: 41190426

- DOI: 10.1161/CIRCHEARTFAILURE.125.012833

Abstract

Background: Although chronic obstructive pulmonary disease (COPD) and heart failure with preserved ejection fraction often coexist with overlapping clinical features, they are usually studied separately. The SPIROMICS HF (Subpopulations and Intermediate Outcome Measures in COPD and Heart Failure Study) is testing hypotheses that new computed tomography emphysema subtypes are associated with specific cardiovascular phenotypes (eg, *cor pulmonale*, *cor pulmonale parvus*), common airway branch variants are associated with right heart dysfunction, and symptomatic tobacco-exposed people with preserved spirometry have signs of increased left ventricular afterload.

Methods: SPIROMICS is a multicenter observational study of COPD with extensive pulmonary phenotyping of participants with ≥20 pack-years smoking and nonsmoking controls. COPD and COPD severity were defined by standard

spirometric criteria and symptomatic tobacco-exposed people with preserved spirometry by ≥20 pack-years, normal spirometry, and COPD Assessment Test score >10. SPIROMICS HF selected all participants in SPIROMICS visit 5 at major sites. Its comprehensive speckle-tracking echocardiography, which included physiological perturbations of leg raise and low-intensity exercise, was harmonized prospectively with the Multi-Ethnic Study of Atherosclerosis Early Heart Failure and HeartSHARE studies. The cardiopulmonary magnetic resonance imaging protocol with gadolinium administration included myocardial fibrosis sequences, pulmonary angiography, time-resolved 3-dimensional cine magnetic resonance imaging for 4-dimensional flow of venous return, and metronome-paced tachypnea to induce dynamic hyperinflation. Coronary artery calcium was assessed on computed tomography scans. The Kansas City Cardiomyopathy Questionnaire was administered.

Results: Of the final sample of 753 participants, 57% had COPD (15% mild, 27% moderate, and 15% severe), 18% had symptomatic tobacco-exposed people with preserved spirometry, 16% were smoking controls, and 8% were nonsmoking controls. Reproducibility of the main measures from speckle-tracking echocardiography (intraclass correlation coefficient, 0.83-0.99), exercise echocardiography (intraclass correlation coefficient, 0.71-0.99) and magnetic resonance imaging (intraclass correlation coefficient, 0.57-0.99) were good-to-excellent, including in severe COPD.

Conclusions: SPIROMICS HF aims to characterize and understand cardiopulmonary interactions in COPD and COPD-related phenotypes to inform targeted treatments for combined cardiopulmonary failure.

Keywords: fibrosis; heart failure; magnetic resonance imaging; pulmonary disease, chronic obstructive; spirometry.

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Multicenter Study

Respir Res

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. 2025 Nov 4;26(1):306.

doi: 10.1186/s12931-025-03378-4.

Use of long-acting muscarinic antagonists for severe asthma: insights from clinicians in the SHARP network

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Affiliations Expand

- PMID: 41188910
- PMCID: PMC12584430
- DOI: 10.1186/s12931-025-03378-4

Abstract

Background: There is limited real-world evidence on the use and positioning of inhaled long-acting muscarinic antagonists (LAMAs) for treating severe asthma.

Objective: We aimed to assess the differences in clinicians' perspectives on prescribing LAMA for severe asthma across Europe.

Methods: Within the Severe Heterogeneous Asthma Research collaboration, Patient-centred (SHARP) network, we conducted a multi-country survey of 470 respiratory clinicians in 2023-24.

Results: Most participants were pneumonologists (83%). 68% reported using specific criteria for prescribing LAMA for severe asthma, primarily fixed bronchial obstruction (68%), frequent asthma exacerbations (65%), and a history of smoking (53%). Improved quality of life, lung function improvement, and reduction of asthma exacerbations were the three expected outcomes of LAMA treatment that showed the largest agreement across clinicians (85-95%). As compared to non-severe asthma specialists (about 50% of the sample), severe asthma specialists were more likely to report always prescribing LAMA before biologics (54 vs. 41%) and before oral corticosteroids (OCS) (51 vs. 40%). Approximately 90% of participants prioritised tapering or discontinuing OCS before stopping LAMA. Overall, participants in Northern (n = 73) and Western Europe (n = 71) appeared less prone to prescribe LAMA and less confident in their benefits compared to those from Eastern (n = 88) and Southern Europe (n = 238). In particular, most participants from Latvia (91%) and Lithuania (67%) reported that LAMAs are not reimbursed for severe asthma in their countries. Most participants who expressed their opinion favoured triple therapy (n = 236) over single inhaler therapy (n = 91).

Conclusion: Our findings show that barriers and heterogeneous approaches still limit LAMA prescription for severe asthma in Europe, potentially leading to the underuse of this treatment option. Establishing a clear role for LAMA within a precision medicine framework is crucial; this aspect is not yet firmly supported by current international recommendations.

Keywords: Asthma care; Bronchodilators; Clinical guidelines; Controller medication; Geographical variability; Real-world evidence; Severe asthma; Survey-based research.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study involved the participation of clinicians who completed an anonymous questionnaire. Participants were not recruited individually but were reached via emails by national societies or SHARP National Leads, without access to their personal information. Participation was voluntary, and informed consent was explicitly obtained at the beginning of the questionnaire (Additional file 3). Consent for publication: Not applicable. Competing interests: A. Bansal reports receipt of statistical consultancy fees from ERS and SHARP funding partners (GSK, Chiesi, Teva, Sanofi, Novartis); E. Berret reports salary support by ERS and SHARP funding partners (GSK, Chiesi, Teva, Sanofi, Novartis); A. Bossios reports a grant from AstraZeneca, and honoraria and lecture fees from Chiesi, GSK, and AstraZeneca, paid to his institution outside the submitted work; he is head of ERS Assembly 5 (Airway diseases, asthma, COPD, and chronic cough); he is a member of the Steering Committee of the Swedish National Airway Register; C. Porsbjerg reports grants or contracts in the past 36 months and consulting fees by AstraZeneca, GlaxoSmithKline, Novartis, Sanofi, and ALK. S. Principe reports salary support by SANOFI, GSK, and AstraZeneca paid to her institution outside the submitted work; she is a member of the Young Investigator Board of the Netherlands Respiratory Society; F. Schleich received grants from GSK, Chiesi, AstraZeneca, and Sanofi, and consultation fees from GSK, AstraZeneca, Novartis, Chiesi, Teva, Celltrion, and Sanofi; J.K. Sont reports grants or contracts from the Dutch RAPSODI severe asthma registry, SHARP severe asthma registries, and AstraZeneca; he received equipment, materials, or other services from Bosch, Vivatmo me and Albus Health, Albus Home RD. The rest of the authors report no financial relationships with any organisations that might have an interest in the submitted work in the previous 3 years, and no other relationships or activities that could appear to have influenced the submitted work.

- 19 references
- 3 figures

Supplementary info

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14

Meta-Analysis

JAMA Netw Open

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. 2025 Nov 3;8(11):e2541272.

doi: 10.1001/jamanetworkopen.2025.41272.

Outpatient Follow-Up and 30-Day Readmissions: A Systematic Review and Meta-Analysis

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Affiliations Expand

- PMID: 41186947

- PMCID: PMC12587199

- DOI: 10.1001/jamanetworkopen.2025.41272

Abstract

Importance: Outpatient follow-up after discharge has been associated with reduced 30-day readmissions. Since universal follow-up is not feasible, identifying for whom and when outpatient follow-up is most beneficial is essential for optimizing resources and reducing readmissions.

Objective: To quantify the association between outpatient follow-up within 30, 14, and 7 days postdischarge and 30-day all-cause readmissions and assess differences in outcomes by disease, age, and baseline readmission risk.

Data sources: MEDLINE (via PubMed), Embase, and CINAHL were searched for studies published between January 1, 2000, and August 4, 2025, using terms related to outpatient follow-up and readmissions.

Study selection: English-language studies assessing the association between outpatient follow-up within 30 days of hospital discharge and 30-day all-cause readmissions among adult inpatients were included.

Data extraction and synthesis: Following Preferred Reporting Items for Systematic Review and Meta-Analyses guidelines, 2 reviewers independently screened titles and abstracts. Data were extracted by 1 author and verified by another, and quality assessment was done independently by 2 authors.

Main outcomes and measures: The primary outcome was all-cause 30-day readmission. Secondary outcomes included all-cause 30-day emergency

department (ED) discharge and mortality. Pooled effect sizes (relative risk ratios [RRRs]) were estimated by disease and age group using multilevel random-effects models.

Results: Eighty-three studies were included in the review and 76 in the meta-analysis. Outpatient follow-up within 30 days vs no follow-up was associated with a reduction in risk of 30-day all-cause readmission (RRR, 0.68; 95% CI, 0.60-0.75), with less reduction (RRR, 0.78; 95% CI, 0.67-0.89) when restricted to studies with low to moderate risk of bias (ROB). Among patients with heart failure (HF) and acute myocardial infarction (AMI), the RRRs for 30-day follow-up in studies with low to moderate ROB were 0.65 (95% CI, 0.48-0.83) and 0.56 (95% CI, 0.32-0.80), respectively. Subgroup analysis using studies with low to moderate ROB showed benefits of 30-day follow-up only among patients aged 65 years or older with HF (RRR, 0.65; 95% CI, 0.48-0.83), AMI (RRR, 0.56; 95% CI, 0.32-0.80), and other diseases such as stroke and chronic obstructive pulmonary disease (RRR, 0.73; 95% CI, 0.59-0.87). Early follow-up vs no follow-up within 14 and 7 days was associated with a significant reduction in readmissions only among patients aged 65 years or older with HF (14 days: RRR, 0.63 [95% CI, 0.40-0.87]; 7 days: RRR, 0.68 [95% CI, 0.47-0.89]) and AMI (14 days: RRR, 0.57 [95% CI, 0.22-0.91]; 7 days: RRR, 0.63 [95% CI, 0.34-0.92]).

Conclusions and relevance: In this systematic review and meta-analysis, outpatient follow-up within 30 days was associated with reduced 30-day readmissions, but the association varied by patient age and disease type, indicating a need for targeted rather than universal follow-up.

Conflict of interest statement

Conflict of Interest Disclosures: None reported.

Comment in

- doi: 10.1001/jamanetworkopen.2025.41281
- 109 references
- 2 figures

Supplementary info

Publication types, MeSH termsExpand

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Cite

15

Occup Environ Med

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. 2025 Nov 2;82(9):437-443.

doi: 10.1136/oemed-2025-110140.

Occupational exposures to inorganic dust are associated with emphysema: the SCAPIS cohort

Mathias Holm [1], Linus Schioler [2], Anna Dahlman-Hoglund [2], Håkan Tinnerberg [2], Martin Andersson [3], Annelie Behndig [3], Anders Blomberg [3], Kerstin Cederlund [4], Jonas Eriksson Ström [3], Christer Janson [5], Åse Johnsson [6 7], Eva Lindberg [5], Anders Lindén [8 9], Stefan Ljunggren [10], Andrei Malinovschi [11], Anna-Carin Olin [2], Ida Pesonen [12 13], Magnus Sköld [12 13], Magnus Svartengren [14], Hanan Tanash [15], Per Wollmer [16], Xi-Ming Yuan [10], Suneela Zaigham [11], Kjell Torén [2]

Affiliations Expand

- PMID: 41057247

- DOI: 10.1136/oemed-2025-110140

Free article

Abstract

Objectives: There is a lack of knowledge about whether occupational exposures increase the risk of emphysema, especially in never-smokers. Our objective was to determine if occupational exposures are associated with emphysema and impaired diffusing capacity.

Methods: In the Swedish CArdioPulmonary bioImage Study (SCAPIS), persons from the general population aged 50-64 answered a questionnaire and underwent CT of the lung as well as assessment of the diffusing capacity of their lungs for carbon monoxide (DL_{CO}), presented as DL_{CO}<lower limit of normal (LLN). Emphysema was defined as emphysema in any part of the lungs. Occupational exposures were assessed by a job exposure matrix based on longest held job. ORs with 95% CIs were calculated using logistic multivariable models.

Results: In this cross-sectional study (27 370 persons including 13 981 never-smokers), occupational exposure to inorganic dust was associated with emphysema (OR 1.25, 95% CI 1.07 to 1.47), also among never-smokers, (OR 1.46, 95% CI 1.00 to 2.11). There were associations with DL_{CO}<LLN for occupational exposure to inorganic dust and vapour and gases. With all exposures in the same model, inorganic dust was associated with emphysema (OR 1.30, 95% CI 1.08 to 1.57), and vapour and gases were associated with DL_{CO}<LLN (OR 1.17, 95% CI 1.00 to 1.38). In those with emphysema and impaired DL_{CO}, there was an association with inorganic dust (OR 1.65, 95% CI 1.20 to 2.28), also among never-smokers (OR 3.79, 95% CI 1.35 to 10.63).

Conclusions: Occupational exposures to inorganic dust are associated with emphysema. The association is stronger in those with the combination of emphysema and impaired DL_{CO} indicating serious exposure effects in the alveoli.

Keywords: Dust; Epidemiology; Occupational Health.

Conflict of interest statement

Competing interests: None declared.

Supplementary info

MeSH terms, SubstancesExpand

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Cite

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. 2025 Nov 5;40(11):53-59.

doi: 10.7748/ns.2025.e12547. Epub 2025 Sep 22.

Optimising health outcomes in exacerbations of chronic obstructive pulmonary disease

Grace Crolly-Burton [1], Oonagh McCloy [1], Maggie Bennett [1], Stephanie Craig [1]

Affiliations Expand

- **PMID: 40977006**

- **DOI: 10.7748/ns.2025.e12547**

Abstract

The management of chronic conditions requires a careful approach to optimise patients' health outcomes. Exacerbations of chronic obstructive pulmonary disease (COPD) can have debilitating physical effects on patients, negatively affecting their quality of life and causing or worsening psychological distress. Many risk factors

that lead to COPD exacerbations are modifiable, and proactive management can prevent their recurrence. Informed by research and clinical guidelines, this article explains how to optimise patients' long-term health outcomes, enhance symptom management and reduce hospital readmissions. It also discusses the importance of a comprehensive nursing assessment, multidisciplinary team input, self-management strategies and patient education. The article uses a case study to explore the hospital-based management of a patient experiencing a COPD exacerbation.

Keywords: cardiorespiratory; chronic obstructive pulmonary disease; clinical; lung diseases; patient assessment; patients; professional; respiratory.

Conflict of interest statement

None declared

Supplementary info

MeSH termsExpand

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Cite

17

Editorial

Eur Respir J

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. 2025 Nov 6;66(5):2501165.

doi: 10.1183/13993003.01165-2025. Print 2025 Nov.

Absolute benefit measures are essential for guiding therapies in COPD in an era of precision medicine: a viewpoint on "number needed to treat"

Don D Sin [1 2], Ramin Rezaeianzadeh [3], Mohsen Sadatsafavi [4 2 3]

Affiliations Expand

- PMID: 40935585

- DOI: 10.1183/13993003.01165-2025

No abstract available

Conflict of interest statement

Conflict of interest: D.D. Sin reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, GlaxoSmithKline and Boehringer Ingelheim, participation on a data safety monitoring board or advisory board with NHLBI, and is Deputy Chief Editor of the European Respiratory Journal. M. Sadatsafavi and R. Rezaeianzadeh have no potential conflicts of interest to disclose.

Supplementary info

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18

Cancer Prev Res (Phila)

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. 2025 Nov 3;18(11):693-702.

doi: 10.1158/1940-6207.CAPR-24-0544.

Lung Cancer Screening among Adults Older than Medicare's Upper Age Eligibility Criteria

Monica Hernandez [1], Kristin G Maki [2], Hui Zhao [1], Iakovos Toumazis [1], Robert J Volk [1]

Affiliations Expand

- PMID: 40625204

- PMCID: PMC12478563

- DOI: 10.1158/1940-6207.CAPR-24-0544

Free PMC article

Abstract

Implications on the loss of lung cancer screening (LCS) coverage among Medicare recipients aged 77+ years have not been explored. We use a 2022 Behavioral Risk Factor Surveillance System dataset to examine LCS patterns of screen-eligible adults across three age groups: 65 to 70, 71 to 77, and 78 to 79 years. In descriptive analyses, LCS-eligible respondents are compared by screening status across each age category. In regression analyses, we explore various sociodemographic and health-related factors that may help explain age-related differences between these groups. Less than a third of our sample reported LCS in the last year (26.3%). Among eligible respondents, adults aged 78 to 79 years reported the highest LCS rates (32.0%), followed by adults aged 71 to 77 years (28.3%) and 65 to 70 years (24.2%). Respondents aged 78 to 79 years and 65 to 70 years with chronic obstructive pulmonary disease indicated significantly increased LCS odds [OR, 3.37; 95% confidence interval (CI), 1.12-10.11 and OR, 2.91; 95% CI, 1.98-4.27, respectively]. Respondents aged 78 to 79 years with history of a heart attack or kidney disease indicated significantly decreased LCS odds (OR, 0.08; 95% CI, 0.01-0.62 and OR, 0.06; 95% CI, 0.01-0.56, respectively). Respondents aged 71 to 77 years with coronary heart disease indicated a significantly decreased LCS odds (OR, 0.54; 95% CI, 0.30-0.96). Although loss of Centers for Medicare & Medicaid Services coverage for LCS is not associated with lower screening among Behavioral Risk Factor Surveillance System adults aged 78 to 79 years, clinicians should continue to consider the appropriateness of treatment for older LCS-eligible adults with chronic health conditions.

Prevention relevance: Persons who reach the age of 78 years are no longer eligible for LCS coverage from Medicare. This study fills an important knowledge gap by comparing LCS patterns among a nationally representative sample of Medicare-eligible adults aged 78 to 79 years with their younger counterparts aged 65 to 77 years, for whom Centers for Medicare & Medicaid Services covers LCS. See related Spotlight, p. 655.

Supplementary info

MeSH terms, Grants and funding

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

1

Editorial

Scand J Prim Health Care

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. 2025 Nov 5:1-3.

doi: 10.1080/02813432.2025.2581949. Online ahead of print.

Navigating the complexities of multimorbidity in primary health care

Anna Nager [1]

Affiliations Expand

- PMID: 41190926

- DOI: 10.1080/02813432.2025.2581949

Free article

No abstract available

Supplementary info

Publication typesExpand

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Cite

2

COPD

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. 2025 Dec;22(1):2582809.

doi: 10.1080/15412555.2025.2582809. Epub 2025 Nov 4.

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

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

Affiliations Expand

- PMID: 41186419

- DOI: 10.1080/15412555.2025.2582809

Free article

Abstract

Background: Chronic obstructive pulmonary disease (COPD) and cardiovascular-kidney-metabolic (CKM) syndrome are major public health concerns, yet their interrelationship remains under-explored. This study investigates the impact of lung function and COPD on the prevalence and mortality of CKM syndrome using data from the National Health and Nutrition Examination Survey (NHANES) 2007-2012.

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

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

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

Keywords: CKM syndrome; COPD; mortality; multimorbidity.

Review

Cleve Clin J Med

. 2025 Nov 3;92(11):686-692.

doi: 10.3949/ccjm.92a.24094.

Managing obesity in older adults

Shyam Sundaresh [1], Sara Saliba [2], Farah Ziyadeh [3], Yael Mauer [4], Willy Marcos Valencia [5]

Affiliations Expand

- PMID: 41184069

- DOI: 10.3949/ccjm.92a.24094

Free article

Abstract

Obesity should be managed in older adults. However, challenges in this age group include multimorbidity, polypharmacy, limited mobility and sensation, and, in particular, sarcopenia, a natural consequence of aging exacerbated by weight loss. Lifestyle recommendations should emphasize adequate protein intake and exercise, particularly strength training, adapted to mobility. Antiobesity medications and metabolic-bariatric surgery are useful in select patients.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links

4

Obes Facts

. 2025 Nov 3:1-17.

doi: 10.1159/000549374. Online ahead of print.

To What Extent Do Clinical Practice Guidelines for Chronic Diseases Embrace Current Obesity Management Guidance? A Qualitative Content Analysis

Ximena Ramos Salas, Brad Hussey, Susie Birney, Cathy Breen, Michael Crotty, Kajsa Järvholm, Vicki Mooney, Erla Sveinsdóttir, Jack Hussey, Euan Woodward, Volkan Yumuk

- PMID: 41183069

- DOI: 10.1159/000549374

Free article

Abstract

Introduction: Obesity is a chronic, progressive, and recurring disease that contributes significantly to multimorbidity across Europe. Despite the publication of numerous clinical practice guidelines (CPGs) for obesity, many chronic disease guidelines for obesity related diseases such as diabetes, MASLD, heart disease, obstructive sleep apnea do not integrate contemporary understandings of obesity as an adiposity-based disease requiring direct management in its own right. The objective of this qualitative content analysis was to evaluate the extent to which recent chronic disease CPGs align with current evidence-based obesity guidance.

Methods: A working group convened by the European Association for the Study of Obesity reviewed 13 chronic disease CPGs published since 2019. Guidelines were assessed using nine predefined criteria based on leading obesity CPGs. Data were extracted and content analysis was used to identify gaps and opportunities across the chronic disease CPGs.

Results: Three key themes were identified: (1) inconsistent scientific/medical conceptualization of obesity, (2) limited integration of evidence-based obesity management guidance, and (3) minimal inclusion of person-centred care principles. Most guidelines treated obesity as a risk factor, not a disease, and lacked reference to contemporary obesity frameworks or person-first language.

Conclusion: Greater alignment across CPGs is essential to improve obesity care within multimorbidity management. Collaborative, cross-specialty approaches are recommended to harmonize clinical guidance and promote integrated, stigma-free care.

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

1

Editorial

Thorax

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. 2025 Nov 7:thorax-2025-223951.

doi: 10.1136/thorax-2025-223951. Online ahead of print.

Uncomfortably numb: the risk of respiratory depression from neuropathic pain medicines

Anna Meffen [1], Dominick Shaw [2]

Affiliations Expand

- **PMID: 41203399**

- **DOI: 10.1136/thorax-2025-223951**

No abstract available

Keywords: Asthma; COPD Exacerbations; Pneumonia.

Conflict of interest statement

Competing interests: None declared.

Supplementary info

Publication typesExpand

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2

Editorial

Eur Respir J

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. 2025 Nov 6:2502244.

doi: 10.1183/13993003.02244-2025. Online ahead of print.

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 Mg Halpin [1 2], Refiloe Masekela [3 4 2], Claus F Vogelmeier [5], Obianuju B Ozoh [6], Alvaro A Cruz [7], Helen K Reddel [8], Arzu Yorgancıoğlu [9 10], Alvar Agusti [11 10]; 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

Supplementary info

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Cite

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Eur Respir J

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. 2025 Nov 6:2501573.

doi: 10.1183/13993003.01573-2025. Online ahead of print.

Mepolizumab for the treatment of refractory chronic cough in patients with eosinophilic airways disease (MUCOSA): a randomized, double-blind, parallel-group, placebo-controlled trial

Nermin Diab [1], Danica Brister [2], Elena Kum [3], Mustafaa Wahab [3], Wafa Hassan [3], Sue Beaudin [3], Catie Obminski [3], Jennifer Wattie [3], Lesley Wiltshire [3], Karen Howie [3], Kieran Killian [3], Kimberley Holt [4], Roma Sehmi [3], Gail M Gauvreau [3], Jaclyn A Smith [4], Paul M O'Byrne [3 5], Imran Satia [6 4 5]

Affiliations Expand

- PMID: 41198391

- DOI: 10.1183/13993003.01573-2025

Abstract

Objective: Patients presenting with chronic cough often have eosinophilic airways disease that remains refractory despite inhaled or oral corticosteroids. Studies in asthma patients have shown that eosinophils co-localize with airway sensory nerves, and after allergen challenge, are associated with neuronal sensitivity. We evaluated whether mepolizumab, a monoclonal antibody targeting interleukin-5, reduces cough in patients with eosinophilic airways disease.

Methods: We conducted a single-center, randomized, double-blind, parallel-group, placebo-controlled trial of 30 patients with refractory chronic cough and eosinophilic airways disease (sputum eosinophils ≥2%). Patients underwent 1:1 randomization to receive subcutaneous mepolizumab (100 mg) or placebo every 4 weeks for 12 weeks. Change from baseline in 24-hour cough frequency at 14 weeks represented the primary endpoint.

Measurements and main results: Compared to placebo, mepolizumab did not lead to improvements in 24-hour cough frequency at 14 weeks (percent change relative to placebo: +18.0% [95% CI -46.4% to 160.1%]; p=0.99). We found no between-group differences in awake cough frequency, sleep cough frequency, cough severity on the 100-mm visual analogue scale, and quality of life on the Leicester Cough Questionnaire. Mepolizumab significantly reduced blood eosinophils compared to placebo at week 14 (mean difference: -237.7 cells·μL^{-1} [95% CI -328.3 to -147.1]; p<0.0001) and had a significant overall effect in reducing sputum eosinophils over the study (p=0.045). No major adverse events occurred.

Conclusion: In patients with refractory chronic cough and persistent eosinophilia despite inhaled corticosteroid therapy, Mepolizumab did not improve cough despite reducing blood and sputum eosinophils. Targeting eosinophils might not impact cough in these patients and alternative mechanisms are likely driving their cough.Clinical trial registered with www.

Clinicaltrials: gov (NCT04765722).

Supplementary info

Associated dataExpand

Full text links

Cite

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Eur Respir J

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. 2025 Nov 6:2501289.

doi: 10.1183/13993003.01289-2025. Online ahead of print.

Mortality in Severe Asthma - results from the NORDSTAR cohort

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

Affiliations Expand

- PMID: 41198390

- DOI: 10.1183/13993003.01289-2025

Abstract

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

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

Results: We included 11 811 and 118 810 patients with severe and mild-to-moderate asthma, respectively. All-cause mortality was significantly higher in patients with severe asthma compared to patients with mild-to-moderate asthma, both in absolute measures of the cumulative mortality [34% (95% CI: 32, 35) *versus* 20% (19, 20),

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

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

Full text links

Proceed to details

Cite

5

J Allergy Clin Immunol Pract

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. 2025 Nov 4:S2213-2198(25)01025-6.

doi: 10.1016/j.jaip.2025.10.038. Online ahead of print.

Adherence to Inhaled Corticosteroids and Clinical Outcomes Following a Year of Tezepelumab Therapy for Severe Asthma

Grainne d'Ancona [1], Faizan Haris [2], Jessica Gates [2], Niall Stewart-Kelcher [3], Linda Green [4], Jodie Lam [4], Mariana Fernandes [4], Louise Thomson [4], Cris Roxas [4], Zijing Yang [5], Jaideep Dhariwal [4], Alexandra M Nanzer [2], David J Jackson [2]

Affiliations Expand

- PMID: 41198022

- DOI: 10.1016/j.jaip.2025.10.038

Abstract

Background: High-dose inhaled corticosteroid (ICS) are associated with adverse effects. Reductions in ICS use whilst treated with anti-IL5/5R therapies can lead to reduced clinical effectiveness in some patients.

Objective: This study explored whether the broader anti-T2 effects of the anti-TSLP therapy tezepelumab permitted a reduction in ICS use without deleterious clinical consequences.

Methods: Adherence to ICS/LABA in the 12 months before and 12 months after commencing tezepelumab for severe asthma was calculated using medicines possession ratio (MPR) methodology and classified as poor (<0.5), suboptimal (0.51-0.74) and good (≥0.75). Clinical outcomes including exacerbation rate, ACQ-6 score, FEV1 and the ability to achieve clinical remission, as well as T2 biomarker levels at 1 year were compared across ICS adherence sub-groups.

Results: 152 adults with severe asthma who commenced tezepelumab were included. At the end of 12 months treatment, there was a significant reduction in the median MPR from 1.0 (0.83-1.08) at baseline to 0.83 (0.58-1), p=0.009. ICS adherence was good in 69.1%, suboptimal in 12.5% and poor in 18.4% of patients. At 1 year, improvements in all clinical outcome measures as well as rates of biological remission were similar across ICS adherence groups (all p>0.05).

Conclusion: A fall in ICS adherence following initiation of tezepelumab for severe asthma was not associated with evidence of reduced clinical effectiveness of tezepelumab, including the ability to achieve remission. Similar rates of biological remission further suggests that the broad anti-T2 effect of anti-TSLP may be sufficient to permit a safe reduction in ICS exposure.

Keywords: Adherence; Asthma; Biologic; Biological; Inhaled Corticosteroid; TSLP; Tezepelumab.

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Review

J Allergy Clin Immunol

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. 2025 Nov 4:S0091-6749(25)01113-3.

doi: 10.1016/j.jaci.2025.10.023. Online ahead of print.

A Promise Fulfilled: Updates on RSV Vaccines and Monoclonal Antibodies

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Affiliations Expand

- PMID: 41197777

- DOI: 10.1016/j.jaci.2025.10.023

Abstract

Respiratory syncytial virus (RSV) is a leading cause of lower respiratory tract infection and hospitalization in infants, older adults, and immunocompromised individuals. In children, early-life RSV infection has been associated with increased risk of recurrent wheezing and asthma. In adults ≥60 years, RSV contributes significantly to respiratory morbidity, comparable to influenza in seasonal burden. Recent advancements have led to the licensure of three RSV vaccines for older adults and pregnant people. Immunogenicity data shows a durable antibody response for more than one respiratory season. Additionally, two new, potent long-acting monoclonal antibodies are now recommended for all infants entering their first RSV season. These preventive tools have expanded public health strategies to reduce RSV-associated illness across age groups. Maternal vaccination and monoclonal antibodies have reduced medically attended RSV illness in infants by more than 50%. Overall, these tools represent major progress in RSV prevention. Areas in need of further investigation include continued post-licensure monitoring for safety and effectiveness, evaluation of the overall durability of protection, considerations of the need for repeat dosing, and monitoring for broader population-level benefits, including the possibility of reduced asthma risk, and expansion of use into high-risk and immunocompromised populations.

Keywords: Asthma and Wheezing; Immunocompromised Population; Maternal Vaccination; Monoclonal Antibodies; RSV; Respiratory Syncytial Virus; Vaccination.

Supplementary info

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7

Review

Respir Res

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. 2025 Nov 5;26(1):310.

doi: 10.1186/s12931-025-03388-2.

Crosstalk between airway epithelial cells and mast cells in airway inflammation

Junfan Wang [# 1], Yuting Liang [# 2 3], Liting Wu [1], Ting Xu [1], Wenfang Zhuang [4], Jia Li [5]

Affiliations Expand

- **PMID: 41194143**

- **PMCID: PMC12587634**

- **DOI: 10.1186/s12931-025-03388-2**

Abstract

Airway epithelial cells (AECs) and mast cells (MCs) are pivotal initiators and amplifiers of airway inflammation, orchestrating a dynamic crosstalk that drives pathological hyperreactivity in respiratory diseases. AECs, as the frontline barrier, detect pathogens and allergens, releasing cytokines (e.g., IL-33, TSLP) and chemokines to activate neighboring MCs. Conversely, MC-derived proteases (tryptase, chymase) and mediators (histamine, leukotrienes) disrupt epithelial junctions (e.g., E-cadherin, occludin), exacerbating barrier dysfunction and perpetuating cycles of inflammation. This reciprocal interaction establishes a molecular hub for 'hyperinflammation' in asthma, chronic obstructive pulmonary disease (COPD), and viral infections, while also contributing to pathological processes such as airway remodeling, fibrosis, and epithelial-mesenchymal transition (EMT). Therefore, elucidating the synergistic mechanisms underlying AEC-MC crosstalk is critically important. This review synthesizes emerging insights into AEC-MC crosstalk, emphasizing context-specific mechanisms in viral, allergic, and chronic inflammatory settings, and provide suggestions for future research directions.

Keywords: Airway epithelial cells; Airway inflammation; Crosstalk; Mast cells.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: Not applicable. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- 101 references
- 3 figures

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

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8

Review

J Investig Allergol Clin Immunol

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. 2025 Nov 5:0.

doi: 10.18176/jiaci.1123. Online ahead of print.

A Critical Review of Occupational Asthma in the 21st Century Work Environment

C A Galván [1 2], R Durán [3], S Quirce [4]

Affiliations Expand

- **PMID: 41191020**

- **DOI: 10.18176/jiaci.1123**

Abstract

Background and objectives: Occupational asthma (OA) is an increasingly relevant respiratory disease in modern workplaces. Epidemiological evidence highlights its considerable prevalence among the global working population, with recent increases following an initial decline in the early 21st century. To critically review the pathophysiological mechanisms, risk factors, clinical presentations, and emerging challenges associated with OA, focusing on novel exposures, biomarker

development, and translation of scientific findings into preventive and clinical practice.

Methods: A literature review was conducted through a bibliographic search in PubMed (MEDLINE) and Web of Science. Articles were selected and analyzed using the Rayyan collaborative platform. Empirical studies on prevalence, risk factors, diagnosis, and management of OA were included.

Results: OA is primarily categorized as sensitizer- or irritant-induced, each exhibiting unique molecular pathways and clinical courses. Transcriptomic research has identified specific microRNA profiles as innovative biomarkers with significant diagnostic capacity. Studies document risks in traditionally non-high-risk sectors, such as offices and educational environments. Factors such as work chronobiology (night shifts), sex, and socioeconomic status influence the development and prognosis of OA, potentially leading to loss of productivity and employment.

Conclusion: OA is a significant challenge in occupational health, with complex epidemiological patterns. While advances in molecular characterization and identification of emerging risk factors have improved our understanding of the condition, diagnostic and management challenges persist. Future research should focus on developing specific biomarkers and accessible diagnostic tools for primary care, along with evidence-based preventive strategies for emerging labor sectors.

Keywords: Occupational asthma. Occupational exposure. Respiratory hypersensitivity. Biomarkers. MicroRNAs. Occupational diseases. Risk factors. Environmental monitoring. Chronobiological disorders..

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Multicenter Study

Respir Res

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. 2025 Nov 4;26(1):306.

doi: 10.1186/s12931-025-03378-4.

Use of long-acting muscarinic antagonists for severe asthma: insights from clinicians in the SHARP network

Alessandro Marcon [1], Luigi Martinelli [2], Aruna T Bansal [3], Emmanuelle Berret [4], Apostolos Bossios [5 6 7], Pierpaolo Marchetti [2], Celeste Porsbjerg [8], Stefania Principe [9], Florence Schleich [10 11], Svetlana Sergejeva [12], Jacob K Sont [13], Marco Caminati [14]

Affiliations Expand

- PMID: 41188910
- PMCID: PMC12584430
- DOI: 10.1186/s12931-025-03378-4

Abstract

Background: There is limited real-world evidence on the use and positioning of inhaled long-acting muscarinic antagonists (LAMAs) for treating severe asthma.

Objective: We aimed to assess the differences in clinicians' perspectives on prescribing LAMA for severe asthma across Europe.

Methods: Within the Severe Heterogeneous Asthma Research collaboration, Patient-centred (SHARP) network, we conducted a multi-country survey of 470 respiratory clinicians in 2023-24.

Results: Most participants were pneumonologists (83%). 68% reported using specific criteria for prescribing LAMA for severe asthma, primarily fixed bronchial obstruction (68%), frequent asthma exacerbations (65%), and a history of smoking (53%). Improved quality of life, lung function improvement, and reduction of asthma exacerbations were the three expected outcomes of LAMA treatment that showed the largest agreement across clinicians (85-95%). As compared to non-severe asthma specialists (about 50% of the sample), severe asthma specialists were more likely to report always prescribing LAMA before biologics (54 vs. 41%) and before oral corticosteroids (OCS) (51 vs. 40%). Approximately 90% of participants prioritised tapering or discontinuing OCS before stopping LAMA. Overall, participants in Northern (n = 73) and Western Europe (n = 71) appeared less prone to prescribe LAMA and less confident in their benefits compared to those from Eastern (n = 88) and Southern Europe (n = 238). In particular, most participants from Latvia (91%) and Lithuania (67%) reported that LAMAs are not reimbursed for severe asthma in their countries. Most participants who expressed their opinion favoured triple therapy (n = 236) over single inhaler therapy (n = 91).

Conclusion: Our findings show that barriers and heterogeneous approaches still limit LAMA prescription for severe asthma in Europe, potentially leading to the underuse of this treatment option. Establishing a clear role for LAMA within a precision medicine framework is crucial; this aspect is not yet firmly supported by current international recommendations.

Keywords: Asthma care; Bronchodilators; Clinical guidelines; Controller medication; Geographical variability; Real-world evidence; Severe asthma; Survey-based research.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study involved the participation of clinicians who completed an anonymous questionnaire. Participants were not recruited individually but were reached via emails by national societies or SHARP National Leads, without access to their personal information. Participation was voluntary, and informed consent was explicitly obtained at the beginning of the questionnaire (Additional file 3). Consent for publication: Not applicable. Competing interests: A. Bansal reports receipt of statistical consultancy fees from ERS and SHARP funding partners (GSK, Chiesi, Teva, Sanofi, Novartis); E. Berret reports salary support by ERS and SHARP funding partners (GSK, Chiesi, Teva, Sanofi, Novartis); A. Bossios reports a grant from AstraZeneca, and honoraria and lecture fees from Chiesi, GSK, and AstraZeneca, paid to his institution outside the submitted work; he is head of ERS Assembly 5 (Airway diseases, asthma, COPD, and chronic cough); he is a member of the Steering Committee of the Swedish National Airway Register; C. Porsbjerg reports grants or contracts in the past 36 months and consulting fees by AstraZeneca, GlaxoSmithKline, Novartis, Sanofi, and ALK. S. Principe reports salary support by SANOFI, GSK, and AstraZeneca paid to her institution outside the submitted work; she is a member of the Young Investigator Board of the Netherlands Respiratory Society; F. Schleich received grants from GSK, Chiesi, AstraZeneca, and Sanofi, and consultation fees from GSK, AstraZeneca, Novartis, Chiesi, Teva, Celltrion, and Sanofi; J.K. Sont reports grants or contracts from the Dutch RAPSODI severe asthma registry, SHARP severe asthma registries, and AstraZeneca; he received equipment, materials, or other services from Bosch, Vivatmo me and Albus Health, Albus Home RD. The rest of the authors report no financial relationships with any organisations that might have an interest in the submitted work in the previous 3 years, and no other relationships or activities that could appear to have influenced the submitted work.

- **19 references**
- **3 figures**

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BMJ Open Respir Res

. 2025 Nov 4;12(1):e003226.

doi: 10.1136/bmjresp-2025-003226.

Interaction between genetic predisposition to successful ageing and chronic air pollution on lung disease in elderly women: results of the German SALIA cohort

Sara Kress [#1], Michael Lau [#1,2], Claudia Wigmann [1], Michael J Abramson [3], Holger Schwender [2], Tamara Schikowski [4,5]

Affiliations Expand

- PMID: 41188008
- PMCID: PMC12587969
- DOI: 10.1136/bmjresp-2025-003226

Abstract

Objective: To investigate the interplay between the genetic predisposition to successful ageing and air pollution on lung disease in healthy aged German women under the hypothesis that ageing and lung diseases share mechanisms of oxidative stress and inflammation that can be regulated by genetic predisposition and environmental factors.

Design: German Study on the influence of Air pollution on Lung function, Inflammation and Aging prospective cohort between baseline (1985-1994) and follow-up (2007-2010).

Setting: Urban Ruhr area and the adjacent rural Münsterland in Germany.

Participants: At baseline, 4874 women aged 55 years living between 1985 and 1994 in the setting and at follow-up examination, 834 of them participated.

Main outcome measures: Chronic lung disease was defined as any of asthma, chronic bronchitis, cough (with sputum) or chronic obstructive pulmonary disease. Chronic individual exposures to nitrogen dioxide (NO_2), nitrogen oxides, particulate matter with median aerodynamic diameters <2.5 ($PM_{2.5}$), PM_{10}, PM_{coarse} and $PM_{2.5\ absorbance}$ based on European Study of Cohorts for Air Pollution Effects land-use regression models were used. Main and interaction effects between the genetic risk score (77 single-nucleotide polymorphisms (SNPs) related to successful ageing) and air pollutant exposures were investigated using adjusted logistic regression models.

Results: In 560 women (67-80 years), chronic lung disease was present in 156. Higher exposure to air pollution was associated with increased odds by up to 43% per IQR-increase in NO_2 (IQR=11.6 µg/m³, 95% CI 1.15 to 1.77). The genetic make-up reduced the negative impact of air pollution (gene-environment interaction with NO_2: OR=0.66, 95% CI 0.45 to 0.96), while a healthy lifestyle further strengthens this association.

Conclusions: In elderly women, genetic predisposition based on successful ageing SNPs likely reduces the negative impact of air pollution on chronic lung disease, while a healthy lifestyle further strengthens this association.

Keywords: Machine Learning; Pulmonary Disease, Chronic Obstructive.

Conflict of interest statement

Competing interests: MJA holds investigator-initiated grants for unrelated research from Pfizer, Boehringer-Ingelheim, Sanofi and GSK. He has also undertaken an unrelated consultancy for Sanofi, received speaker's fees from GSK and The Limbic. All other authors declare they have no conflicts of interest related to this work to disclose. They declare they have no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous 3 years, no other relationships or activities that could appear to have influenced the submitted work.

- **41 references**
- **4 figures**

Supplementary info

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Multicenter Study

BMC Med

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. 2025 Nov 3;23(1):602.

doi: 10.1186/s12916-025-04426-y.

Vaccine effectiveness against influenza A in older adults and the effect of chronic conditions: results from the I-MOVE and VEBIS multicentre European hospital case-control studies, 2015/16-2023/24

Angela Mary Catherine Rose [1], Nathalie Nicolay [2], Clara Mazagatos [3], Iván Martínez-Baz [4], Odile Launay [5 6], Laurane De Mot [7], Antonino Bella [8], Mihaela Lazar [9], Ausenda Machado [10], Monika Kuliešė [11], Stephen Abela [12], Vesna Višekruna Vučina [13], Rianne van Gageldonk-Lafeber [14], Silvia Bino [15], Ralf Dürrwald [16], Iwona Paradowska-Stankiewicz [17], Judit Krisztina Horváth [18], Róisín Duffy [19], Petr Husa [20], Jim McMenamin [21], Francisco Pozo [22], Jennifer Howard [23], Miriam Latorre-Millán [24], Jesús Castilla [4], Liem Binh Luong Nguyen [5], Nicolas Dauby [25], Flavia Riccardo [8], Alina Ivanciuc [9], Verónica Gomez [10], Ligita Jančorienė [26], Gerd Xuereb [12 27], Goranka Petrović [13], Sierk Marbus [14], Adela Vasili [15], Kristin Tolksdorf [28], Joanna Bogusz [17], Beatrix Oroszi [18], Lisa Domegan [19], Lenka Součková [20], Kimberley Marsh [21], Sabrina Bacci [2], Esther Kissling [23]; I-MOVE & VEBIS Hospital Network teams

Collaborators, Affiliations Expand

- PMID: 41185010

- PMCID: PMC12581461

- DOI: 10.1186/s12916-025-04426-y

Abstract

Background: The Influenza - Monitoring Vaccine Effectiveness in Europe (I-MOVE/I-MOVE+) and Vaccine Effectiveness, Burden and Impact Studies (VEBIS) hospital networks have conducted seasonal multicentre, test-negative, case-control studies in Europe to measure influenza vaccine effectiveness (IVE) since 2015/16. We measured the effect of chronic conditions on VE of influenza A subtypes among older adults (≥ 65 years) using pooled-season data (2015/16-2023/24).

Methods: Hospital teams swabbed patients with severe acute respiratory infection (SARI) within 7 days of symptom onset. Cases were RT-PCR positive for influenza A(H1N1)pdm09 or A(H3N2); controls negative for any influenza virus. We calculated overall pooled-season IVE against influenza A(H1N1)pdm09 and A(H3N2), adjusted for study site, sex, age and onset date; and stratified by number of and by each chronic condition (diabetes, heart disease, lung disease/asthma, immunosuppression, kidney disease, liver disease, cancer, obesity). We investigated interaction between vaccination and each condition.

Results: We included 1805 A(H1N1)pdm09 cases with 16,329 controls; 2590 A(H3N2) cases with 14,920 controls, from 13 study sites (12 countries). Over all seasons, 63-67% cases and 70% controls had ≥ 2 chronic conditions. Against A(H1N1)pdm09, pooled-season IVE was 37% (95%CI: 29-44) overall; 49% (95%CI: 9-72), 30% (95%CI:

12-44) and 38% (95%CI: 29-46) in those with 0, 1, ≥ 2 chronic conditions. Most IVE point estimates were 34-45%, apart from immunosuppression (-7%), kidney disease (17%) and liver disease (54%), but 95% CIs overlapped. Significant interaction was observed for kidney disease (p = 0.02) and immunosuppression (p = 0.01). Against A(H3N2), pooled-season IVE was 17% (95%CI: 8-25) overall; 15% (95%CI: -26-42), 11% (95%CI: -8-27) and 18% (95%CI: 7-28) in those with 0, 1, ≥ 2 chronic conditions. Here, IVE point estimates ranged 13-25%, apart from immunosuppression (5%), kidney disease (6%) and liver disease (31%), although 95% CIs overlapped. There were no significant interactions.

Conclusions: Pooled-season results suggest low-moderate VE against influenza A subtypes among older SARI patients; higher against A(H1N1)pdm09 than A(H3N2), with little evidence of chronic condition modifying effect, apart from kidney disease and immunosuppression. We stress the importance of developing improved influenza vaccines for specific populations, and encourage further research into the effect of chronic conditions on IVE in older adults.

Keywords: Chronic conditions; Europe; Hospital; Influenza; Vaccine effectiveness.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The planning, conduct and reporting of the studies was in line with the Declaration of Helsinki. Official ethical approval was not required if studies were classified as being part of routine care/surveillance (Ireland, Italy, Malta, later seasons in Spain). In Belgium and Germany, VE is included in SARI surveillance. For Belgium, the study protocol was approved by the central Ethical Committee (CHU ST Pierre, Bruxelles) and each participating hospital's local ethical committees in 2011 (AK/12-02-11/4111), and updated from 2014 (UZ-Brussel en VUB B.U.N. 143201215671). The German SARI surveillance was approved by the Charité-Universitätsmedizin Berlin Ethical Board (Reference EA2/218/19). Other study sites obtained local ethical approval from a national review board (Croatia: approved by the Ethics committee of the Croatian Institute of Public Health on 25 September 2015 (3-year approval), 21 November 2018, 7 November 2019, 26 November 2020, 24 May 2021, 26 January 2022, 20 June 2022 and 3 July 2023, Number 80-2661/1-15; Klasa: 030-02/18-01/1, Ur. broj 381-10-18-2; Klasa: 030-02/18-01/1, Ur.broj 381-15-19-4; Klasa:030-02/20-01/3, Ur.broj 381-15-20-2; Klasa:030-02/21-01/1, Ur.broj:381-15-21-7; Klasa:030-02/21-01/1, Ur.broj:381-15-22-14, Klasa: 030-02/22-01/2, Ur.broj:381-15-22-2, Klasa:030-02/23-01/3, Ur.broj: 117-15-23-3; Hungary: approved by the National Scientific and Ethical Committee (ETT/TUKEB 56025-3/2014/EKU; ETT/TUKEB 44088-3/2015/EKU; IV/1885-5/2021/EKU); Lithuania: approved by Kaunas Regional Biomedical Research Ethics Committee for influenza seasons 2015-2020 (Nos P1-158200-04-476-138/2012, P2-158200-04-476-138/2012, P3-158200-04-476-138/2012, P4-158200-04-476-138/2012, P5-158200-04-476-138/2012, P6-158200-04-476-138/2012, P7-158200-04-476-138/2012), and approved by Lithuanian Bioethics Committee on 03 July 2020, and later permission extended for the study period for seasons 2020-2024, No. L-20-3/1-2; Navarre: approved by the Navarre Ethical Committee for Medical Research, Pyto2015/95 and EO2021/21; The Netherlands: the Dutch Medical Research Involving Human Subjects Act (Dutch acronym: WMO) did not apply, because only fully anonymous data were used and there were no interventions other than routine clinical care. A waiver for full medical ethical review was obtained from the Medical

Ethical Committee of the University Medical Center Utrecht, reference No. WAG/om/15/034147; Portugal: approvals and/or amendments 22 May 2015, 28 September 2026, 12 December 2018, 28 April 2020, 19 January 2021, 7 June 2022 by the Ethics Committee of Instituto Nacional de Saúde Dr Ricardo Jorge, no registration number given; Romania: approved by the Ethics Committee of the Ministerul Apărării Naionale Institutul Naional de Cercetare pentru Dezvoltare Medico-Militară "Cantacuzino" for the period 2022–2023, No. CE199/2022; Spanish local sites for the I-MOVE periods (Donostia University Hospital, Virgen de las Nieves University Hospital from Granada, and Miguel Servet University Hospital from Zaragoza) obtained their ethical approvals for each season or protocol, from different ethic committees – Euskadi: PI2015104, 14 September 2015, Aragón: PI15/0123, 15 April 2015, with amendment 28 September 2016, Osakidetza: 20 November 2018, Aragón: PI19/430 01 April 2020, Andalucía: code f12f8377d78c34a25d6935eff535cd26715e2b8c, 15 April 2020). Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- **52 references**
- **2 figures**

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

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Observational Study

J Health Popul Nutr

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. 2025 Nov 3;44(1):387.

doi: 10.1186/s41043-025-01129-1.

Associations of the Charlson comorbidity index with asthma and mortality (NHANES 2007-2018): a cross-sectional study

Jia Zhang [1], Huan Chen [1], Jin Liu [1], Yuqian Chen [1], Yuanjie Qiu [1], Huizhong Hu [1], Yihan Meng [1], Qianqian Zhang [2], Manxiang Li [3]

Affiliations Expand

- **PMID: 41184973**
- **PMCID: PMC12581444**
- **DOI: 10.1186/s41043-025-01129-1**

Abstract

Background: Patients with asthma often suffer from multiple comorbid conditions, which can exacerbate disease severity and elevate the risk of mortality. This study aims to investigate the relationship between the Charlson Comorbidity Index (CCI) and asthma, as well as their combined impact on mortality.

Methods: This is an observational cross-sectional study based on the NHANES database conducted from 2007 to 2018. The study included a total of 26,002 adult participants. Logistic regression was performed to assess the relationship between the CCI and asthma. Survival analysis, including Kaplan-Meier analysis and Cox regression, was conducted to investigate the combined effect of the CCI and asthma on all-cause mortality. Subgroup analyses were performed to confirm the reliability of the outcomes.

Results: After adjusting for sex, age, race, body mass index, and other relevant covariates, our analysis showed an association between CCI and asthma (OR, 1.120; 95% CI, 1.059-1.186). Moreover, a higher CCI score was closely associated with increased mortality risk (HR, 1.143; 95% CI, 1.109-1.179) after adjustment of confounding factors. The risk of mortality was substantially higher for individuals with both asthma and a CCI score of ≥ 2 compared to those with no asthma and a CCI score of 0 (HR, 1.853; 95% CI, 1.440-2.383). Subgroup analyses further confirmed the trend that higher CCI levels are associated with poorer survival outcomes across multiple subgroups.

Conclusion: The study indicates an association between the CCI and the risk of asthma, as well as their combined impact on elevated all-cause mortality. Since a high CCI score is associated with an increased risk of asthma and mortality, further studies are warranted to explore the causal relationship between these factors.

Keywords: Asthma; CCI; Comorbidity; Mortality; NHANES.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The NHANES protocols were approved by the Institutional Review Boards of the Centers for Disease Control and Prevention and the National Center for Health Statistics. The study conducted in accordance with the Declaration of Helsinki. Our analysis uses publicly available NHANES data and does not require additional institutional review board review. All participants provided informed consent to participate. Consent for

publication: Not applicable. Competing interests: The authors declare no competing interests.

- 52 references
- 3 figures

Supplementary info

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Ann Med

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. 2025 Dec;57(1):2581812.

doi: 10.1080/07853890.2025.2581812. Epub 2025 Nov 3.

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

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

Affiliations Expand

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

Abstract

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

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

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

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

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

Conflict of interest statement

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

- 50 references
- 2 figures

Supplementary info

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14

J Asthma

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. 2025 Nov 5:1-11.

doi: 10.1080/02770903.2025.2577639. Online ahead of print.

Neutrophilic-dominant phenotype during exacerbations predicts adverse hospital outcomes in asthma-bronchiectasis overlap syndrome

Lishan Yuan [1], Lei Wang [1], Li Zhang [1], Ying Liu [1], Lei Liu [1], Hongping Zhang [1], Yilai Li [1], Min Feng [2 3], Chongyang Zhao [4], Qin Wang [4], Lingyun Lu [1], Gang Wang [5], Shuwen Zhang [6], Yulai Yuan [7], Deying Kang [4 8], Xin Zhang [1]

Affiliations Expand

- PMID: 41178529

- DOI: 10.1080/02770903.2025.2577639

Abstract

Background: Exacerbations of asthma-bronchiectasis overlap syndrome (ABOS) are clinically heterogeneous, with poorly defined inflammatory phenotypes and their links to outcomes.

Objective: To identify phenotypes in ABOS exacerbations and their associations with in-hospital outcomes.

Methods: In this prospective study, 343 patients with ABOS exacerbation were clustered using multidimensional data; findings were validated in 147 independent patients. Associations between phenotypes and outcomes (Intensive Care Unit [ICU] admission, invasive mechanical ventilation [IMV], mortality) were analyzed *via* multivariable regression.

Results: Three phenotypes were identified: female-paucigranulocytic (Cluster T1), young male-eosinophilic (Cluster T2), and neutrophilic-lymphopenic (Cluster T3). Cluster T3 had the highest risks of ICU admission (adjusted relative risk [RR_{adj}] = 7.84, 95% CI: 2.21-27.78), IMV (RR_{adj}=7.84, 95% CI: 2.21-27.78), and mortality (RR_{adj}=6.86, 95% CI: 2.33-37.67). Neutrophilia showed a dose-dependent association with adverse outcomes (P_{trend}<0.001), with elevated levels independently predicting composite outcomes (RR_{adj}=2.06, 95% CI: 1.42-3.03).

Conclusions: ABOS exacerbations exhibit distinct inflammatory phenotypes. The neutrophilic-lymphopenic phenotype strongly predicts in-hospital adverse outcomes, highlighting its potential for acute risk stratification in hospitalized patients.

Keywords: asthma-bronchiectasis overlap syndrome; clinical outcomes; phenotype; precision medicine.

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15

Eur Respir J

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. 2025 Nov 6;66(5):2501229.

doi: 10.1183/13993003.01229-2025. Print 2025 Nov.

Fractional exhaled nitric oxide and the response to prednisolone for asthma attacks in patients treated with anti-IL5/5Rα therapy: a prospective observational study

Imran Howell [1], Mahdi Mahdi [2], Hafiz R Mahmood [2], Laura Bermejo-Sanchez [2], Catherine Borg [2], Sanjay Ramakrishnan [3], James Melhorn [2], Gabriel Lavoie [4], Nayia Petousi [2], Timothy S C Hinks [2], Mona Bafadhel [5], Ian D Pavord [2]

Affiliations Expand

- PMID: 41067871
- PMCID: PMC12591134
- DOI: 10.1183/13993003.01229-2025

Abstract

***F*ENO testing at attack can identify the patients on anti-IL5/IL5Rα biologics who have the most lung function and symptom benefits from prednisolone https://bit.ly/3KhMB68**

Conflict of interest statement

Conflict of interest: I. Howell reports support for the present study from the National Institute for Health and Care Research Oxford Biomedical Research Centre, grants from the BMA Foundation, support for attending meetings from GSK, and a leadership role on the British Thoracic Society science and research committee. S. Ramakrishnan reports support for the present study from the Charlies Foundation for Research and the National Institute for Health and Care Research Clinical Research Network, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Chiesi, Sanofi, Boehringer Ingelheim and GlaxoSmithKline, and support for attending meetings from

AstraZeneca and Boehringer Ingelheim. T.S.C. Hinks reports support for the present study from a Wellcome Trust Fellowship (211050/Z/18/z) and grants from Pfizer. M. Bafadhel reports support for the present study from the National Institute for Health and Care Research (NIHR) under Research Professor award NIHR304263, grants from AstraZeneca, Asthma+Lung UK, Roche, GlaxoSmithKline and the National Institute for Health and Care Research (NIHR), payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Roche and Sanofi, support for attending meetings from AstraZeneca and Chiesi, participation on a data safety monitoring board or advisory board with AlbusHealth and Areteia, and leadership role on the British Thoracic Society science and research committee. I.D. Pavord reports grants from Chiesi, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, Aerocrine, Almirall, Novartis, Teva, Chiesi, Sanofi/Regeneron, Menarini and GlaxoSmithKline, payment for organising educational events from AstraZeneca, GlaxoSmithKline, Sanofi/Regeneron and Teva, payment for expert testimony in a patent dispute involving AstraZeneca and Teva, support for attending meetings from Boehringer Ingelheim, GlaxoSmithKline, AstraZeneca, Teva and Chiesi, patents planned, issued or pending for the Leicester Cough Questionnaire with Merck, Bayer and Insmed, and participation on a data safety monitoring board or advisory board with Genentech, Sanofi/Regeneron, AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Novartis, Teva, Merck, Circassia, Chiesi and Knopp. The remaining authors have no potential conflicts of interest to disclose.

- 15 references
- 1 figure

Supplementary info

Publication typesExpand

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

1

Editorial

Thorax

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. 2025 Nov 7:thorax-2025-223951.

doi: 10.1136/thorax-2025-223951. Online ahead of print.

Uncomfortably numb: the risk of respiratory depression from neuropathic pain medicines

Anna Meffen [1], Dominick Shaw [2]

Affiliations Expand

- PMID: 41203399

- DOI: 10.1136/thorax-2025-223951

No abstract available

Keywords: Asthma; COPD Exacerbations; Pneumonia.

Conflict of interest statement

Competing interests: None declared.

Supplementary info

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2

Editorial

Eur Respir J

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. 2025 Nov 6:2502244.

doi: 10.1183/13993003.02244-2025. Online ahead of print.

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 Mg Halpin [1 2], Refiloe Masekela [3 4 2], Claus F Vogelmeier [5], Obianuju B Ozoh [6], Alvaro A Cruz [7], Helen K Reddel [8], Arzu Yorgancıoğlu [9 10], Alvar Agusti [11 10]; 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

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3

Eur Respir J

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. 2025 Nov 6:2501573.

doi: 10.1183/13993003.01573-2025. Online ahead of print.

Mepolizumab for the treatment of refractory chronic cough in patients with eosinophilic airways disease (MUCOSA): a randomized, double-blind, parallel-group, placebo-controlled trial

Nermin Diab [1], Danica Brister [2], Elena Kum [3], Mustafaa Wahab [3], Wafa Hassan [3], Sue Beaudin [3], Catie Obminski [3], Jennifer Wattie [3], Lesley Wiltshire [3], Karen Howie [3], Kieran Killian [3], Kimberley Holt [4], Roma Sehmi [3], Gail M Gauvreau [3], Jaclyn A Smith [4], Paul M O'Byrne [3 5], Imran Satia [6 4 5]

Affiliations Expand

- PMID: 41198391

- DOI: 10.1183/13993003.01573-2025

Abstract

Objective: Patients presenting with chronic cough often have eosinophilic airways disease that remains refractory despite inhaled or oral corticosteroids. Studies in asthma patients have shown that eosinophils co-localize with airway sensory nerves, and after allergen challenge, are associated with neuronal sensitivity. We

evaluated whether mepolizumab, a monoclonal antibody targeting interleukin-5, reduces cough in patients with eosinophilic airways disease.

Methods: We conducted a single-center, randomized, double-blind, parallel-group, placebo-controlled trial of 30 patients with refractory chronic cough and eosinophilic airways disease (sputum eosinophils ≥2%). Patients underwent 1:1 randomization to receive subcutaneous mepolizumab (100 mg) or placebo every 4 weeks for 12 weeks. Change from baseline in 24-hour cough frequency at 14 weeks represented the primary endpoint.

Measurements and main results: Compared to placebo, mepolizumab did not lead to improvements in 24-hour cough frequency at 14 weeks (percent change relative to placebo: +18.0% [95% CI -46.4% to 160.1%]; p=0.99). We found no between-group differences in awake cough frequency, sleep cough frequency, cough severity on the 100-mm visual analogue scale, and quality of life on the Leicester Cough Questionnaire. Mepolizumab significantly reduced blood eosinophils compared to placebo at week 14 (mean difference: -237.7 cells·μL^{-1} [95% CI -328.3 to -147.1]; p<0.0001) and had a significant overall effect in reducing sputum eosinophils over the study (p=0.045). No major adverse events occurred.

Conclusion: In patients with refractory chronic cough and persistent eosinophilia despite inhaled corticosteroid therapy, Mepolizumab did not improve cough despite reducing blood and sputum eosinophils. Targeting eosinophils might not impact cough in these patients and alternative mechanisms are likely driving their cough.Clinical trial registered with www.

Clinicaltrials: gov (NCT04765722).

Supplementary info

Associated dataExpand

Full text links

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4

Eur Respir J

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. 2025 Nov 6:2501289.

doi: 10.1183/13993003.01289-2025. Online ahead of print.

Mortality in Severe Asthma - results from the NORDSTAR cohort

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

Affiliations Expand

- **PMID: 41198390**

- **DOI: 10.1183/13993003.01289-2025**

Abstract

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

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

Results: We included 11 811 and 118 810 patients with severe and mild-to-moderate asthma, respectively. All-cause mortality was significantly higher in patients with severe asthma compared to patients with mild-to-moderate asthma, both in absolute measures of the cumulative mortality [34% (95% CI: 32, 35) *versus* 20% (19, 20), p<0.001] after 20 years of follow-up and in relative measures [hazard ratio (HR)=1.99 (1.90, 2.09), p<0.001]. The HR of all-cause mortality was attenuated after adjustment for oral corticosteroid (OCS) use [HR=1.30 (95% CI: 1.23, 1.37, p<0.001)] and T2 inflammatory markers [HR=1.34 (1.09, 1.64), p<0.001]. The increased cumulative mortality risk was mainly due to respiratory diseases [12.6% (95% CI:11.7, 13.6) *versus* 3.3% (3.2, 3.5), p<0.001] with cancer [7.5% (95% CI: 6.8, 8.3) *versus* 5.9% (5.7, 6.2), p<0.001] and cardiovascular diseases [4.7% (95% CI: 4.1, 5.3) *versus* 3.8% (3.6, 4.0), p<0.001] also contributing. Though rare, the relative risk of asthma-related deaths was three-fold in severe asthma patients [HR=2.95 (2.08, 4.18), p<0.001].

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

Full text links

Cite

5

J Allergy Clin Immunol Pract

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. 2025 Nov 4:S2213-2198(25)01025-6.

doi: 10.1016/j.jaip.2025.10.038. Online ahead of print.

Adherence to Inhaled Corticosteroids and Clinical Outcomes Following a Year of Tezepelumab Therapy for Severe Asthma

Grainne d'Ancona [1], Faizan Haris [2], Jessica Gates [2], Niall Stewart-Kelcher [3], Linda Green [4], Jodie Lam [4], Mariana Fernandes [4], Louise Thomson [4], Cris Roxas [4], Zijing Yang [5], Jaideep Dhariwal [4], Alexandra M Nanzer [2], David J Jackson [2]

Affiliations Expand

- PMID: 41198022

- DOI: 10.1016/j.jaip.2025.10.038

Abstract

Background: High-dose inhaled corticosteroid (ICS) are associated with adverse effects. Reductions in ICS use whilst treated with anti-IL5/5R therapies can lead to reduced clinical effectiveness in some patients.

Objective: This study explored whether the broader anti-T2 effects of the anti-TSLP therapy tezepelumab permitted a reduction in ICS use without deleterious clinical consequences.

Methods: Adherence to ICS/LABA in the 12 months before and 12 months after commencing tezepelumab for severe asthma was calculated using medicines possession ratio (MPR) methodology and classified as poor (<0.5), suboptimal (0.51-0.74) and good (≥0.75). Clinical outcomes including exacerbation rate, ACQ-6 score, FEV1 and the ability to achieve clinical remission, as well as T2 biomarker levels at 1 year were compared across ICS adherence sub-groups.

Results: 152 adults with severe asthma who commenced tezepelumab were included. At the end of 12 months treatment, there was a significant reduction in the median MPR from 1.0 (0.83-1.08) at baseline to 0.83 (0.58-1), p=0.009. ICS adherence was good in 69.1%, suboptimal in 12.5% and poor in 18.4% of patients. At 1 year,

improvements in all clinical outcome measures as well as rates of biological remission were similar across ICS adherence groups (all p>0.05).

Conclusion: A fall in ICS adherence following initiation of tezepelumab for severe asthma was not associated with evidence of reduced clinical effectiveness of tezepelumab, including the ability to achieve remission. Similar rates of biological remission further suggests that the broad anti-T2 effect of anti-TSLP may be sufficient to permit a safe reduction in ICS exposure.

Keywords: Adherence; Asthma; Biologic; Biological; Inhaled Corticosteroid; TSLP; Tezepelumab.

J Allergy Clin Immunol

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. 2025 Nov 4:S0091-6749(25)01113-3.

doi: 10.1016/j.jaci.2025.10.023. Online ahead of print.

A Promise Fulfilled: Updates on RSV Vaccines and Monoclonal Antibodies

Alastair Murray [1], Helen Y Chu [2]

Affiliations Expand

- PMID: 41197777

- DOI: 10.1016/j.jaci.2025.10.023

Abstract

Respiratory syncytial virus (RSV) is a leading cause of lower respiratory tract infection and hospitalization in infants, older adults, and immunocompromised individuals. In children, early-life RSV infection has been associated with increased risk of recurrent wheezing and asthma. In adults ≥60 years, RSV contributes

significantly to respiratory morbidity, comparable to influenza in seasonal burden. Recent advancements have led to the licensure of three RSV vaccines for older adults and pregnant people. Immunogenicity data shows a durable antibody response for more than one respiratory season. Additionally, two new, potent long-acting monoclonal antibodies are now recommended for all infants entering their first RSV season. These preventive tools have expanded public health strategies to reduce RSV-associated illness across age groups. Maternal vaccination and monoclonal antibodies have reduced medically attended RSV illness in infants by more than 50%. Overall, these tools represent major progress in RSV prevention. Areas in need of further investigation include continued post-licensure monitoring for safety and effectiveness, evaluation of the overall durability of protection, considerations of the need for repeat dosing, and monitoring for broader population-level benefits, including the possibility of reduced asthma risk, and expansion of use into high-risk and immunocompromised populations.

Keywords: Asthma and Wheezing; Immunocompromised Population; Maternal Vaccination; Monoclonal Antibodies; RSV; Respiratory Syncytial Virus; Vaccination.

Supplementary info

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7

Review

Respir Res

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. 2025 Nov 5;26(1):310.

doi: 10.1186/s12931-025-03388-2.

Crosstalk between airway epithelial cells and mast cells in airway inflammation

Junfan Wang [#1], Yuting Liang [#2 3], Liting Wu [1], Ting Xu [1], Wenfang Zhuang [4], Jia Li [5]

Affiliations Expand

- PMID: 41194143

- PMCID: PMC12587634

- DOI: 10.1186/s12931-025-03388-2

Abstract

Airway epithelial cells (AECs) and mast cells (MCs) are pivotal initiators and amplifiers of airway inflammation, orchestrating a dynamic crosstalk that drives pathological hyperreactivity in respiratory diseases. AECs, as the frontline barrier, detect pathogens and allergens, releasing cytokines (e.g., IL-33, TSLP) and chemokines to activate neighboring MCs. Conversely, MC-derived proteases (tryptase, chymase) and mediators (histamine, leukotrienes) disrupt epithelial junctions (e.g., E-cadherin, occludin), exacerbating barrier dysfunction and perpetuating cycles of inflammation. This reciprocal interaction establishes a molecular hub for 'hyperinflammation' in asthma, chronic obstructive pulmonary disease (COPD), and viral infections, while also contributing to pathological processes such as airway remodeling, fibrosis, and epithelial-mesenchymal transition (EMT). Therefore, elucidating the synergistic mechanisms underlying AEC-MC crosstalk is critically important. This review synthesizes emerging insights into AEC-MC crosstalk, emphasizing context-specific mechanisms in viral, allergic, and chronic inflammatory settings, and provide suggestions for future research directions.

Keywords: Airway epithelial cells; Airway inflammation; Crosstalk; Mast cells.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: Not applicable. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- 101 references

- 3 figures

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

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8

Review

J Investig Allergol Clin Immunol

. 2025 Nov 5:0.

doi: 10.18176/jiaci.1123. Online ahead of print.

A Critical Review of Occupational Asthma in the 21st Century Work Environment

C A Galván [1 2], R Durán [3], S Quirce [4]

Affiliations Expand

- PMID: 41191020

- DOI: 10.18176/jiaci.1123

Abstract

Background and objectives: Occupational asthma (OA) is an increasingly relevant respiratory disease in modern workplaces. Epidemiological evidence highlights its considerable prevalence among the global working population, with recent increases following an initial decline in the early 21st century. To critically review the pathophysiological mechanisms, risk factors, clinical presentations, and emerging challenges associated with OA, focusing on novel exposures, biomarker development, and translation of scientific findings into preventive and clinical practice.

Methods: A literature review was conducted through a bibliographic search in PubMed (MEDLINE) and Web of Science. Articles were selected and analyzed using the Rayyan collaborative platform. Empirical studies on prevalence, risk factors, diagnosis, and management of OA were included.

Results: OA is primarily categorized as sensitizer- or irritant-induced, each exhibiting unique molecular pathways and clinical courses. Transcriptomic research has identified specific microRNA profiles as innovative biomarkers with significant diagnostic capacity. Studies document risks in traditionally non-high-risk sectors, such as offices and educational environments. Factors such as work chronobiology (night shifts), sex, and socioeconomic status influence the development and prognosis of OA, potentially leading to loss of productivity and employment.

Conclusion: OA is a significant challenge in occupational health, with complex epidemiological patterns. While advances in molecular characterization and identification of emerging risk factors have improved our understanding of the condition, diagnostic and management challenges persist. Future research should focus on developing specific biomarkers and accessible diagnostic tools for

primary care, along with evidence-based preventive strategies for emerging labor sectors.

Keywords: Occupational asthma. Occupational exposure. Respiratory hypersensitivity. Biomarkers. MicroRNAs. Occupational diseases. Risk factors. Environmental monitoring. Chronobiological disorders..

Supplementary info

Publication typesExpand

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9

Multicenter Study

Respir Res

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. 2025 Nov 4;26(1):306.

doi: 10.1186/s12931-025-03378-4.

Use of long-acting muscarinic antagonists for severe asthma: insights from clinicians in the SHARP network

Alessandro Marcon [1], Luigi Martinelli [2], Aruna T Bansal [3], Emmanuelle Berret [4], Apostolos Bossios [5 6 7], Pierpaolo Marchetti [2], Celeste Porsbjerg [8], Stefania Principe [9], Florence Schleich [10 11], Svetlana Sergejeva [12], Jacob K Sont [13], Marco Caminati [14]

Affiliations Expand

- PMID: 41188910

- PMCID: PMC12584430

- DOI: 10.1186/s12931-025-03378-4

Abstract

Background: There is limited real-world evidence on the use and positioning of inhaled long-acting muscarinic antagonists (LAMAs) for treating severe asthma.

Objective: We aimed to assess the differences in clinicians' perspectives on prescribing LAMA for severe asthma across Europe.

Methods: Within the Severe Heterogeneous Asthma Research collaboration, Patient-centred (SHARP) network, we conducted a multi-country survey of 470 respiratory clinicians in 2023-24.

Results: Most participants were pneumonologists (83%). 68% reported using specific criteria for prescribing LAMA for severe asthma, primarily fixed bronchial obstruction (68%), frequent asthma exacerbations (65%), and a history of smoking (53%). Improved quality of life, lung function improvement, and reduction of asthma exacerbations were the three expected outcomes of LAMA treatment that showed the largest agreement across clinicians (85-95%). As compared to non-severe asthma specialists (about 50% of the sample), severe asthma specialists were more likely to report always prescribing LAMA before biologics (54 vs. 41%) and before oral corticosteroids (OCS) (51 vs. 40%). Approximately 90% of participants prioritised tapering or discontinuing OCS before stopping LAMA. Overall, participants in Northern (n = 73) and Western Europe (n = 71) appeared less prone to prescribe LAMA and less confident in their benefits compared to those from Eastern (n = 88) and Southern Europe (n = 238). In particular, most participants from Latvia (91%) and Lithuania (67%) reported that LAMAs are not reimbursed for severe asthma in their countries. Most participants who expressed their opinion favoured triple therapy (n = 236) over single inhaler therapy (n = 91).

Conclusion: Our findings show that barriers and heterogeneous approaches still limit LAMA prescription for severe asthma in Europe, potentially leading to the underuse of this treatment option. Establishing a clear role for LAMA within a precision medicine framework is crucial; this aspect is not yet firmly supported by current international recommendations.

Keywords: Asthma care; Bronchodilators; Clinical guidelines; Controller medication; Geographical variability; Real-world evidence; Severe asthma; Survey-based research.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study involved the participation of clinicians who completed an anonymous questionnaire. Participants were not recruited individually but were reached via emails by national societies or SHARP National Leads, without access to their personal information. Participation was voluntary, and informed consent was explicitly obtained at the beginning of the questionnaire (Additional file 3). Consent for publication: Not applicable. Competing interests: A. Bansal reports receipt of statistical consultancy fees from ERS and SHARP funding partners (GSK, Chiesi, Teva, Sanofi, Novartis); E. Berret reports salary support by ERS and SHARP funding partners (GSK, Chiesi, Teva, Sanofi, Novartis); A. Bossios reports a grant from AstraZeneca, and honoraria and lecture fees from Chiesi, GSK, and AstraZeneca, paid to his institution outside the submitted work; he is head of ERS Assembly 5 (Airway diseases, asthma, COPD, and chronic cough); he is a member of the Steering Committee of the Swedish National Airway Register; C. Porsbjerg reports grants or contracts in the past 36 months and consulting fees by AstraZeneca, GlaxoSmithKline, Novartis, Sanofi, and

ALK. S. Principe reports salary support by SANOFI, GSK, and AstraZeneca paid to her institution outside the submitted work; she is a member of the Young Investigator Board of the Netherlands Respiratory Society; F. Schleich received grants from GSK, Chiesi, AstraZeneca, and Sanofi, and consultation fees from GSK, AstraZeneca, Novartis, Chiesi, Teva, Celltrion, and Sanofi; J.K. Sont reports grants or contracts from the Dutch RAPSODI severe asthma registry, SHARP severe asthma registries, and AstraZeneca; he received equipment, materials, or other services from Bosch, Vivatmo me and Albus Health, Albus Home RD. The rest of the authors report no financial relationships with any organisations that might have an interest in the submitted work in the previous 3 years, and no other relationships or activities that could appear to have influenced the submitted work.

- **19 references**
- **3 figures**

Supplementary info

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10

BMJ Open Respir Res

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. 2025 Nov 4;12(1):e003226.

doi: 10.1136/bmjresp-2025-003226.

Interaction between genetic predisposition to successful ageing and chronic air pollution on lung disease in elderly women: results of the German SALIA cohort

Sara Kress [#1], Michael Lau [#1,2], Claudia Wigmann [1], Michael J Abramson [3], Holger Schwender [2], Tamara Schikowski [4,5]

Affiliations Expand

- **PMID: 41188008**
- **PMCID: PMC12587969**

- DOI: 10.1136/bmjresp-2025-003226

Abstract

Objective: To investigate the interplay between the genetic predisposition to successful ageing and air pollution on lung disease in healthy aged German women under the hypothesis that ageing and lung diseases share mechanisms of oxidative stress and inflammation that can be regulated by genetic predisposition and environmental factors.

Design: German Study on the influence of Air pollution on Lung function, Inflammation and Aging prospective cohort between baseline (1985-1994) and follow-up (2007-2010).

Setting: Urban Ruhr area and the adjacent rural Münsterland in Germany.

Participants: At baseline, 4874 women aged 55 years living between 1985 and 1994 in the setting and at follow-up examination, 834 of them participated.

Main outcome measures: Chronic lung disease was defined as any of asthma, chronic bronchitis, cough (with sputum) or chronic obstructive pulmonary disease. Chronic individual exposures to nitrogen dioxide (NO_2), nitrogen oxides, particulate matter with median aerodynamic diameters <2.5 ($PM_{2.5}$), PM_{10}, PM_{coarse} and $PM_{2.5\ absorbance}$ based on European Study of Cohorts for Air Pollution Effects land-use regression models were used. Main and interaction effects between the genetic risk score (77 single-nucleotide polymorphisms (SNPs) related to successful ageing) and air pollutant exposures were investigated using adjusted logistic regression models.

Results: In 560 women (67-80 years), chronic lung disease was present in 156. Higher exposure to air pollution was associated with increased odds by up to 43% per IQR-increase in NO_2 (IQR=11.6 µg/m³, 95% CI 1.15 to 1.77). The genetic make-up reduced the negative impact of air pollution (gene-environment interaction with NO_2: OR=0.66, 95% CI 0.45 to 0.96), while a healthy lifestyle further strengthens this association.

Conclusions: In elderly women, genetic predisposition based on successful ageing SNPs likely reduces the negative impact of air pollution on chronic lung disease, while a healthy lifestyle further strengthens this association.

Keywords: Machine Learning; Pulmonary Disease, Chronic Obstructive.

Conflict of interest statement

Competing interests: MJA holds investigator-initiated grants for unrelated research from Pfizer, Boehringer-Ingelheim, Sanofi and GSK. He has also undertaken an unrelated consultancy for Sanofi, received speaker's fees from GSK and The Limbic. All other authors declare they have no conflicts of interest related to this work to disclose. They declare they have no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous 3 years, no other relationships or activities that could appear to have influenced the submitted work.

- 41 references
- 4 figures

Supplementary info

MeSH terms, SubstancesExpand

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Cite

11

Multicenter Study

BMC Med

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. 2025 Nov 3;23(1):602.

doi: 10.1186/s12916-025-04426-y.

Vaccine effectiveness against influenza A in older adults and the effect of chronic conditions: results from the I-MOVE and VEBIS multicentre European hospital case-control studies, 2015/16-2023/24

Angela Mary Catherine Rose [1], Nathalie Nicolay [2], Clara Mazagatos [3], Iván Martínez-Baz [4], Odile Launay [5 6], Laurane De Mot [7], Antonino Bella [8], Mihaela Lazar [9], Ausenda Machado [10], Monika Kuliešė [11], Stephen Abela [12], Vesna Višekruna Vučina [13], Rianne van Gageldonk-Lafeber [14], Silvia Bino [15], Ralf Dürrwald [16], Iwona Paradowska-Stankiewicz [17], Judit Krisztina Horváth [18], Róisín Duffy [19], Petr Husa [20], Jim McMenamin [21], Francisco Pozo [22], Jennifer Howard [23], Miriam Latorre-Millán [24], Jesús Castilla [4], Liem Binh Luong Nguyen [5], Nicolas Dauby [25], Flavia Riccardo [8], Alina Ivanciuc [9], Verónica Gomez [10], Ligita Jančorienė [26], Gerd Xuereb [12 27], Goranka Petrović [13], Sierk Marbus [14], Adela Vasili [15], Kristin Tolksdorf [28], Joanna Bogusz [17], Beatrix Oroszi [18], Lisa Domegan [19], Lenka Součková [20], Kimberley Marsh [21], Sabrina Bacci [2], Esther Kissling [23]; I-MOVE & VEBIS Hospital Network teams

Collaborators, Affiliations Expand

- **PMID: 41185010**

- PMCID: PMC12581461

- DOI: 10.1186/s12916-025-04426-y

Abstract

Background: The Influenza - Monitoring Vaccine Effectiveness in Europe (I-MOVE/I-MOVE+) and Vaccine Effectiveness, Burden and Impact Studies (VEBIS) hospital networks have conducted seasonal multicentre, test-negative, case-control studies in Europe to measure influenza vaccine effectiveness (IVE) since 2015/16. We measured the effect of chronic conditions on VE of influenza A subtypes among older adults (≥ 65 years) using pooled-season data (2015/16-2023/24).

Methods: Hospital teams swabbed patients with severe acute respiratory infection (SARI) within 7 days of symptom onset. Cases were RT-PCR positive for influenza A(H1N1)pdm09 or A(H3N2); controls negative for any influenza virus. We calculated overall pooled-season IVE against influenza A(H1N1)pdm09 and A(H3N2), adjusted for study site, sex, age and onset date; and stratified by number of and by each chronic condition (diabetes, heart disease, lung disease/asthma, immunosuppression, kidney disease, liver disease, cancer, obesity). We investigated interaction between vaccination and each condition.

Results: We included 1805 A(H1N1)pdm09 cases with 16,329 controls; 2590 A(H3N2) cases with 14,920 controls, from 13 study sites (12 countries). Over all seasons, 63-67% cases and 70% controls had ≥ 2 chronic conditions. Against A(H1N1)pdm09, pooled-season IVE was 37% (95%CI: 29-44) overall; 49% (95%CI: 9-72), 30% (95%CI: 12-44) and 38% (95%CI: 29-46) in those with 0, 1, ≥ 2 chronic conditions. Most IVE point estimates were 34-45%, apart from immunosuppression (-7%), kidney disease (17%) and liver disease (54%), but 95% CIs overlapped. Significant interaction was observed for kidney disease (p = 0.02) and immunosuppression (p = 0.01). Against A(H3N2), pooled-season IVE was 17% (95%CI: 8-25) overall; 15% (95%CI: -26-42), 11% (95%CI: -8-27) and 18% (95%CI: 7-28) in those with 0, 1, ≥ 2 chronic conditions. Here, IVE point estimates ranged 13-25%, apart from immunosuppression (5%), kidney disease (6%) and liver disease (31%), although 95% CIs overlapped. There were no significant interactions.

Conclusions: Pooled-season results suggest low-moderate VE against influenza A subtypes among older SARI patients; higher against A(H1N1)pdm09 than A(H3N2), with little evidence of chronic condition modifying effect, apart from kidney disease and immunosuppression. We stress the importance of developing improved influenza vaccines for specific populations, and encourage further research into the effect of chronic conditions on IVE in older adults.

Keywords: Chronic conditions; Europe; Hospital; Influenza; Vaccine effectiveness.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The planning, conduct and reporting of the studies was in line with the Declaration of Helsinki. Official ethical approval was not required if studies were classified as being part of routine

care/surveillance (Ireland, Italy, Malta, later seasons in Spain). In Belgium and Germany, VE is included in SARI surveillance. For Belgium, the study protocol was approved by the central Ethical Committee (CHU ST Pierre, Bruxelles) and each participating hospital's local ethical committees in 2011 (AK/12-02-11/4111), and updated from 2014 (UZ-Brussel en VUB B.U.N. 143201215671). The German SARI surveillance was approved by the Charité-Universitätsmedizin Berlin Ethical Board (Reference EA2/218/19). Other study sites obtained local ethical approval from a national review board (Croatia: approved by the Ethics committee of the Croatian Institute of Public Health on 25 September 2015 (3-year approval), 21 November 2018, 7 November 2019, 26 November 2020, 24 May 2021, 26 January 2022, 20 June 2022 and 3 July 2023, Number 80-2661/1-15; Klasa: 030-02/18-01/1, Ur. broj 381-10-18-2; Klasa: 030-02/18-01/1, Ur.broj 381-15-19-4; Klasa:030-02/20-01/3, Ur.broj 381-15-20-2; Klasa:030-02/21-01/1, Ur.broj:381-15-21-7; Klasa:030-02/21-01/1, Ur.broj:381-15-22-14, Klasa: 030-02/22-01/2, Ur.broj:381-15-22-2, Klasa:030-02/23-01/3, Ur.broj: 117-15-23-3; Hungary: approved by the National Scientific and Ethical Committee (ETT/TUKEB 56025-3/2014/EKU; ETT/TUKEB 44088-3/2015/EKU; IV/1885-5/2021/EKU); Lithuania: approved by Kaunas Regional Biomedical Research Ethics Committee for influenza seasons 2015-2020 (Nos P1-158200-04-476-138/2012, P2-158200-04-476-138/2012, P3-158200-04-476-138/2012, P4-158200-04-476-138/2012, P5-158200-04-476-138/2012, P6-158200-04-476-138/2012, P7-158200-04-476-138/2012), and approved by Lithuanian Bioethics Committee on 03 July 2020, and later permission extended for the study period for seasons 2020-2024, No. L-20-3/1-2; Navarre: approved by the Navarre Ethical Committee for Medical Research, Pyto2015/95 and EO2021/21; The Netherlands: the Dutch Medical Research Involving Human Subjects Act (Dutch acronym: WMO) did not apply, because only fully anonymous data were used and there were no interventions other than routine clinical care. A waiver for full medical ethical review was obtained from the Medical Ethical Committee of the University Medical Center Utrecht, reference No. WAG/om/15/034147; Portugal: approvals and/or amendments 22 May 2015, 28 September 2026, 12 December 2018, 28 April 2020, 19 January 2021, 7 June 2022 by the Ethics Committee of Instituto Nacional de Saúde Dr Ricardo Jorge, no registration number given; Romania: approved by the Ethics Committee of the Ministerul Apărării Naionale Institutul Naional de Cercetare pentru Dezvoltare Medico-Militară "Cantacuzino" for the period 2022–2023, No. CE199/2022; Spanish local sites for the I-MOVE periods (Donostia University Hospital, Virgen de las Nieves University Hospital from Granada, and Miguel Servet University Hospital from Zaragoza) obtained their ethical approvals for each season or protocol, from different ethic committees – Euskadi: PI2015104, 14 September 2015, Aragón: PI15/0123, 15 April 2015, with amendment 28 September 2016, Osakidetza: 20 November 2018, Aragón: PI19/430 01 April 2020, Andalucía: code f12f8377d78c34a25d6935eff535cd26715e2b8c, 15 April 2020). Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- **52 references**
- **2 figures**

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

Full text links

12

Observational Study

J Health Popul Nutr

. 2025 Nov 3;44(1):387.

doi: 10.1186/s41043-025-01129-1.

Associations of the Charlson comorbidity index with asthma and mortality (NHANES 2007-2018): a cross-sectional study

Jia Zhang [1], Huan Chen [1], Jin Liu [1], Yuqian Chen [1], Yuanjie Qiu [1], Huizhong Hu [1], Yihan Meng [1], Qianqian Zhang [2], Manxiang Li [3]

Affiliations Expand

- PMID: 41184973
- PMCID: PMC12581444
- DOI: 10.1186/s41043-025-01129-1

Abstract

Background: Patients with asthma often suffer from multiple comorbid conditions, which can exacerbate disease severity and elevate the risk of mortality. This study aims to investigate the relationship between the Charlson Comorbidity Index (CCI) and asthma, as well as their combined impact on mortality.

Methods: This is an observational cross-sectional study based on the NHANES database conducted from 2007 to 2018. The study included a total of 26,002 adult participants. Logistic regression was performed to assess the relationship between the CCI and asthma. Survival analysis, including Kaplan-Meier analysis and Cox regression, was conducted to investigate the combined effect of the CCI and asthma on all-cause mortality. Subgroup analyses were performed to confirm the reliability of the outcomes.

Results: After adjusting for sex, age, race, body mass index, and other relevant covariates, our analysis showed an association between CCI and asthma (OR, 1.120; 95% CI, 1.059-1.186). Moreover, a higher CCI score was closely associated with increased mortality risk (HR, 1.143; 95% CI, 1.109-1.179) after adjustment of confounding factors. The risk of mortality was substantially higher for individuals with both asthma and a CCI score of ≥ 2 compared to those with no asthma and a CCI score of 0 (HR, 1.853; 95% CI, 1.440-2.383). Subgroup analyses further confirmed the trend that higher CCI levels are associated with poorer survival outcomes across multiple subgroups.

Conclusion: The study indicates an association between the CCI and the risk of asthma, as well as their combined impact on elevated all-cause mortality. Since a high CCI score is associated with an increased risk of asthma and mortality, further studies are warranted to explore the causal relationship between these factors.

Keywords: Asthma; CCI; Comorbidity; Mortality; NHANES.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The NHANES protocols were approved by the Institutional Review Boards of the Centers for Disease Control and Prevention and the National Center for Health Statistics. The study conducted in accordance with the Declaration of Helsinki. Our analysis uses publicly available NHANES data and does not require additional institutional review board review. All participants provided informed consent to participate. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- **52 references**
- **3 figures**

Supplementary info

Publication types, MeSH terms, Grants and fundingExpand

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Cite

13

Ann Med

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. 2025 Dec;57(1):2581812.

doi: 10.1080/07853890.2025.2581812. Epub 2025 Nov 3.

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

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

Affiliations Expand

- PMID: 41178590

- PMCID: PMC12584834

- DOI: 10.1080/07853890.2025.2581812

Abstract

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

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

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

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

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

Conflict of interest statement

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

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

Supplementary info

MeSH terms, SubstancesExpand

Full text links

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Cite

14

J Asthma

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. 2025 Nov 5:1-11.

doi: 10.1080/02770903.2025.2577639. Online ahead of print.

Neutrophilic-dominant phenotype during exacerbations predicts adverse hospital outcomes in asthma-bronchiectasis overlap syndrome

Lishan Yuan [1], Lei Wang [1], Li Zhang [1], Ying Liu [1], Lei Liu [1], Hongping Zhang [1], Yilai Li [1], Min Feng [2 3], Chongyang Zhao [4], Qin Wang [4], Lingyun Lu [1], Gang Wang [5], Shuwen Zhang [6], Yulai Yuan [7], Deying Kang [4 8], Xin Zhang [1]

Affiliations Expand

- **PMID: 41178529**

- **DOI: 10.1080/02770903.2025.2577639**

Abstract

Background: Exacerbations of asthma-bronchiectasis overlap syndrome (ABOS) are clinically heterogeneous, with poorly defined inflammatory phenotypes and their links to outcomes.

Objective: To identify phenotypes in ABOS exacerbations and their associations with in-hospital outcomes.

Methods: In this prospective study, 343 patients with ABOS exacerbation were clustered using multidimensional data; findings were validated in 147 independent patients. Associations between phenotypes and outcomes (Intensive Care Unit [ICU] admission, invasive mechanical ventilation [IMV], mortality) were analyzed *via* multivariable regression.

Results: Three phenotypes were identified: female-paucigranulocytic (Cluster T1), young male-eosinophilic (Cluster T2), and neutrophilic-lymphopenic (Cluster T3). Cluster T3 had the highest risks of ICU admission (adjusted relative risk [RR_{adj}] = 7.84, 95% CI: 2.21-27.78), IMV (RR_{adj}=7.84, 95% CI: 2.21-27.78), and mortality (RR_{adj}=6.86, 95% CI: 2.33-37.67). Neutrophilia showed a dose-dependent association with adverse outcomes (P_{trend}<0.001), with elevated levels independently predicting composite outcomes (RR_{adj}=2.06, 95% CI: 1.42-3.03).

Conclusions: ABOS exacerbations exhibit distinct inflammatory phenotypes. The neutrophilic-lymphopenic phenotype strongly predicts in-hospital adverse outcomes, highlighting its potential for acute risk stratification in hospitalized patients.

Keywords: asthma-bronchiectasis overlap syndrome; clinical outcomes; phenotype; precision medicine.

15

Eur Respir J

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. 2025 Nov 6;66(5):2501229.

doi: 10.1183/13993003.01229-2025. Print 2025 Nov.

Fractional exhaled nitric oxide and the response to prednisolone for asthma attacks in patients treated with anti-IL5/5Rα therapy: a prospective observational study

Imran Howell [1], Mahdi Mahdi [2], Hafiz R Mahmood [2], Laura Bermejo-Sanchez [2], Catherine Borg [2], Sanjay Ramakrishnan [3], James Melhorn [2], Gabriel Lavoie [4], Nayia Petousi [2], Timothy S C Hinks [2], Mona Bafadhel [5], Ian D Pavord [2]

Affiliations Expand

- PMID: 41067871

- PMCID: PMC12591134

- DOI: 10.1183/13993003.01229-2025

Abstract

F_{ENO} testing at attack can identify the patients on anti-IL5/IL5Rα biologics who have the most lung function and symptom benefits from prednisolone https://bit.ly/3KhMB68

Conflict of interest statement

Conflict of interest: I. Howell reports support for the present study from the National Institute for Health and Care Research Oxford Biomedical Research Centre, grants from the BMA Foundation, support for attending meetings from GSK, and a leadership role on the British Thoracic Society science and research committee. S. Ramakrishnan reports support for the present study from the Charlies Foundation for Research and the National Institute for Health and Care Research Clinical Research Network, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Chiesi, Sanofi, Boehringer Ingelheim and GlaxoSmithKline, and support for attending meetings from AstraZeneca and Boehringer Ingelheim. T.S.C. Hinks reports support for the present study from a Wellcome Trust Fellowship (211050/Z/18/z) and grants from Pfizer. M. Bafadhel reports support for the present study from the National Institute for Health and Care Research (NIHR) under Research Professor award NIHR304263, grants from AstraZeneca, Asthma+Lung UK, Roche, GlaxoSmithKline and the National Institute for Health and Care Research (NIHR), payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Roche and Sanofi, support for attending meetings from AstraZeneca and Chiesi, participation on a data safety monitoring board or advisory board with AlbusHealth and Areteia, and leadership role on the British Thoracic Society science and research committee. I.D. Pavord reports grants from Chiesi, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, Aerocrine, Almirall, Novartis, Teva, Chiesi, Sanofi/Regeneron, Menarini and GlaxoSmithKline, payment for organising educational events from AstraZeneca, GlaxoSmithKline, Sanofi/Regeneron and Teva, payment for expert testimony in a patent dispute involving AstraZeneca and Teva, support for attending meetings from Boehringer Ingelheim, GlaxoSmithKline, AstraZeneca, Teva and Chiesi, patents planned, issued or pending for the Leicester Cough Questionnaire with Merck, Bayer and Insmed, and participation on a data safety monitoring board or advisory board with Genentech, Sanofi/Regeneron, AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Novartis, Teva, Merck,

Circassia, Chiesi and Knopp. The remaining authors have no potential conflicts of interest to disclose.

- **15 references**
- **1 figure**

Supplementary info

Publication typesExpand

chronic cough

1

Eur Respir J

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. 2025 Nov 6:2501573.

doi: 10.1183/13993003.01573-2025. Online ahead of print.

Mepolizumab for the treatment of refractory chronic cough in patients with eosinophilic airways disease (MUCOSA): a randomized, double-blind, parallel-group, placebo-controlled trial

Nermin Diab [1], Danica Brister [2], Elena Kum [3], Mustafaa Wahab [3], Wafa Hassan [3], Sue Beaudin [3], Catie Obminski [3], Jennifer Wattie [3], Lesley Wiltshire [3], Karen Howie [3], Kieran Killian [3], Kimberley Holt [4], Roma Sehmi [3], Gail M Gauvreau [3], Jaclyn A Smith [4], Paul M O'Byrne [3 5], Imran Satia [6 4 5]

Affiliations Expand

- **PMID: 41198391**
- **DOI: 10.1183/13993003.01573-2025**

Abstract

Objective: Patients presenting with chronic cough often have eosinophilic airways disease that remains refractory despite inhaled or oral corticosteroids. Studies in asthma patients have shown that eosinophils co-localize with airway sensory nerves, and after allergen challenge, are associated with neuronal sensitivity. We evaluated whether mepolizumab, a monoclonal antibody targeting interleukin-5, reduces cough in patients with eosinophilic airways disease.

Methods: We conducted a single-center, randomized, double-blind, parallel-group, placebo-controlled trial of 30 patients with refractory chronic cough and

eosinophilic airways disease (sputum eosinophils ≥2%). Patients underwent 1:1 randomization to receive subcutaneous mepolizumab (100 mg) or placebo every 4 weeks for 12 weeks. Change from baseline in 24-hour cough frequency at 14 weeks represented the primary endpoint.

Measurements and main results: Compared to placebo, mepolizumab did not lead to improvements in 24-hour cough frequency at 14 weeks (percent change relative to placebo: +18.0% [95% CI -46.4% to 160.1%]; p=0.99). We found no between-group differences in awake cough frequency, sleep cough frequency, cough severity on the 100-mm visual analogue scale, and quality of life on the Leicester Cough Questionnaire. Mepolizumab significantly reduced blood eosinophils compared to placebo at week 14 (mean difference: -237.7 cells·μL^{-1} [95% CI -328.3 to -147.1]; p<0.0001) and had a significant overall effect in reducing sputum eosinophils over the study (p=0.045). No major adverse events occurred.

Conclusion: In patients with refractory chronic cough and persistent eosinophilia despite inhaled corticosteroid therapy, Mepolizumab did not improve cough despite reducing blood and sputum eosinophils. Targeting eosinophils might not impact cough in these patients and alternative mechanisms are likely driving their cough.Clinical trial registered with www.

Clinicaltrials: gov (NCT04765722).

Supplementary info

Associated dataExpand

Full text links

Cite

2

Published Erratum

Surg Endosc

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. 2025 Nov 3.

doi: 10.1007/s00464-025-12317-9. Online ahead of print.

Correction: Effectiveness of transoral endoscopic fundoplication with or without hiatal hernia repair in patients with gerd and chronic cough

Eric Swei [1 2], Jose A Almario [1], Kerry Dunbar [3], Rena Yadlapati [4], Brett Parker [1], Olaya Brewer-Gutierrez [1], Peter Janu [5], Michael Murray [6], Amit Sohagia [7], David L Diehl [8], Harshit Khara [8], Barham Abu Dayyeh [9], Reem Sharaiha [10], Rasa Zarnegar [10], Jennifer M Kolb [11], Ninh Nguyen [12], Kenneth Chang [12], Marcia I Canto [13 14]

Affiliations Expand

- **PMID: 41184681**

- **DOI: 10.1007/s00464-025-12317-9**

No abstract available

Erratum for

- **Effectiveness of transoral endoscopic fundoplication with or without hiatal hernia repair in patients with gerd and chronic cough.**

Swei E, Almario JA, Dunbar K, Yadlapati R, Parker B, Brewer-Gutierrez O, Janu P, Murray M, Sohagia A, Diehl DL, Khara H, Abu Dayyeh B, Sharaiha R, Zarnegar R, Kolb JM, Nguyen N, Chang K, Canto MI.Surg Endosc. 2025 Oct 2. doi: 10.1007/s00464-025-12246-7. Online ahead of print.PMID: 41037095

Supplementary info

Publication typesExpand

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

1

Eur Respir J

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. 2025 Nov 6:2501309.

doi: 10.1183/13993003.01309-2025. Online ahead of print.

Emerging therapies in bronchiectasis

Oriol Sibila [1 2], Lidia Perea [2], Stefano Aliberti [3 4]

Affiliations Expand

- PMID: 41198393

- DOI: 10.1183/13993003.01309-2025

No abstract available

Full text links

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Cite

2

Review

Ann Med

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. 2025 Dec;57(1):2584413.

doi: 10.1080/07853890.2025.2584413. Epub 2025 Nov 6.

The role of neutrophils in bronchiectasis

Jifang Liang [1], Xueli Bai [1], Xiansheng Liu [1]

Affiliations Expand

- PMID: 41195478

- DOI: 10.1080/07853890.2025.2584413

Free article

Abstract

Background: Neutrophils are pivotal inflammatory cells in bronchiectasis pathophysiology, yet their stage-specific roles remain incompletely understood. This review synthesizes evidence on neutrophil activation across disease stages and explores therapeutic implications.

Methods: We performed a thorough literature review analyzing neutrophil behavior in bronchiectasis, focusing on proliferation, activation, and their contributions to tissue damage during the early and middle stages and analyzing their behavior and its correlation with disease progression. To ensure a comprehensive review of the literature on the role of neutrophils in bronchiectasis, we conducted a systematic search using the following databases: PubMed, Embase, and Web of Science. The search terms included 'neutrophils,' 'bronchiectasis,' 'neutrophil elastase,' 'bronchiectasis treatment,' and 'neutrophilic inflammation'. The search period covered articles published from January 2000 to June 2024. We also reviewed the reference lists of relevant articles to identify additional studies.

Results: Neutrophils demonstrated significant proliferation and activation during the early and middle stages of bronchiectasis, leading to the release of inflammatory mediators and an exacerbation of tissue damage. In particular, neutrophil activation during the middle stage of the disease was significantly positively correlated with the destruction of bronchial tissue. Furthermore, inhibiting neutrophil activation markedly reduced the release of inflammatory factors and improved the integrity of bronchial epithelial cells.

Conclusions: This study highlights the role of neutrophil activation at different stages of bronchiectasis and suggests that targeting neutrophil activation may represent a promising therapeutic strategy.

Keywords: Bronchiectasis; activation inhibition; bronchodilation; inflammatory mechanisms; neutrophils; targeted therapy.

3

ERJ Open Res

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. 2025 Nov 3;11(6):00007-2025.

doi: 10.1183/23120541.00007-2025. eCollection 2025 Nov.

Efficacy of elexacaftor/tezacaftor/ivacaftor in non-cystic fibrosis bronchiectasis patients with a single pathogenic *CFTR* mutation: a retrospective cohort analysis

Lena Papadakis [1], Isabel Neuringer [2 3], Hang Lee [4], Anne O'Donnell [5], Julia Zweifach [1], Brenden Lawton [1], Leonard Sicilian [2 3], Rocio Hurtado [6], Tayler Stander [2], Lindsay Bringhurst [2], Christopher Richards [2 3]

Affiliations Expand

- PMID: 41189580
- PMCID: PMC12581160
- DOI: 10.1183/23120541.00007-2025

Abstract

Introduction: It has previously been established that there is an increased incidence of mutations in the cystic fibrosis transmembrane regulator (*CFTR*) gene amongst patients with non-cystic fibrosis bronchiectasis (NCFB). With the advent of new highly effective *CFTR* modulators, specifically elexacaftor-tezacaftor-ivacaftor (ETI), we asked whether NCFB patients with a single ETI amenable mutation who do not meet the criteria for a diagnosis of cystic fibrosis (CF) would benefit from this therapy.

Methods: We assembled a retrospective cohort of patients (n=12) with a single *CFTR* mutation amenable to ETI treatment. Patients included in this cohort did not meet the diagnostic criteria for CF but presented with similar pulmonary symptoms and frequent exacerbations. Medical records were reviewed to determine the effects of ETI on clinical outcomes. Paired sample t-test for univariate analysis and multivariate linear mixed effect modeling for continuous and categorical variables were used to examine the impact of ETI therapy.

Results: Improvements in pulmonary symptoms were observed in all 12 patients (100%), and 11 patients (91.6%) expressed improvement in quality of life. Mean % predicted forced expiratory volume in 1 s improved significantly from 69.3% to 75.0% (p=0.007). Mean reported pulmonary symptoms decreased to 2.17 (p=0.007) and mean reported pulmonary exacerbations decreased to 1.08 per year (p=0.0006). When controlling for sweat chloride and Poly T insertions, post-ETI improvement remained significant.

Conclusion: Amongst patients presenting with NCFB and an amenable *CFTR* mutation, treatment with ETI improved lung function, symptoms and quality of life and led to a significant reduction in annual pulmonary exacerbations. Larger clinical studies are needed to further validate these findings.

Conflict of interest statement

Conflict of interest: C. Richards receives funding from Insmed, Inc., the France Foundation, and the COPD Foundation, none of which are related to the work presented here. The other authors have nothing to disclose.

- 38 references
- 2 figures

Full text links

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Cite

4

J Asthma

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. 2025 Nov 5:1-11.

doi: 10.1080/02770903.2025.2577639. Online ahead of print.

Neutrophilic-dominant phenotype during exacerbations predicts adverse hospital outcomes in asthma-bronchiectasis overlap syndrome

Lishan Yuan [1], Lei Wang [1], Li Zhang [1], Ying Liu [1], Lei Liu [1], Hongping Zhang [1], Yilai Li [1], Min Feng [2 3], Chongyang Zhao [4], Qin Wang [4], Lingyun Lu [1], Gang Wang [5], Shuwen Zhang [6], Yulai Yuan [7], Deying Kang [4 8], Xin Zhang [1]

Affiliations Expand

- **PMID: 41178529**
- **DOI: 10.1080/02770903.2025.2577639**

Abstract

Background: Exacerbations of asthma-bronchiectasis overlap syndrome (ABOS) are clinically heterogeneous, with poorly defined inflammatory phenotypes and their links to outcomes.

Objective: To identify phenotypes in ABOS exacerbations and their associations with in-hospital outcomes.

Methods: In this prospective study, 343 patients with ABOS exacerbation were clustered using multidimensional data; findings were validated in 147 independent patients. Associations between phenotypes and outcomes (Intensive Care Unit [ICU] admission, invasive mechanical ventilation [IMV], mortality) were analyzed *via* multivariable regression.

Results: Three phenotypes were identified: female-paucigranulocytic (Cluster T1), young male-eosinophilic (Cluster T2), and neutrophilic-lymphopenic (Cluster T3). Cluster T3 had the highest risks of ICU admission (adjusted relative risk [RR_{adj}] =

7.84, 95% CI: 2.21-27.78), IMV (RR_{adj}=7.84, 95% CI: 2.21-27.78), and mortality (RR_{adj}=6.86, 95% CI: 2.33-37.67). Neutrophilia showed a dose-dependent association with adverse outcomes (P_{trend}<0.001), with elevated levels independently predicting composite outcomes (RR_{adj}=2.06, 95% CI: 1.42-3.03).

Conclusions: ABOS exacerbations exhibit distinct inflammatory phenotypes. The neutrophilic-lymphopenic phenotype strongly predicts in-hospital adverse outcomes, highlighting its potential for acute risk stratification in hospitalized patients.

Keywords: asthma-bronchiectasis overlap syndrome; clinical outcomes; phenotype; precision medicine.