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

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Am J Respir Crit Care Med

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. 2026 Aug 8:aamag413.

doi: 10.1093/ajrccm/aamag413. Online ahead of print.

The Renaissance of Bronchiectasis

Miguel Angel Martinez-Garcia[1], Anne B Chang[2 3], Sanjay H Chotirmall[4 5], Gregory Tino[6]

Affiliations Expand

- **PMID: 42569927**

- **DOI: 10.1093/ajrccm/aamag413**

Abstract

Bronchiectasis now has an expanding landscape with a research growth rate exceeding that of asthma and COPD (9). We have summarized the top ten major shifts in domains of this landscape. In addition to the gaps mentioned above, further growth also needs to focus on prevention and ensure that consumers and underserved populations are included to strengthen equity (including in medication and RCT access), enhance relevance, and translate advances into meaningful improvements in care and outcomes for both children and adults with bronchiectasis.

Keywords: Bronchiectasis; adults; children; history.

2

Int J Chron Obstruct Pulmon Dis

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. 2026 Aug 3:21:615390.

doi: 10.2147/COPD.S615390. eCollection 2026.

Low sRAGE Level is Associated with Increased Future Exacerbation Risk in Mild-to-Moderate COPD and Patients with Chronic Bronchitis Symptoms

Yutian Zhang[#1,2], Bi Ran[#1,2], Hao Wang[1,2], Dianmei Zhou[1,2], Kai Zi[1,2], Zijian Zeng[1,2], Xi Yan[1,2], Tao Wang[1,2], Lei Chen[1], Tao Ye[3], Paul Jones[4], Jun Chen[1,2], Fuqiang Wen[1,2]

Affiliations Expand

- PMID: 42569464

- PMCID: PMC13450083

- DOI: 10.2147/COPD.S615390

Abstract

Background: Early identification of patients at high-risk for exacerbation in mild-to-moderate chronic obstructive pulmonary disease (COPD), particularly those with chronic bronchitis (CB) phenotype exhibiting worse outcomes, is critical for slowing lung function decline and reducing the subsequent healthcare burden. While the soluble receptor for advanced glycation end products (sRAGE) correlates with emphysema severity in COPD, in mild-to-moderate COPD or patients with CB symptoms, no prospective investigation has evaluated the association between sRAGE and exacerbation risk.

Methods: Sub-cohort data from the COMPASS study, a prospective study in China, were analyzed. Associations between sRAGE levels and exacerbations were assessed treating sRAGE as a continuous variable and categorized into tertile. Negative binomial regression and cox regression were used to assess exacerbation rate and onset time. Subsequent analyses of lung function, COPD Assessment Tool (CAT) score and high-resolution computed tomography (HRCT) parameters were evaluated using linear mixed-effects models based on a cutoff determined by Akaike information criteria (AIC).

Results: In the COMPASS sub-cohort, 201 patients had mild-to-moderate COPD and 230 individuals reported CB symptoms. Continuous sRAGE level was not associated with exacerbation risks, but with earlier onset time. In addition, participants in the lowest sRAGE tertile exhibited significant shorter time to first exacerbation in both populations. The lowest tertile was also associated with increased exacerbation risks in patients with CB and showed a borderline significant association in patients with mild-to-moderate COPD. No significant differences in lung function decline, HRCT changes, or CAT score progression were observed between the low- and high-sRAGE groups.

Conclusion: Lower sRAGE level may be associated with an increased exacerbation risk in mild-to-moderate COPD and in patients with CB symptoms. Blood sRAGE is a candidate biomarker for identifying subgroups at higher exacerbation risk in populations at high risk of disease progression.

Clinical trial registration: Clinicaltrials.gov identifier NCT04853225; GSK study code 208630.

Keywords: chronic bronchitis; chronic obstructive pulmonary disease; exacerbation of COPD; mild-to-moderate COPD; sRAGE.

Conflict of interest statement

PJ is a contractor to GSK and holds financial equities in GSK. YT is a GSK employee and does not hold financial equities in GSK. WFQ is an external expert working in affiliated hospitals of respective medical universities, and is also core member of the COMPASS Steering Committee. The authors report no other conflicts of interest in this work.

Supplementary info

MeSH terms, Substances, Associated dataExpand

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Cite

3

J Am Heart Assoc

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. 2026 Aug 7:e046201.

doi: 10.1161/JAHA.125.046201. Online ahead of print.

Proteomic Mediators of Chronic Obstructive Pulmonary Disease Phenotypes and Coronary Artery Calcification Burden in Ever Smokers

Asghar Abbasi[1,2], Khadije Ahmad[3], Katherine A Pratte[4], Jeff Moore[1,2], Dawn L DeMeo[5], Venkat S Manubolu[3], April Kinninger[3], Nicholas B Tiller[1], Russell P Bowler[6], Mathew Budoff[3], Richard Casaburi[1,2], Harry B Rossiter[1,2]

Affiliations Expand

- **PMID: 42568067**

- **DOI: 10.1161/JAHA.125.046201**

Abstract

Background: Chronic obstructive pulmonary disease (COPD) increases cardiovascular disease risk. Coronary artery calcification (CAC) predicts cardiovascular events and mortality in COPD. We hypothesized that plasma proteins linked to pulmonary phenotypes mediate CAC burden.

Methods: Pulmonary function, emphysema, airway wall thickening, Agatston CAC scores (inverse normal transformed), and relative abundance of 1305 plasma proteins (log-transformed) were assessed in 989 Phase 1 COPDGene (Genetic Epidemiology of COPD) participants. Proteins associated with both pulmonary phenotypes (FEV_1[forced expiratory volume in 1 second]%predicted, FVC [forced vital capacity], FEV_1/FVC, emphysema, airway wall thickness, wall area percentage) and CAC (false discovery rate $P \leq 0.20$) were evaluated using multivariable mediation. Model adjustments included sex, age, race, body mass index, smoking, comorbidities, and medications. Adjustment for pulmonary artery-to-aortic diameter ratio-a marker of pulmonary vascular pressure-was also explored. The95% bootstrap CIs that excluded zero were considered significant.

Results: FEV_1%predicted ($P=0.026$) and FEV_1/FVC ($P=0.010$) were associated with CAC. After adjusting for FEV_1, visual emphysema, and visual airway wall thickening remained associated with CAC. Five proteins (TSP2 [thrombospondin-2], renin, MMP-7 [matrix metalloproteinase-7], ERBB1 [epidermal growth factor receptor], MIC-1 [macrophage inhibitory cytokine-1]) mediated the FEV_1%predicted and CAC association. All except MIC-1 mediated FEV_1/FVC and CAC. All except renin mediated quantitative airway wall thickness or wall area percentage and CAC. Additionally, α2-antiplasmin (alpha-2 antiplasmin) mediated airway wall thickness and CAC. ERBB1 mediated visual paraseptal emphysema and CAC. Pulmonary artery-to-aortic diameter ratio adjustment reduced or eliminated some mediation effects. ERBB1 remained an independent mediator across multiple phenotypes.

Conclusions: Six plasma proteins mediated associations between COPD phenotypes and CAC burden. These effects were partially influenced by pulmonary artery-to-aortic diameter ratio A, suggesting shared molecular pathways linking lung dysfunction to cardiovascular risk in COPD.

Keywords: chronic obstructive pulmonary disease; coronary artery calcification; coronary artery disease; plasma mediators; pulmonary artery-to-aorta ratio.

. 2026 May 4;134(4):386-396.

doi: 10.1021/EHP.6c00128. eCollection 2026 Aug 4.

Source-Specific Air Pollution and Risk of Chronic Obstructive Pulmonary Disease: A Pooled Cohort Study

Manuella Lech Cantuaria[1,2], Aslak Harbo Poulsen[1], Ole Raaschou-Nielsen[1,3], Étienne Audureau[4,5], Ralph Epaud[4,6,7], Sophie Lanone[4], Jørgen Brandt[3,8], Lise Marie Frohn[3], Matthias Ketzel[3], Anja Olsen[9,10], Lau Caspar Thygesen[11], Mette Sørensen[1,12]

Affiliations Expand

- PMID: 42564909

- PMCID: PMC13445269

- DOI: 10.1021/EHP.6c00128

Abstract

Background: The evidence linking long-term exposure to air pollution and the development of chronic obstructive pulmonary disease (COPD) is still controversial. Furthermore, most studies have investigated associations with particulate matter (PM) and nitrogen dioxide (NO_2), disregarding their emission source and other relevant air pollutants, such as ultrafine particles (UFP) and elemental carbon (EC).

Objectives: This study aimed to assess associations between long-term residential exposure to $PM_{2.5}$, NO_2, UFP, and EC and the risk of COPD, distinguishing the effects of air pollution from local traffic and other sources.

Methods: We pooled data from two large Danish cohorts, the Diet, Cancer, and Health cohort and the Danish National Health Survey. For all participants (*N* = 159,769), we estimated long-term air pollution exposure to total, local traffic, and other contributions, based on complete address histories. We used Cox proportional hazards models to estimate associations between 10-year time-weighted averaged air pollution and incident COPD, adjusting for demographic, socioeconomic, and lifestyle factors, including smoking. We evaluated the possible modification of these associations by sex, smoking status, and previous asthma diagnosis.

Results: Long-term exposures to $PM_{2.5}$, NO_2, UFP, and EC were associated with higher risk of COPD. The highest hazard ratio (HR) per interquartile range of total contributions was observed for $PM_{2.5}$ (HR: 1.11 [95% confidence interval: 1.05, 1.17]), followed by NO_2 (1.08 [1.04, 1.13]), UFP (1.05 [0.99, 1.11]), and EC (1.02 [1.00, 1.05]), after full adjustment. $PM_{2.5}$ from other sources than local traffic was more strongly associated with COPD than $PM_{2.5}$ from local traffic, while for UFP and EC, the contributions from local traffic seemed to be the most harmful. Effect modification analyses showed stronger associations among women, never smokers, and those with an asthma diagnosis.

Discussion: Our findings suggest that air pollution from local traffic and other sources contributes to COPD risk, with variations depending on the pollutant type. Further research is needed to validate these findings across different populations and geographical settings.

- **77 references**
- **4 figures**

Supplementary info

MeSH terms, SubstancesExpand

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Cite

5

Review

Cureus

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. 2026 Aug 4;18(8):e113973.

doi: 10.7759/cureus.113973. eCollection 2026 Aug.

Procalcitonin-Guided Strategies for Reducing Antibiotic Use in CAP, HAP, VAP, and COPD: Insights From a Systematic Review and Meta-Analysis

Vivek Nangia[1], Raja Dhar[2]

Affiliations Expand

- **PMID: 42564721**
- **PMCID: PMC13445946**
- **DOI: 10.7759/cureus.113973**

Abstract

Procalcitonin (PCT)-guided therapy may optimize antibiotic use in respiratory infections and chronic lung diseases. This systematic review aimed to assess the role of PCT-guided protocols in reducing antibiotic duration, length of hospital and ICU stay, and clinical outcomes in patients with community-acquired pneumonia (CAP), hospital-acquired pneumonia (HAP), ventilator-

associated pneumonia (VAP), and chronic obstructive pulmonary disease (COPD). A secondary literature search was conducted using the databases PubMed and Google Scholar to identify the relevant studies published between January 2003 and December 2023. Eligible studies included peer-reviewed original research (clinical trials, observational, cohort, and case-control studies) evaluating PCT in CAP, VAP, HAP, or COPD, including viral and/or bacterial lower respiratory tract infections (LRTIs) in humans. The excluded studies were animal studies, studies not involving LRTIs, PCT studies lacking extractable data, and non-peer-reviewed editorials, opinions, and conference abstracts. Inconsistency across studies was assessed by heterogeneity analyses and publication bias using funnel plots. Twenty-four studies involving 16,134 patients were included. Across all conditions, PCT-guided therapy reduced antibiotic duration, particularly in CAP, without increasing mortality. Studies included in the CAP group reported that patients in the PCT group benefited from a shorter duration of therapy, with the treatment period decreasing from an average of 13.3±6.5 days in the control group to 11.7±6.2 days in the PCT group. Similarly, the PCT group had significantly reduced ICU stays. For COPD, hospital stay was significantly reduced, though fewer studies demonstrated ICU benefits. PCT-guided protocols may effectively help in better treatment strategies for CAP and COPD management.

Keywords: antibiotic management; cap; clinical outcomes; copd; hap; icu stay; procalcitonin; respiratory infections; vap.

Conflict of interest statement

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

- 42 references
- 12 figures

Supplementary info

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Editorial

Eur Respir J

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. 2026 Aug 6;68(2):2600834.

doi: 10.1183/13993003.00834-2026. Print 2026 Aug.

Opioids for persistent dyspnoea in people with COPD: should we throw in the towel?

Jean Bourbeau[1,2], David Currow[3]

Affiliations Expand

- PMID: 42562599

- DOI: 10.1183/13993003.00834-2026

No abstract available

Conflict of interest statement

Conflict of interest: J. Bourbeau has no potential conflicts of interest to disclose. D. Currow reports intellectual property payment from Mayne Pharma International Pty Ltd.

Comment on

- Fentanyl or morphine for persistent dyspnoea in COPD: a multicentre randomised crossover trial.

van Dijk M, Mooren KJM, van Beurden-Moeskops W, Heller-Baan R, de Hosson SM, Pieterman RM, Lam-Wong WY, Peters L, Pool K, van den Berg JK, Kerstjens HAM.Eur Respir J. 2026 Aug 6;68(2):2501431. doi: 10.1183/13993003.01431-2025. Print 2026 Aug.PMID: 42242759 Free PMC article. Clinical Trial.

Supplementary info

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Comment

. 2026 Aug 6;68(2):2600966.

doi: 10.1183/13993003.00966-2026. Print 2026 Aug.

The use of spirometry to define airflow obstruction and diagnose COPD

Peter Burney[1], Ben Knox-Brown[2 3], André Amaral[2]

Affiliations Expand

- PMID: 42562597

- PMCID: PMC13446206

- DOI: 10.1183/13993003.00966-2026

Abstract

The recent statement from GOLD/GLI on the use of spirometry is insufficient, particularly in the global South https://bit.ly/4nx13qw

Conflict of interest statement

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

Comment on

- Joint statement from GOLD/GLI regarding the use of spirometry to define airflow obstruction and diagnose COPD.

Halpin DMG, Stanojevic S, McCormack MC, Singh D, Kaminsky DA, Vogelmeier CF, Gochicoa-Rangel L, Agusti A, Cooper B.Eur Respir J. 2026 Apr 16;67(4):2502574. doi: 10.1183/13993003.02574-2025. Print 2026 Apr.PMID: 41748283 Free PMC article.

- 9 references

Supplementary info

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8

Eur Respir J

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. 2026 Aug 6:2502567.

doi: 10.1183/13993003.02567-2025. Online ahead of print.

A phase 2a, double-blind, randomised, placebo-controlled trial of the myeloperoxidase inhibitor, mitiperstat, in participants with chronic obstructive pulmonary disease

Dinesh Saralaya [1], M Nubli Mustapa [2], João Ferreira [2], Janwillem W H Kocks [3 4 5 6], Wayne Brailsford [7], Sanna Rosengren [8], Enti Spata [9], Maria G Belvisi [7 10], Jacob Leander [11], Camille Riff [11], Giovanna De Palo [12], Daniel Windgassen [13], James D Chalmers [14], Richard E K Russell [15], John R Hurst [16], Adam Śmiałowski [17], Rod Hughes [18]

Affiliations Expand

- PMID: 42562590

- DOI: 10.1183/13993003.02567-2025

Abstract

Background: Neutrophilic inflammation is a common feature of chronic obstructive pulmonary disease (COPD). Mitiperstat, an inhibitor of myeloperoxidase expressed in neutrophils, may have potential as a COPD treatment.

Methods: This phase 2a, randomised, placebo-controlled, double-blind, parallel-arm, event-driven trial evaluated the efficacy and safety of mitiperstat 5 mg daily up to 24 weeks (NCT05492877). Adults (40-80 years) with moderate-to-severe COPD, at high risk of exacerbation, and receiving dual or triple inhaled therapy were included. The primary endpoint was time to first composite endpoint for exacerbations in COPD (COPDCompEx) event. Secondary endpoints included time to first moderate-to-severe COPD exacerbation, post-bronchodilator forced expiratory volume in 1 s (post-BD FEV_1) change at Week 12, respiratory symptoms, disease impact and safety.

Results: Overall, 381 participants (mean age, 66.0 years; 39.6% female) were randomised to mitiperstat (n=189) or placebo (n=192). In total, 125 (66.1%) mitiperstat-treated *versus* 125 (65.1%) placebo-treated participants experienced COPDCompEx events over 24 weeks. There was no improvement in time to first COPDCompEx event (hazard ratio [HR] 1.07 [90% confidence interval (CI) 0.87, 1.32]; p=0.599) or time to first moderate-to-severe COPD exacerbation (HR 1.23 [90% CI 0.88, 1.73]) with mitiperstat *versus* placebo. Improvements in post-BD FEV_1, respiratory symptoms or disease impact were not seen with mitiperstat. A similar proportion of participants in both groups reported adverse events; seven mitiperstat-treated participants and two placebo-treated participants had pneumonia during the study.

Conclusion: These results indicate that the risks outweigh the benefits of mitiperstat as a treatment for COPD.

Eur Respir J

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. 2026 Aug 6:2600289.

doi: 10.1183/13993003.00289-2026. Online ahead of print.

Preclinical models of COPD: a state of the art

Francesca Polverino [1], Kambez H Benam [2 3 4], Suzanne M Cloonan [5], Jeffrey L Curtis [6], Amit Gaggar [7], Farrah Kheradmand [8 9 10], Mareike Lehmann [11 12 13], Enid Neptune [14], S Vamsee Raju [7 15 16], Joselyn Rojas-Quintero [8], Maor Sauler [17], Yohannes Tesfaigzi [18], Ali Önder Yildirim [13 19], Anny Xiaobo Zhou [20], Don D Sin [21]

Affiliations Expand

- PMID: 42562589

- DOI: 10.1183/13993003.00289-2026

Abstract

Chronic Obstructive Pulmonary Disease (COPD) is a progressive and heterogeneous condition characterized by varying combinations of emphysema, small airway disease, chronic bronchitis, and exacerbations. Although multiple symptomatic therapies exist, no disease-modifying treatments are available. This gap highlights the need for improved preclinical models with greater translational relevance. Large human cohorts and single-cell/multi-mics studies have informed the development of current COPD models. We provide a state-of-the-art review of the major experimental platforms-*in vivo* (small and large animals, genetic and injury models, environmental exposures), *ex vivo* (precision-cut lung slices, organoids, co-cultures, lung-on-chip systems), and *in silico* (aerosol dispersion and computational tools). While each approach has yielded important mechanistic insights, none fully captures the complexity of COPD progression, comorbidities, gene-environment interactions, or heterogeneous clinical endotypes. Future progress will depend on the development of more integrated, human-relevant modeling systems, alongside advanced exposure platforms and AI-driven multi-omics integration to identify biologically meaningful endotypes and speed the creation of phenotype-specific therapies. We propose a phenotype-driven, cross-platform framework in which hypotheses emerging from human clinical and omics data, are validated in *in vitro* and *ex vivo* systems, evaluated in phenotype-specific *in vivo* models, and ultimately confirmed through clinical studies.

J Allergy Clin Immunol Pract

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. 2026 Aug 6:S2213-2198(26)00636-7.

doi: 10.1016/j.jaip.2026.07.039. Online ahead of print.

Small Airways Disease predicts exacerbation risk in well-controlled, but not in poorly-controlled asthma: a post-hoc analysis of the ATLANTIS study

Stanley P Galant[1], Tatiana Karp[2], Pauline J M Kuks[2], Monica Kraft[3], Salman Siddiqui[4], Leonardo M Fabbri[5], Bianca Beghé[6], Klaus F Rabe[7], Alberto Papi[8], Chris Brightling[9], Dave Singh[10], Janwillem W H Kocks[11], Ulrica Scaffidi-Argentina[12], Alessio Piraino[12], Marcello Cottini[13], Rory Chan[14], Maarten van den Berge[15]

Affiliations Expand

- PMID: 42562347

- DOI: 10.1016/j.jaip.2026.07.039

No abstract available

Keywords: Asthma; Impulse Oscillometry; Small Airways Dysfunction.

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Review

Respir Med

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. 2026 Aug 6:109080.

doi: 10.1016/j.rmed.2026.109080. Online ahead of print.

COPD case finding and identification of at-risk individuals: opportunities for early personalized intervention and disease interception

Alberto Papi[1], MeiLan K Han[2], Paola Rogliani[3], Jadwiga A Wedzicha[4], Marc Miravitlles[5]

Affiliations Expand

- **PMID: 42562238**

- **DOI: 10.1016/j.rmed.2026.109080**

Abstract

A substantial proportion of chronic obstructive pulmonary disease (COPD) cases remain undiagnosed, delaying appropriate care and allowing disease progression. Targeted case finding, particularly in symptomatic individuals and those at risk, offers an opportunity to identify COPD earlier and intervene before irreversible airflow limitation occurs. Recognizing at-risk individuals who exhibit clinical, functional, or structural abnormalities despite normal spirometry expands the potential for disease interception and personalized management. Among the modifiable traits relevant to early COPD, chronic bronchitis represents a clinically meaningful phenotype associated with disease progression and poorer outcomes. This narrative review evaluates current and emerging approaches that enhance COPD case finding and identify individuals at risk of developing the disease. These include functional assessments, imaging modalities, biomarkers, and digital health tools, which together may improve precision in detecting early abnormalities and support timely, individualized intervention strategies. Within this framework, evidence on N-acetylcysteine is described. By integrating refined case-finding strategies with targeted treatment of modifiable traits, earlier and more personalized intervention may be achievable, with the potential to alter disease trajectory and reduce the overall burden of COPD.

Keywords: N-acetylcysteine; case finding; chronic obstructive pulmonary disease; pre-COPD; treatable traits.

Conflict of interest statement

Declaration of Competing Interest ☒The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:Alberto Papi reports grants from Chiesi, AstraZeneca, GSK, Sanofi, personal fees for consultancy and/or advisory board participation and /or lecture fees from Chiesi, AstraZeneca, GSK, Sanofi, IQVIA, Avillion, Zambon, Teva, Moderna, Regeneron, Roche, Zentiva. MeiLan K. Han reports personal fees from GlaxoSmithKline, AstraZeneca, Boehringer Ingelheim, Cipla, Chiesi, Novartis, Pulmonx, Teva, Verona, Merck, Mylan, Sanofi, Roche, DevPro, Aerogen, Polarian, Regeneron, Amgen, UpToDate, Altesa Biopharma, CSL Behring, Bristol Myers Squibb, Zymeworks, Zambon, Windward Bio, Uniquity, Medscape, NACE, MDBriefcase, and Integrity. She has received either in-kind research support or funds paid to the institution from the NIH, Novartis, Sunovion, Nuvaira, Sanofi, Astrazeneca, Boehringer Ingelheim, Galvanize Therapeutics, Biodesix, the COPD Foundation and the American Lung Association. She has participated in Data Safety Monitoring Boards for Novartis and Medtronic with funds paid to the institution. She has received stock options from Meissa Vaccines and Altesa Biopharma. Paola Rogliani reports grants/research support to her Institution from Arcede Pharma, AstraZeneca, Boehringer Ingelheim, Chiesi Farmaceutici, Sanofi, Verona Pharma and honoraria or consultation fees from AstraZeneca, Boehringer Ingelheim, Chiesi Farmaceutici, GlaxoSmithKline, Menarini Group, Mucpharm, Pfizer, Recipharm, Regeneron, Roche, Sanofi and Zambon. Jadwiga A. Wedzicha reports receiving industry-sponsored research grants or honoraria for lectures, advisory board participation, or consulting from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline (GSK), Novartis,

Handok, Recipharm, Angelini, Roche, Gilead, Empirico, MucPharm, and Pfizer.from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Novartis, Chiesi, and Genentech. Marc Miravitlles has received speaker fees from AstraZeneca, Boehringer Ingelheim, Bial, Chiesi, Cipla, GlaxoSmithKline, Menarini, Kamada, Takeda, Zambon, Tabuk Pharmaceuticals, CSL Behring, Specialty Therapeutics, Sanofi/Regeneron and Grifols, consulting fees from AstraZeneca, AIRNA, Atriva Therapeutics, BEAM Therapeutics, GondolaBio, Chiesi, GlaxoSmithKline, CSL Behring, Korrobio, Menarini, Mereo Biopharma, Specialty Therapeutics, Takeda, Novo Nordisk, Roche, Sanofi/Regeneron, Zambon, Zentiva and Grifols and research grants from Grifols.

Supplementary info

Publication typesExpand

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12

Am J Med

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. 2026 Aug 6:S0002-9343(26)00582-6.

doi: 10.1016/j.amjmed.2026.07.035. Online ahead of print.

Association between Corticosteroids and In-Hospital Mortality After Cardiac Arrest: A Multicenter Study Using the eICU Collaborative Research Database

Zhe Li[1], Lei Shi[1], Wan Chen[1], Guozheng Qiu[1], Wenlong Duan[1], Shengxin Chen[1], Zhe Zheng[1], Yao Zhou[1], Liwen Lyu[2]

Affiliations Expand

- PMID: 42562040

- DOI: 10.1016/j.amjmed.2026.07.035

Abstract

Background: Clinical outcomes following cardiac arrest remain poor, and the therapeutic value of corticosteroids is controversial. We investigated the association between corticosteroid administration and in-hospital mortality across clinical phenotypes.

Methods: Using the eICU Collaborative Research Database, we included 4,580 adults admitted to the ICU post-cardiac arrest. Exposure was defined as systemic corticosteroid administration during the ICU stay. We employed multivariable logistic regression, propensity score matching, and multiple imputation to adjust for baseline confounders. A 24-hour landmark analysis addressed immortal time bias.

Results: Corticosteroid administration was independently associated with lower in-hospital mortality (adjusted OR 0.67; 95% CI 0.56-0.81; p<0.001), remaining robust across propensity-matched and landmark analyses. Significant effect heterogeneity emerged across phenotypes. Survival benefits were exclusively observed in comatose patients (Glasgow Coma Scale ≤8) and those with comorbid chronic obstructive pulmonary disease, whereas non-comatose patients derived no benefit. Notably, while corticosteroids were associated with higher rates of favorable functional neurological recovery, mortality benefits did not significantly differ across systemic inflammatory marker strata.

Conclusions: Corticosteroid exposure was associated with lower in-hospital mortality among post-cardiac arrest patients, with benefits predominantly observed in comatose phenotypes. These hypothesis-generating findings underscore the importance of phenotype-guided approaches in future prospective trials.

Keywords: Cardiac arrest; Corticosteroids; Critical care; In-hospital mortality; Post-cardiac arrest syndrome.

Conflict of interest statement

Declaration of competing interest All authors (Zhe Li, Lei Shi, Wan Chen, Guozheng Qiu, Wenlong Duan, Shengxin Chen, Zhe Zheng, Yao Zhou, and Liwen Lyu) declare that they have no relevant financial or non-financial conflicts of interest to disclose related to this work.

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Am J Ther

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. 2026 Aug 6.

doi: 10.1097/MJT.0000000000002193. Online ahead of print.

SGLT2i Use Reduces the Risk of COPD Exacerbations Compared With DPP4is in Patients With Diabetes and Concomitant COPD: A Systematic Review and Meta-Analysis

Dua Ali[1], Zainab Binte Ahmad[1], Muhammad Waqas[2], Sneha Vijay[1], Izma Kamran Ali[1], Muhammad Saad[1]

Affiliations Expand

- **PMID: 42557610**

- **DOI: 10.1097/MJT.0000000000002193**

No abstract available

Conflict of interest statement

The authors have no conflicts of interest to declare.

- 15 references

Full text links

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Cite

14

Comparative Study

BMJ

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. 2026 Aug 5:394:e100111.

doi: 10.1136/bmj-2026-100111.

Comparative effectiveness of azithromycin versus roflumilast in patients with chronic obstructive pulmonary disease: emulated target trial

Gerard T Portela[1,2], Shirley V Wang[1,2], Samy Suissa[3,4], Sebastian Schneeweiss[1,2], William B Feldman[5,2,6]

Affiliations Expand

- **PMID: 42556860**

- **DOI: 10.1136/bmj-2026-100111**

Free article

Abstract

Objective: To compare the risk of moderate or severe exacerbations of chronic obstructive pulmonary disease (COPD) among new users of azithromycin versus roflumilast in a population of patients with active COPD treated in routine clinical practice.

Design: Target trial emulation.

Data source: Optum Clinformatics Data Mart Database from 1 March 2011 to 31 August 2024.

Participants: Patients aged >40 years with active COPD and at least 183 days of continuous insurance enrolment who initiated a new oral prescription for maintenance azithromycin or

roflumilast. Those with evidence of other pulmonary conditions or alternative indications for azithromycin were excluded. Propensity score matching was used between treatment groups.

Main outcome measures: The primary outcome was time to first moderate or severe COPD exacerbation. Cox proportional hazards models estimated hazard ratios.

Results: A total of 7550 matched pairs of patients initiating azithromycin versus roflumilast were included in the cohort. The mean age of patients was 70 years, and 56% were women. The unadjusted incidence of a first moderate or severe COPD exacerbation among patients in the cohort receiving azithromycin or roflumilast was 1.2 per person year. Compared with roflumilast, azithromycin was associated with a 17% reduction in the hazard of first moderate or severe COPD exacerbation (hazard ratio 0.83, 95% confidence interval (CI) 0.79 to 0.87; number needed to treat 15, 95% CI 12 to 21). These results were robust across a range of prespecified sensitivity and subgroup analyses.

Conclusions: Among patients with active COPD, azithromycin use was associated with a reduced likelihood of moderate or severe COPD exacerbations compared with roflumilast use. Although this study did not assess the comparative safety of these agents, it provides evidence on treatment outcomes that may complement forthcoming data from a large randomised controlled trial.

Study registration: Centre for Open Science Real-World Evidence Registryhttps://osf.io/95d2v.

Conflict of interest statement

Competing interests: All authors have completed the ICMJE uniform disclosure form at http://www.icmje.org/disclosure-of-interest/ and declare: support from the National Heart, Lung, and Blood Institute. WBF previously served as a consultant for Aetion and as an expert witness in litigation against inhaler manufacturers; he currently serves as a consultant for Alosa Health. SVW has been an ad hoc consultant for Exponent, Cytel, and MITRE, a federally funded research and development centre for the Centers for Medicare and Medicaid Services on unrelated work. SSuissa attended advisory committee meetings for Atara, Novartis, and Panalgo and received speaking fees from Covis Pharma and Novartis. SSchneeweiss is participating in investigator initiated grants to the Brigham and Women's Hospital from Boehringer Ingelheim, Takeda, and UCB unrelated to the topic of this study. He owns equity in Aetion, a software manufacturer. He is an advisor to Temedica, a patient oriented data generation company. His interests were declared, reviewed, and approved by the Brigham and Women's Hospital in accordance with their institutional compliance policies.

Supplementary info

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Review

Respir Med

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. 2026 Aug 5:262:109084.

doi: 10.1016/j.rmed.2026.109084. Online ahead of print.

Oxidative stress-driven dysregulation of the MMP-2/TIMP-2 axis in chronic obstructive pulmonary disease: Molecular mechanisms, genetic polymorphisms, and therapeutic implications

Poonam Sangwan [1], Jai Gopal Sharma [2], Md Anwar Habib [3], Md Iqbal Alam [4]

Affiliations Expand

- **PMID: 42556749**

- **DOI: 10.1016/j.rmed.2026.109084**

Abstract

Chronic obstructive pulmonary disease (COPD) is a progressive inflammatory lung disorder characterized by persistent airflow limitation, airway remodeling, and irreversible destruction of alveolar structures. Increasing evidence suggests that oxidative stress plays a central role in COPD pathogenesis by disrupting the balance between proteolytic enzymes and their endogenous inhibitors, thereby promoting extracellular matrix degradation. Among these regulatory systems, the matrix metalloproteinase-2 (MMP-2) and tissue inhibitor of metalloproteinase-2 (TIMP-2) axis has emerged as a critical determinant of lung tissue integrity and remodeling. This review provides a comprehensive overview of the molecular mechanisms linking environmental risk factors, including cigarette smoke and particulate matter exposure, to oxidative stress-mediated activation of inflammatory signaling pathways such as nuclear factor-κB (NF-κB), mitogen-activated protein kinase (MAPK), and activator protein-1 (AP-1). These pathways contribute to the upregulation of MMP-2 expression and dysregulation of TIMP-2 activity, resulting in protease-antiprotease imbalance and progressive structural damage to the pulmonary extracellular matrix. In addition, the review summarizes current evidence regarding genetic polymorphisms in MMP-2 and TIMP-2 genes that may influence susceptibility to COPD and disease severity across different populations. Furthermore, emerging therapeutic strategies targeting oxidative stress and matrix remodeling pathways are discussed, highlighting their potential role in disease management. Despite advances in understanding COPD pathogenesis, significant gaps remain in elucidating the precise molecular regulation of the MMP-2/TIMP-2 axis and its clinical utility as a diagnostic or prognostic biomarker. Overall, this review emphasizes the importance of the MMP-2/TIMP-2 regulatory system as a central mechanistic link between oxidative stress and structural lung damage in COPD and underscores its potential as a promising target for future therapeutic intervention.

Keywords: Airway remodeling; Chronic obstructive pulmonary disease; Extracellular matrix remodeling; Genetic polymorphism; Matrix metalloproteinase-2; Oxidative stress; Protease–antiprotease imbalance; Tissue inhibitor of metalloproteinase-2.

Conflict of interest statement

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

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16

Review

Respir Med

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. 2026 Aug 5:109085.

doi: 10.1016/j.rmed.2026.109085. Online ahead of print.

Targeting chronic mucus hypersecretion in respiratory diseases - focus on OPEP devices

Rajesh Venkitakrishnan[1], Agam Vora[2], P K Thomas[3], Avya Bansal[4], Shyam Krishnan[5], Ankit Bansal[6], Kundan Nivangune[7], Ronak Panwala[8]

Affiliations Expand

- PMID: 42556747

- DOI: 10.1016/j.rmed.2026.109085

Abstract

Chronic respiratory diseases pose an ever-increasing health burden in India. Chronic mucus hypersecretion (CMH) is a hallmark feature of many chronic obstructive respiratory diseases (CRDs). CMH is associated with impaired mucociliary clearance, recurrent infections, and disease progression. Effective airway clearance is therefore a key component of management. Several pharmacological and non-pharmacological strategies are used in CMH for clearing airways. Of these mucoactive drugs, N-acetylcysteine (NAC) and erdosteine are commonly used in India to manage CMH. Further, oscillating positive expiratory pressure (OPEP) devices have emerged as a non-pharmacological adjunct designed to enhance mucus clearance through the combined effects of positive expiratory pressure and oscillatory airflow. These mechanisms help

stabilize airways, reduce mucus viscosity, and promote the mobilization of secretions toward the central airways for expectoration. Together, both mucoactive agents and OPEP devices prevent recurrent infections and exacerbations in chronic respiratory conditions and improve lung function and quality of life. The present review focuses on the prevalence of CMH in various CRDs, its impact on the natural history and disease progression in CRDs as well as various pharmacological and non-pharmacological therapies for CMH including published evidences. Special focus has been given to OPEP devices and therapeutic recommendations for practising clinicians have been provided.

Keywords: Aerobika; OPEP; airway clearance in chronic respiratory diseases; chronic mucus hypersecretion; oscillating positive expiratory pressure.

Conflict of interest statement

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

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Meta-Analysis

Crit Care Explor

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. 2026 Aug 6;8(8):e1452.

doi: 10.1097/CCE.0000000000001452. eCollection 2026 Aug 1.

High-Flow Nasal Cannula Versus Noninvasive Ventilation for Prevention of Reintubation in High-Risk Critically Ill Patients (HIGH-FLOW OXY): An Informative Systematic Review and Meta-Analysis

Nhan Nguyen[1,2], Nathalia Alves de Barros E Lyra[3], David Downes[4], Nghi Bao Tran[1], Vinh Quang Tri Ho[1], Yacin Zawam[5], Vy Ngoc Dan Nguyen[6], Ha Duc Thien Le[1], Jafar Aljazeeri[7,8,9]

Affiliations Expand

- PMID: 42554971

- PMCID: PMC13446969

- DOI: 10.1097/CCE.0000000000001452

Abstract

Objectives: Optimal postextubation respiratory support for critically ill patients at high risk of reintubation remains uncertain. We aimed to compare the efficacy of high-flow nasal cannula (HFNC) vs. noninvasive ventilation (NIV) in preventing reintubation among critically ill adults at high risk of extubation failure.

Data sources: PubMed, Cochrane Central Register of Controlled Trials, Embase, and ClinicalTrials.gov were systematically searched from inception through the latest available date.

Study selection: HIGH-FLOW OXY is a systematic review and meta-analysis comparing HFNC with NIV in ICU patients at high risk of extubation failure. The primary outcome was short-term reintubation within 3 days postextubation. Secondary outcomes included ICU mortality, ICU length of stay, sepsis, and nosocomial pneumonia.

Data extraction: Data were extracted using predefined criteria. Risk of bias (RoB) was assessed with the Cochrane tool, and certainty of evidence was evaluated using Grading of Recommendations, Assessment, Development, and Evaluation. Random-effects models were used for pooled analyses. Prespecified subgroup analyses included obese patients, very high-risk patients, elderly individuals, and those with acute exacerbations of chronic obstructive pulmonary disease.

Data synthesis: Fifteen randomized controlled trials (RCTs; n = 2073) were included. HFNC and NIV did not differ significantly in reintubation (odds ratio [OR], 1.19; 95% CI, 0.88-1.59), ICU mortality (OR, 0.74; 95% CI, 0.40-1.38), sepsis (OR, 1.29; 95% CI, 0.71-2.35), nosocomial pneumonia (OR, 1.01; 95% CI, 0.67-1.52), or ICU length of stay (MD -0.37 d; 95% CI, -1.42 to 0.68). Subgroup analyses suggested a higher reintubation risk with HFNC among very high-risk patients (OR, 1.63; 95% CI, 1.05-2.53) and nonoperative obese patients (OR, 2.52; 95% CI, 1.45-4.38). Sensitivity analysis excluding trials at high RoB indicated a potential increase in reintubation with HFNC (OR, 1.32; 95% CI, 1.02-1.71). Overall, certainty of evidence was low across outcomes.

Conclusions: Among ICU patients at high risk of extubation failure, HFNC did not reduce reintubation compared with NIV, and may be associated with increased risk in selected high-risk subgroups. Further adequately powered, risk-stratified RCTs are warranted to define the optimal postextubation respiratory support strategy.

Keywords: critical illness; high risk of reintubation; high-flow nasal cannula; noninvasive ventilation; very high risk.

Conflict of interest statement

The authors have disclosed that they do not have any potential conflicts of interest. All authors affirm responsibility for integrity, accuracy, and unbiased interpretation of data presented.

- 49 references

- 2 figures

Supplementary info

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18

Eur Clin Respir J

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. 2026 Aug 3;13(1):2696116.

doi: 10.1080/20018525.2026.2696116. eCollection 2026.

Effect of evening vs. morning LAMA administration on risk of intensive care admission in COPD patients: influence of adherence post hoc analysis of the randomized controlled trial - LAMA BY NIGHT

Pradeesh Sivapalan[1,2], Anna Kubel Vognsen[1], Valdemar Rømer[1,3], Niklas Dyrby Johansen[4,5], Manan Pareek[4,5], Daniel Modin[4,5], Alexander G Mathioudakis[6,7], Jørgen Vestbo[1,7], John R Hurst[8], Tor Biering-Sørensen[4,5,9,10], Jens-Ulrik Stæhr Jensen[1,2]

Affiliations Expand

- PMID: 42553488

- PMCID: PMC13435267

- DOI: 10.1080/20018525.2026.2696116

Abstract

Background: The timing of LAMA administration, prescribed for morning dosing, has been questioned, particularly given the nocturnal symptoms many COPD patients experience. The LAMA BY NIGHT trial investigated the impact of LAMA dosing timing (morning vs. evening) on patient-related outcomes, and found no significant effect on risk of exacerbation, but a significant association with ICU admissions. This post hoc analysis of the LAMA BY NIGHT trial explored this association further according to adherence to administration time.

Objective: To determine whether the administration timing of LAMA affects the risk of ICU admission for COPD patients.

Methods: The LAMA BY NIGHT trial was a digital, multicenter, randomized, open-label study that enrolled 10,011 COPD patients. Adherence was measured at 6 and 12 months, with patients

considered adherent if they used LAMA at least 6 days a week at the prescribed time. ICU admissions were tracked over 12-months, and relative risks (RR) were calculated to compare admission rates between morning and evening dosing groups. The analysis was stratified by adherence, to assess the sensitivity of the results.

Results: At 6 months, 6,747 patients (67%) completed follow-up questionnaires, of whom 80% were adherent. The risk of ICU admission was numerically lower in the evening dosing group among adherent patients (14/2,302 vs. 24/3,056, RR = 0.77, CI = (0.61-1.55), p = 0.55). At 12 months, ICU admissions were similar between groups (RR = 0.97, CI = (0.40-1.50), p = 1.00). Likewise, non-adherent patients showed no significant difference in ICU admissions between morning and evening dosing at 6 months or 12 months.

Conclusion: In this post hoc analysis of the LAMA BY NIGHT trial, evening administration of LAMA did not reduce the risk of ICU admissions among patients with COPD, and adherence to the assigned dosing schedule did not modify this association.

Keywords: COPD; adherence; circadian variation; intensive care admission; long-acting muscarinic antagonists (LAMA); randomized controlled trial.

Conflict of interest statement

N.D.J. reports personal fees from Sanofi. A.G.M reports personal fees from Sanofi and GSKJ.V. reports personal fees from GlaxoSmithKline, Chiesi Pharmaceuticals, Boehringer-Ingelheim, Novartis, and AstraZeneca.T.B.S. reports receiving grants from Sanofiduring the conduct of the study and grants from AstraZeneca, Bayer, Boston Scientific, GE Healthcare, GSK, Novartis, Novo Nordisk Pfizer, and Sanofi-Pasteur and personal fees from Amgen, AstraZeneca, Bayer, CSL Seqirus, GE Healthcare, GSK, IQVIA, Novartis, Parexel, and Sanofi outside the submitted work. No other disclo- sures were reported.

- 18 references
- 2 figures

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Chronic Obstr Pulm Dis

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. 2026 Aug 4.

doi: 10.15326/jcopdf.2026.0794. Online ahead of print.

Accuracy, Usefulness, and Impact Variability of ChatGPT-4 for COPD Medication Management: A Modified Delphi Study

Paul M Boylan [1], Devin L Lavender [2], Rebecca H Stone [2], Russ Palmer [2], Richard L Lamb [2 3], Kiley Merritt [2], Joshua Caballero [2]

Affiliations Expand

- PMID: 42552543

- DOI: 10.15326/jcopdf.2026.0794

Free article

Abstract

Background: Chronic obstructive pulmonary disease (COPD) management is complex and rapidly evolving. ChatGPT is a large language model (LLM) shown to generate treatment plans for chronic conditions, yet its accuracy, usefulness, and consistency for COPD remain poorly characterized. This study evaluated the accuracy, usefulness, and impact variability of simultaneous ChatGPT-4.0 responses to COPD medication management questions.

Methods: Five COPD treatment questions were simultaneously entered into three separate computers using ChatGPT-4.0 during a single session, generating 15 total responses. Three residency-trained, board-certified clinical pharmacists rated each response across three domains - accuracy, usefulness, and impact variability - using a 3-point ordinal scale (0 to 2) via a three-round modified Delphi process. Consensus was defined *a priori* as unanimous agreement among all three panelists.

Results: Of 45 response-domain ratings, consensus was achieved in 40 (88.9%). Accuracy ranged from poor (0) to good (2), usefulness from somewhat (1) to very useful (2), and impact variability from low (0) to high (2). For one question on stable COPD pharmacotherapy, all three simultaneous responses cited a retired clinical practice guideline, resulting in poor accuracy ratings. For two questions - treating exacerbations and managing a complex case - one response per question was rated higher in usefulness than the others.

Conclusion: Simultaneous ChatGPT-4.0 responses to identical COPD prompts differed materially in accuracy and potential clinical impact. LLM outputs should augment rather than replace clinician judgment and must be deployed with current guideline grounding and appropriate local oversight.

Keywords: COPD; ChatGPT; artificial intelligence; clinical decision-making; large language models.

Multicenter Study

Respir Res

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. 2026 Aug 4;27(1):300.

doi: 10.1186/s12931-026-03827-8.

Blood viscosity is associated with smoking status rather than the presence of chronic obstructive pulmonary disease: findings from the Korea COPD Subgroup Study (KOCOSS)

Ye Jin Lee[1], Hye-Rin Kang[2], Sang Hyuk Kim[3], Hyun Jung Kim[4], Jae Seung Lee[5], Chang-Hoon Lee[6], Sung Kyoung Kim[7], Yu-Il Kim[8], Kwang Ha Yoo[9], Youlim Kim[10]

Affiliations Expand

- PMID: 42552534

- PMCID: PMC13435482

- DOI: 10.1186/s12931-026-03827-8

Abstract

Background: The relationship between smoking and blood viscosity is well established. However, the role of blood viscosity in the development of chronic obstructive pulmonary disease (COPD) and its impact on lung function decline remains unclear. Therefore, we aimed to investigate the association of blood viscosity with COPD and lung function decline, independent of smoking status.

Methods: Data from 292 participants in the Korea COPD Subgroup Study (KOCOSS), a multicenter prospective cohort, were analyzed. Subjects were classified into four groups based on smoking history and COPD status. Multiple linear regression analysis was performed to determine the association between baseline viscosity and lung function decline after adjusting for age, sex, smoking status, and COPD status.

Results: Of the 292 participants, 93 (31.8%) patients had COPD. Ever smokers with or without COPD were older than never smokers and predominantly male. Never smokers with COPD reported the highest scores for the Modified Medical Research Council Dyspnea Scale. Blood viscosity was significantly higher in ever smokers (with COPD: 9.0 ± 1.4; without COPD 9.2 ± 1.5) than in never smokers (with COPD: 8.7 ± 1.8; without COPD: 8.4 ± 1.5). Viscosity did not differ significantly with the presence of COPD within the same smoking category. Adjusted multiple linear regression revealed that baseline blood viscosity was not associated with 2-year declines in forced expiratory volume in 1 s ($p = 0.557$), forced vital capacity ($p = 0.686$), or diffusing capacity of the lung for carbon monoxide ($p = 0.947$).

Conclusion: Blood viscosity appeared to be more closely associated with smoking-related hemorheological changes than with COPD. Its potential as a predictive biomarker for lung function decline appears to be limited, necessitating further long-term investigation.

Keywords: Blood viscosity; Chronic obstructive pulmonary disease; Lung function decline; Smoking.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study was approved by the Institutional Review Board of Konkuk University Hospital (IRB number: KUH1010338), which served as the main participating center, and by the Ethics Committee of each participating medical center. All participants provided written informed consent. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- **40 references**
- **2 figures**

Supplementary info

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Respir Med

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. 2026 Aug 4:109083.

doi: 10.1016/j.rmed.2026.109083. Online ahead of print.

Viewpoint: Pathway-Sensitive Eligibility for Biologic Therapy in COPD: The Role of Primary Care, Phenotyping, and Eosinophil-Guided Management

Konstantinos Bartziokas [1], Constantinos Glynos [2], Andriana I Papaioannou [3]

Affiliations Expand

- **PMID: 42551716**
- **DOI: 10.1016/j.rmed.2026.109083**

Abstract

There is currently increasing interest in the heterogeneity of airway inflammation in COPD, to implement precision medicine that individualizes treatment based on clinical and biological characteristics. The recognition of T2 inflammation is important, since it describes a distinct subgroup of COPD patients with different biological mechanisms, different clinical presentation,

accelerated lung function decline and increased exacerbation risk. Currently approved biological treatments refer to COPD patients, who experience frequent exacerbations despite triple therapy and also have elevated blood eosinophils, either with or without clinical manifestations of chronic bronchitis. In this viewpoint, we discuss how differences between primary care and hospital-based care pathways influence the identification of patients eligible for biologics. In primary care settings there is often delayed diagnosis, inconsistent exacerbation recording, suboptimal treatment with inhaled medication, and fragmented eosinophil monitoring. In contrast, hospital admissions often facilitate phenotyping and treatment escalation but may identify candidates only after severe exacerbations occur. Thus, biologic eligibility is highly pathway-sensitive, while standardized exacerbation documentation, eosinophil assessment, and optimization of maintenance therapy are essential for timely implementation of precision-guided COPD management. As COPD biologics emerge, recognition of eligibility remains pathway-sensitive and candidates may be missed or identified only after severe events. For this reason, we also present two different algorithms for the recognition of COPD patients eligible for biologics in primary care and in hospital settings.

Conflict of interest statement

Declaration of Competing Interest ☒ The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: None

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22

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Lung Function after Randomization to Metformin, Lifestyle Intervention or Placebo in the Diabetes Prevention Program Outcomes Study (DPPOS)

Carrie L Pistenmaa [1], Lindsay Doherty [2], Emilia A Hermann [3], Angela L Brown [4], Dana Dabelea [5], Fernando Holguin [6], Karol Watson [7], William C Knowler [8], Marinella Temprosa [2], R Graham Barr [9]; DPP Research Group

Affiliations Expand

- PMID: 42551713

- DOI: 10.1016/j.rmed.2026.109077

Abstract

Introduction: Metformin and physical activity have been suggested as beneficial for chronic lung disease; however, there are no prior randomized trials.

Methods: The Diabetes Prevention Program (DPP) was a 3-year trial that randomized 3,234 individuals at risk for diabetes to metformin, lifestyle intervention or placebo. After the DPP, 88% of participants enrolled in the DPP Outcomes Study that offered lifestyle intervention to all and open-label continuation of metformin. Spirometry was performed at approximately 19 and 22 years post-randomization. Lung function measures were compared in an intention-to-treat (ITT) analysis by original randomization group. Models were unadjusted and adjusted for demographics, body size, smoking and sitting/standing at spirometry. Additional analyses tested prevalence of obstruction (FEV_1/FVC <70%), restrictive pattern (FVC <LLN and FEV_1/FVC ≥70%), preserved ratio impaired spirometry (PRISm: FEV_1 <80% predicted, FEV_1/FVC ≥70%) and symptoms (COPD Assessment Test [CAT] score ≥10).

Results: The 1,888 participants with spirometry were a mean (±SD) age of 68.2±9.3 years, 70% female and 6% currently smoked and 33% had previously smoked cigarettes. Mean follow-up time was 19.0±0.8 years. The mean FEV_1 was 2.14±0.60 L, FVC 2.74±0.74 L, FEV_1/FVC 78.4±6.4%, mean BMI was 32.4±6.7 kg/m^2 and 58% had diabetes. In both unadjusted and adjusted ITT analyses, randomization group was not associated with FEV_1, FVC or FEV_1/FVC. Likewise, rates of obstruction, restrictive pattern, PRISm or symptoms did not differ by randomization group.

Conclusions: In this long-term follow-up after a randomized trial, we found no significant associations between randomization to metformin or lifestyle intervention and lung function or respiratory symptoms.

Conflict of interest statement

Declaration of Competing Interest ☒The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: CLP reports grants from the National Institutes of Health (NIH)/ National Heart, Lung, and Blood Institute (NHLBI) during the conduct of the study, research support from AstraZeneca and Sanofi, and participation on a Data Safety Monitoring Board for InflaRx Pharmaceuticals, InC and Verona Pharma. ALB reports consulting fees from Medtronic. DD reports grants from the NIH/ National Institute on Aging. WCK consulting to the DPPOS Coordinating Center, MT reports grants from the NIH, RGB reports grants from NIH/NHLBI, grants from the COPD Foundation and the American Lung Association, and is an unpaid member of the COPD Foundation Medical and Scientific Advisory Committee. LD, EH, FH, KW have no disclosures to report.

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Targeted Lung Denervation in COPD: The Need to Address Comorbid Contributors to Dyspnea

Zhican Liu[1], Li Peng[2], Mingyan Jiang[1]

Affiliations Expand

- **PMID: 42548191**

- **DOI: 10.1093/ajrccm/aamag263**

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Am J Respir Crit Care Med

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Limitations of the AIRFLOW-3 Trial: Targeted Lung Denervation in COPD

Bowen Zheng[1]

Affiliations Expand

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- **DOI: 10.1093/ajrccm/aamag260**

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Abstract

COPD ; TLD.

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Targeted Lung Denervation in COPD: Refining Phenotyping and Endpoints after AIRFLOW-3

Ningzi Zang[1,2], Lijian Pang[1,2], Xiaodong Lv[2]

Affiliations Expand

- PMID: 42548097

- DOI: 10.1093/ajrccm/aamag265

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Am J Respir Crit Care Med

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Targeted Lung Denervation in COPD: Phenotype-Specific Benefits and Procedure-Related Risks

Xi Zhang[1], Min Li[2], Tian Wang[1]

Affiliations Expand

- PMID: 42548090

- DOI: 10.1093/ajrccm/aamag261

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No abstract available

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J Ethnopharmacol

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. 2026 Aug 3:373:122265.

doi: 10.1016/j.jep.2026.122265. Online ahead of print.

Xiaoqinglong decoction suppresses M1 macrophage polarization in COPD via the MET/AKT/HK2 axis: An integrated multi-omics analysis

Furong Zhang[1], Jingzhe Gu[1], Yujing Li[1], Yao Zhang[1], Yuanyuan Chu[1], Haonan Qu[1], Fei Ge[1], Dongmei Zhang[2], Di Zhang[3], Meng Chen[4]

Affiliations Expand

- PMID: 42546823

- DOI: 10.1016/j.jep.2026.122265

Abstract

Ethnopharmacological relevance: Xiaoqinglong Decoction (XQLD), a classic herbal formula for respiratory diseases, is clinically effective against chronic obstructive pulmonary disease (COPD). However, whether its anti-inflammatory effects involve modulation of macrophage immunometabolism remains unknown.

Aim of the study: This study investigated whether XQLD suppresses M1 macrophage polarization in COPD by modulating glycolysis-related pathways.

Materials and methods: COPD was induced in rats by alternate intratracheal instillation of papain (Papa) and lipopolysaccharide (LPS). After modeling, the rats received XQLD at high, medium, and low doses, while a separate group received dexamethasone as the positive control. Therapeutic effects on pulmonary function and lung pathology were evaluated, along with M1 polarization by immunofluorescence and other assays. Core pathways were identified through transcriptomic-metabolomic integration. In vitro, XQLD-containing serum was used to treat THP-1-derived M1 macrophages, and M1 polarization, glycolytic indicators, and MET/AKT/HK2 pathway proteins were assessed following treatment with 2-DG, HK2 overexpression, or HGF.

Results: XQLD dose-dependently improved pulmonary function and lung pathology, and reduced M1 infiltration. Multi-omics identified MET and HK as central nodes; XQLD reversed aberrant MET/AKT/HK2 expression in vivo. In vitro, XQLD-containing serum inhibited M1 polarization, glycolytic flux, and HGF-induced MET/AKT/HK2 signaling, with its effects partially reversed by HK2 overexpression.

Conclusion: XQLD attenuates M1 macrophage-driven airway inflammation by normalizing the MET/AKT/HK2 signaling-metabolic axis and suppressing, at least in part, HK2-dependent glycolysis. These findings provide a novel immunometabolic mechanism for the traditional anti-inflammatory efficacy of XQLD in COPD.

Keywords: Chronic obstructive pulmonary disease; Glycolysis; M1 macrophage polarization; MET/AKT/HK2 pathway; Multi-omics; Xiaoqinglong decoction.

Conflict of interest statement

Declaration of competing interest The authors declare no competing interests.

Full text links

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Cite

28

J Asthma

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. 2026 Aug 3:1-10.

doi: 10.1080/02770903.2026.2701399. Online ahead of print.

Establishment of a multimodal respiratory function diagnostic model and its role in the differential diagnosis of bronchial asthma and chronic obstructive pulmonary disease with incomplete reversible airflow limitation

Peng Li[1], Li Sun[1], Chao Wang[2], Qingzhen Gao[1]

Affiliations Expand

- **PMID: 42473420**

- DOI: 10.1080/02770903.2026.2701399

Abstract

Objective: This retrospective diagnostic test aimed to explore a method that can differentiate asthma from COPD with incomplete reversible airflow limitation.

Methods: Patients diagnosed with asthma and COPD from June 19, 2024, to November 16, 2025, were enrolled as training samples. Intergroup data were analyzed through discriminant analysis to determine the quantitative diagnostic formula and the discriminant boundary value Z_c that could identify them. A portion of the patients collected in the same way were used as validation samples to verify the accuracy of the model.

Results: 128 patients with asthma and 142 with COPD were enrolled as training samples. Through discriminant analysis, the quantitative diagnostic formula was $Zi = 1.476X_1+0.348X_2-0.269X_3-0.465X_4+0.995X_5+0.046X_6+0.013X_7-4.479$ ($X_1 = 0$ and $X_1 = 1$ represent the absence or presence of the concave pattern in the F-V, respectively; X_2, X_3 and X_4 represent forced vital capacity, forced expiratory volume in 1s, and peak expiratory flow, as indicators of bronchodilation test, respectively, 0 = negative, 1 = positive; X_5 represents gender, $X_5 = 0$ indicates female, and $X_5 = 1$ indicates male; X_6 represents age; X_7 represents smoking index), and $Z_c = -0.0687$. The accuracy of the quantitative diagnostic formula, validated internally and externally using 121 patients, was 90.40% and 87.60%, respectively.

Conclusions: The multimodal respiratory function diagnostic model, utilizing discriminant analysis, can distinguish asthma with incomplete reversible airflow limitation from COPD when the strongest expiratory effort is performed with an extrapolated volume ≤0.10 L.

Keywords: Chinese Clinical Trial Registry (registration number: ChiCTR2400082672); Respiratory function test; discriminant analysis; flow-volume (F-V) curve; forced expiratory flow rate; spirometry.

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. 2026 Aug 5;41(8):59-65.

doi: 10.7748/ns.2026.e12712. Epub 2026 Jun 8.

Pulse oximetry: exploring its role, limitations and challenges in clinical practice

Richard Hatchett[1]

Affiliations Expand

- PMID: 42252668

- DOI: 10.7748/ns.2026.e12712

Abstract

Pulse oximetry is a non-invasive method of obtaining an indirect measure of a patient's peripheral oxygen saturation of haemoglobin in the blood (SpO 2), and is commonly used in acute and primary care settings. Obtaining an SpO 2 measurement involves the use of a pulse oximeter, which is typically attached to the patient's fingertip. This article describes how pulse oximetry works, discusses its limitations as a single metric and explores its applicability to the airway, breathing, circulation, disability and exposure (ABCDE) assessment approach and to the National Early Warning Score (NEWS) 2 'track and trigger' tool. The article also discusses the use of pulse oximetry in patients with chronic obstructive pulmonary disease and considers some of the challenges associated with its use, specifically in relation to skin integrity and patient comfort, skin tone, suboptimal peripheral circulation and the effects of nail polish on the accuracy of readings.

Keywords: cardiorespiratory; chronic obstructive pulmonary disease; clinical; early warning scores; nursing care; observations; patient assessment; respiratory.

Conflict of interest statement

None declared

Supplementary info

MeSH termsExpand

Full text links

Proceed to details

Cite

30

Randomized Controlled Trial

Eur Respir J

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. 2026 Aug 6;68(2):2501431.

doi: 10.1183/13993003.01431-2025. Print 2026 Aug.

Fentanyl or morphine for persistent dyspnoea in COPD: a multicentre randomised crossover trial

Marlies van Dijk[1,2], Kris J M Mooren[3], Wendy van Beurden-Moeskops[4], Roxane Heller-Baan[5], Sander M de Hosson[6], Remge M Pieterman[7], Wai Yee Lam-Wong[8], Liesbeth Peters[9], Karin Pool[10], Jan-Willem K van den Berg[11], Huib A M Kerstjens[12,2]

Affiliations Expand

- PMID: 42242759
- PMCID: PMC13446205
- DOI: 10.1183/13993003.01431-2025

Abstract

Background: One of the most prevalent and impactful symptoms in COPD is persistent dyspnoea, occurring in the majority of patients with advanced COPD. Opioids, mostly morphine, have been investigated and suggested as treatment in palliative care guidelines. However, in recent years multiple trials on morphine for persistent dyspnoea have shown no clinical benefit, and there are concerns regarding adverse events. Transdermal fentanyl has not yet been investigated for this indication.

Methods: We performed a multicentre, crossover, double-dummy randomised controlled trial, investigating transdermal fentanyl (12 μg·h^{-1}), morphine (10 mg *per os* twice daily) and placebo, during three treatment periods of 2 weeks (including a 3-day washout period). Patients with persistent dyspnoea despite optimal therapy and modified Medical Research Council dyspnoea scale score ≥3 caused by COPD, forced expiratory volume in 1 s (FEV_1) <50% predicted and stable disease were included. The primary end-point was change in mean daily dyspnoea score on a Numeric Rating Scale (NRS). Secondary outcomes were change in worst daily dyspnoea (NRS), health status (Clinical COPD Questionnaire), anxiety (Hospital Anxiety and Depression Scale-Anxiety), hypercapnia (capillary blood gas), mastery (Chronic Respiratory Questionnaire-Mastery) and sleep quality (NRS).

Results: Between April 2019 and November 2024, 59 randomisations were performed in 58 participants (mean±sd 69±7 years; 54% female; FEV_1 33±10% predicted); 37 participants completed the study. The main reasons for study discontinuation were exacerbations (n=13) and side-effects (n=7). There were no significant differences between both fentanyl and morphine compared to placebo for mean and worst dyspnoea, sleep, health status, mastery, anxiety, hypercapnia or side-effects (except for a possible difference in vomiting).

Conclusion: This study demonstrated no positive effect of transdermal fentanyl nor oral morphine compared to placebo in the treatment of persistent dyspnoea in COPD.

Conflict of interest statement

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

Comment in

- Opioids for persistent dyspnoea in people with COPD: should we throw in the towel?

Bourbeau J, Currow D.Eur Respir J. 2026 Aug 6;68(2):2600834. doi: 10.1183/13993003.00834-2026. Print 2026 Aug.PMID: 42562599 No abstract available.

- 34 references
- 3 figures

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links

Proceed to details

Cite

31

Eur Respir J

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. 2026 Aug 6;68(2):2501348.

doi: 10.1183/13993003.01348-2025. Print 2026 Aug.

Postural relief of dyspnoea is associated with improved neuromechanical coupling in patients with advanced COPD

Amany F Elbehairy[1,2], Azmy Faisal[3,4], Hannah McIsaac[5], Matthew D James[5], Nicolle J Domnik[5,6], J Alberto Neder[5], Denis E O'Donnell[5]

Affiliations Expand

- PMID: 41956700

- DOI: 10.1183/13993003.01348-2025

Abstract

Background: Patients with advanced COPD often report that adopting a specific body posture improves their dyspnoea. Exploring the underlying mechanisms could enhance our understanding of the origin of this symptom and approaches towards its alleviation.

Methods: Pulmonary function tests and detailed sensory-mechanical measurements, including gastro-oesophageal catheter-based crural diaphragm electromyography (surrogate for inspiratory neural drive (IND)) and respiratory manometry, were performed in 16 patients (nine males; mean±sd age 66±7 years) with advanced COPD (mean±sd forced expiratory volume in 1 s 36±16% predicted and residual volume/total lung capacity 55±11%) while adopting their most favourable (MF) and least favourable (LF) postures.

Results: The MF postures included sitting upright (56%), sitting with arms on knees in a forward-leaning position (25%), standing (13%) and lying with three pillows (6%). About two-thirds of patients choose the supine posture as the LF posture. There were no significant differences in minute ventilation and inspiratory capacity between MF and LF postures ($p>0.05$). Compared to LF postures, MF postures were associated with 1) increased dynamic lung compliance, 2) lower transdiaphragmatic pressures and 3) reduced total work of breathing, leading to 4) decreased IND to the diaphragm and 5) improved neuromechanical and neuroventilatory coupling (all $p<0.05$). The decrease in the "difficulty breathing in" dyspnoea qualifier when assuming the MF posture correlated with corresponding improvements in neuromechanical dissociation ($r=0.62$, $p=0.01$) and neuroventilatory dissociation ($r=0.57$, $p=0.02$).

Conclusion: Healthcare professionals should evaluate the benefits of positional therapy for reducing dyspnoea in patients with COPD. Incorporating postural interventions into rehabilitation or using them at night may help lessen symptoms and improve quality of life.

Conflict of interest statement

Conflict of interest: J.A. Neder reports research funding from Queen's University through the Canadian Institutes of Health Research, the Physicians Services Incorporated Foundation, the Canadian Respiratory Research Network, AstraZeneca and Boehringer Ingelheim, and has also served on speaker bureaus, consultation panels and advisory boards for AstraZeneca, GSK, Chiesi, Sanofi and Boehringer Ingelheim, and is a member of the European Respiratory Journal Editorial Board. The funders had no role in the study design, data collection, analysis or manuscript preparation. A.F. Elbehairy, A. Faisal, H. McIsaac, M.D. James, N.J. Domnik and D.E. O'Donnell report no conflicts of interest.

Comment in

- **Postural relief of dyspnoea in advanced COPD: a step towards personalised symptom management.**

Laveneziana P, Le Mélédo M, Boyle KGPJM.Eur Respir J. 2026 Aug 6;68(2):2601029. doi: 10.1183/13993003.01029-2026. Print 2026 Aug.PMID: 42562601 No abstract available.

Supplementary info

MeSH termsExpand

Full text links

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

1

Review

J Multimorb Comorb

. 2026 Aug 5:16:26335565261458448.

doi: 10.1177/26335565261458448. eCollection 2026 Jan-Dec.

Multimorbid heart failure (HF) and cardiorenal metabolic (CaReMe) syndrome, exploring integrated models of care: A scoping review

Joanna Lavery[1], Clare Van Miert[1], Lyndsey McCunnell[1], Julie Ann Hayes[1], Karen Higginbotham[1], Ian Jones[1]

Affiliations Expand

- PMID: 42568773

- PMCID: PMC13447997

- DOI: 10.1177/26335565261458448

Abstract

Background: Heart failure (HF) remains a global cause of morbidity and mortality and is increasingly complex to manage due to high prevalence of multimorbidity and coexisting cardiorenal and metabolic (CaReMe) syndrome. Individualised care through integrated service models can improve quality and maximise patient outcomes. This scoping review identifies and synthesises models of integrated care for multimorbid HF and CaReMe syndrome, analysing organisation, implementation, and reported outcome measures.

Methods: A systematic search was conducted in MEDLINE, PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), COCHRANE library, and grey literature. Eligible studies included primary research published between 2014 and 2025 describing integrated, multispecialty, or multidisciplinary team (MDT) models of care for adults with multimorbid HF and CaReMe disease. The search followed PRISMA-ScR reporting standards and studies reviewed using standardised tools informed by Joanna Briggs Institute (JBI) and Cochrane Collaborations Tool methodologies.

Results: Five studies were identified from upper-middle and high-income countries that incorporated MDT integrated care models. Models were mapped to the Effective Practice and Organisation of Care (EPOC) framework explaining key components of integrated care. Positive outcomes included reduced hospitalisations, improved treatment adherence, enhanced collaborative processes, and patient engagement. Limited governance structures, variable outcome measures, gaps in financial and technological evaluations were also identified.

Conclusion: Integrated care models for multimorbid HF and CaReMe syndrome demonstrate potential to enhance care coordination and quality of life. Evidence gaps persist regarding practical implementation, economic viability, and flexibility across healthcare settings. Future

research should prioritise patient co-design, standardised outcomes, and shared decision-making frameworks.

Keywords: cardiorenal and metabolic syndrome; heart failure; integrated care models; multidisciplinary team; multimorbidity.

Conflict of interest statement

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

- 99 references

Supplementary info

Publication typesExpand

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Cite

2

Health Care Manag Sci

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. 2026 Aug 7;29(3):40.

doi: 10.1007/s10729-026-09785-3.

Cluster analysis to identify targeted interventions for highly multimorbid patients in a one-million population in England

Richard M Wood[1 2], Peter M Thomson[3], Sam T Creavin[3 4]

Affiliations Expand

- PMID: 42566017

- DOI: 10.1007/s10729-026-09785-3

Abstract

Whole population segmentation can be a valuable asset to help understand the general distribution of health needs and healthcare utilisation within a population. In the one million resident health system in and around Bristol (UK), existing work has revealed a five-segment model of the adult population in which, with worsening health, segments halve in size and double in per-person spend. The top segment contains approximately 3% of the population but consumes over one-fifth of healthcare spend. With poor health outcomes and large costs, this

high-multimorbidity cohort presents an opportunity to improve the 'value' extracted from available healthcare resources. Clinical management interventions considered for application to this segment should, however, appreciate its high heterogeneity with respect to health need, healthcare usage, and demographic and social characteristics. To support the identification of appropriately tailored interventions, we further partition this segment using cluster analysis (specifically, hierarchical density-based clustering following dimensionality reduction). This yields six clusters which, based on their defining features, are named: Older without dementia (n = 1,243); Cancer (n = 1,055); Younger and complex (n = 2,199); Respiratory (n = 4,743); Cardiovascular (n = 6,140); Dementia (n = 4,579). Following clinical review, each cluster is provided with a value-based objective, to improve outcomes and/or reduce costs. Additionally, a targeted set of possible clinical management interventions is suggested. This paper helps to address a deficit within the current literature of clinically contextualised clustering studies of highly multimorbid individuals.

Keywords: Cluster analysis; Clustering; Multimorbidity; Population segmentation.

Conflict of interest statement

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

- 93 references

Supplementary info

MeSH termsExpand

Full text links

Proceed to details

Cite

3

J Am Med Inform Assoc

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. 2026 Aug 6:ocag135.

doi: 10.1093/jamia/ocag135. Online ahead of print.

Explainable temporal machine learning of multimorbidity trajectories after acute myocardial infarction: complementing clinical risk scores with mechanistic phenotypes

Anthony Onoja [1], Kris Elomaa [1], Anthony D Whetton [2], Nophar Geifman [1]

Affiliations Expand

- PMID: 42562770

- DOI: 10.1093/jamia/ocag135

Abstract

Objective: This study aimed to identify trajectories of multimorbidity following acute myocardial infarction (AMI), using explainable temporal machine-learning methods, and assess their clinical, prognostic, and biological significance.

Materials and methods: Dynamic Time Warping k-means clustering was applied to post-AMI diagnostic sequences from 12 701 UK-Biobank participants. Latent Dirichlet Allocation characterised cluster themes. Multiclass classifiers (CatBoost, XGBoost, random forest, logistic regression) trained on pre-AMI diagnoses and demographics predicted trajectory membership, with SHAP interpretability. SMART scores and Cox models evaluated 5-year mortality; Phenotype-Wide Association (PheWAS) and Reactome pathway enrichment were used to identify associated biological mechanisms.

Results: Three trajectories of multimorbidity were identified: acute cardiorenal-respiratory with metabolic disease (ACUTE-CARD; 63.4%), cardiometabolic disease with arrhythmic-ischemic burden (CARDIOMIX; 13.5%), and smoking-related multisystem multimorbidity (SMO-CARD; 23.1%). XGBoost achieved the highest discrimination (AUC-ROC 0.906; 95% CI, 0.895-0.916), with CatBoost showing comparable performance (AUC-ROC 0.900; 95% CI, 0.889-0.910). SMO-CARD had the highest 5-year mortality (43.9%). The established SMART cardiovascular risk score remained the dominant predictor of mortality while the identified trajectories provided complementary prognostic signals; these associations were weaker after full adjustment for potential confounders with each profile displaying distinct genetic and pathway signatures.

Discussion: The SMART score outperformed in capturing mortality risk, whereas the trajectories complement it by revealing nuanced clustering of risk factors across organ systems and in identifying trajectory-specific intervention priorities.

Conclusion: Explainable temporal modeling of EHR data reveals clinically interpretable, biologically grounded multimorbidity trajectories after AMI that complement established risk scores and provide a reproducible approach to mechanistic phenotyping and precision care.

Keywords: cluster analysis; machine learning; multimorbidity; myocardial infarction; risk stratification.

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. 2026 Aug 5;6(8):e0006720.

doi: 10.1371/journal.pgph.0006720. eCollection 2026.

Tuberculosis comorbidities, multimorbidity and mortality amongst adults in South Africa: A prospective cohort study nested in a trial

Greta K Wood[1 2 3], Rachel L Byrne[1], Limakatso Lebina[4 5], Eve Worrall[1 6], Pattamukkil Abraham[4], Emily L Webb[7], Peter MacPherson[8], Neil A Martinson[4], Tom Wingfield[1 3 9]

Affiliations Expand

- PMID: 42555616

- PMCID: PMC13440854

- DOI: 10.1371/journal.pgph.0006720

Abstract

Tuberculosis (TB) comorbidities and multimorbidity - the presence of two or more concurrent diseases or health conditions - are major contributors to TB incidence and mortality. We investigated the prevalence and associated mortality of TB comorbidities and multimorbidity in South Africa. We conducted a prospective cohort study of adults ≥15 years with bacteriologically-confirmed pulmonary TB, nested within a trial in two provinces of South Africa. We investigated five TB key comorbidities (HIV, undernutrition, diabetes, smoking and alcohol use), and assessed all-cause mortality over 15 months using Cox regression. TB comorbidity was defined as TB with one comorbidity, and TB multimorbidity as TB with two or more comorbidities. Of 1997 participants, 1896 (95%) had mortality data available at 15 months. Median age was 38 (IQR 29-48) years, 1203/1997 (60%) were male, 86·2% (95% CI 84·6-86·6) had TB comorbidity and 47·5% (45·3-49·7) had TB multimorbidity. TB comorbidity peaked in participants aged 40-49 years (93% [90-95]), was more prevalent in men vs women (90%[88-91] vs 81%[78-84], p < 0·001), and in urban vs rural areas (88%[86-90] vs 84%[81-86], p = 0·005). Mortality was higher for participants with TB multimorbidity with two (16·0%[13·0-18·8], HR 1·88[1·20-2·95], p = 0·006) and three or more (19·9%[14·9-24·6], HR 2·58[1·56-4·24], p < 0·001) TB key comorbidities than those with no comorbidities (11·2%[7·17-15·0]) or TB comorbidity (10·6% [8·32-12·8]). The joint population attributable fraction for the TB key comorbidities on mortality was 60·0% (49·6-69·2%). TB comorbidities and multimorbidity are highly prevalent and significantly associated with mortality. People with TB should be offered screening and management of comorbidities to reduce their risk of death.

Conflict of interest statement

I have read the journal's policy and the authors of this manuscript have the following competing interests: NM's institution received an unrelated research grant from Pfizer at the time this study was enrolling. TW receives ad hoc consultancy fees from WHO Geneva and WHO Nepal Office for advising on National TB Patient Cost Surveys including in Nepal. TW was awarded funding from

the MRC to attend the MRC Southeast Asia Networking event in February 2024, which includes economy travel, accommodation, and food expenses. Other authors declare no interests.

- 36 references
- 4 figures

Full text links

Proceed to details

Cite

5

Comment

Heart Vessels

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. 2026 Aug 5.

doi: 10.1007/s00380-026-02741-9. Online ahead of print.

Interleukin-6 in acute heart failure: A marker of phenotype-specific biology or multimorbidity?

Güney Sarıoğlu [1], Ertuğrul Kurtoğlu [2]

Affiliations Expand

- PMID: 42552413

- DOI: 10.1007/s00380-026-02741-9

No abstract available

Conflict of interest statement

Declarations. Conflict of interest: The authors declare no conflict of interest.

Comment on

- Differential prognostic impact of interleukin-6 in acute heart failure with reduced versus preserved ejection fraction.

Kishihara M, Minami Y, Hattori H, Haruki S, Yamaguchi J.Heart Vessels. 2026 Jun 30. doi: 10.1007/s00380-026-02723-x. Online ahead of print.PMID: 42380304

- 10 references

Supplementary info

Publication typesExpand

Full text links

Proceed to details

Cite

6

Evid Based Nurs

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. 2026 Aug 3:ebnurs-2026-104727.

doi: 10.1136/ebnurs-2026-104727. Online ahead of print.

Missing from the evidence: why multimorbidity under-representation in clinical trials is a nursing issue

Philip Boadu Anim [1], Irene F Bossman [2]

Affiliations Expand

- PMID: 42547307

- DOI: 10.1136/ebnurs-2026-104727

No abstract available

Keywords: Evidence-Based Nursing; Nursing; Nursing Research; Nursing Staff.

Conflict of interest statement

Competing interests: None declared.

Full text links

Proceed to details

Cite

7

Review

Circulation

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. 2026 Aug 4;154(5):e206-e230.

doi: 10.1161/CIR.0000000000001437. Epub 2026 Jun 18.

Strategies for Optimizing Heart Failure Care in the Older Adult: A Scientific Statement From the American Heart Association

Sabra C Lewsey, Trejeeve Martyn, Vanessa Blumer, Nicholas K Brownell, Quin E Denfeld, Shannon M Dunlay, Parag Goyal, Shannon Halloway, Daniel Matlock, Orly Vardeny, Harriette G C Van Spall; American Heart Association Cardiovascular Disease in Older Populations Committee of the Council on Clinical Cardiology and Council on Cardiovascular and Stroke Nursing; Council on Basic Cardiovascular Sciences; Council on Lifelong Congenital Heart Disease and Heart Health in the Young; Heart Failure and Transplantation Committee of the Council on Clinical Cardiology

- PMID: 42312386

- DOI: 10.1161/CIR.0000000000001437

Free article

Abstract

Heart failure prevalence is increasing and has a disproportionate burden on older adults. Older adults, however, may encounter unique challenges in accessing and navigating comprehensive disease-modifying, guideline-directed therapies, thus limiting use among those at highest risk of cardiovascular death or worsening heart failure. Care of the older adult with heart failure requires tailored treatment plans to overcome barriers to effective therapies in this population. This scientific statement reviews the literature on care optimization for older adults (≥65 years of age) living with heart failure and highlights strategies for clinicians who aim to deliver patient-centered, evidenced-based heart failure care in the context of common comorbidities seen in older adults. We discuss the consistent treatment effect and safety profiles of guideline-directed therapies for heart failure in older adults and how to manage multimorbidity, polypharmacy, frailty, and social needs using a shared decision-making framework. In consideration of the complexity of heart failure care of the older adult, we highlight a structured framework for therapeutic considerations in the context of benefit-to-risk ratio, multimorbidity, and social needs. We offer practical guidance on the care of older adults with advanced comorbidities who may not have been adequately represented in landmark trials. We also consider implementation strategies, health services interventions, and supportive tools that may foster optimal care in older adults with heart failure. This work is aimed at informing the practice of clinicians and health systems alike to improve outcomes and to reduce the morbidity of heart failure in older adults.

Keywords: AHA Scientific Statements; health services; heart failure; multimorbidity; patient-centered care.

Supplementary info

Publication types, MeSH termsExpand

Full text links

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

Eur J Intern Med

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. 2026 Aug 8:107114.

doi: 10.1016/j.ejim.2026.107114. Online ahead of print.

Comparable 1-year effectiveness of tezepelumab and dupilumab after anti-IL-5/IL-5Rα biologic failure in severe asthma

Po-Cheng Shih [1], Shih-Pin Chen [2], James Cheng-Chung Wei [3]

Affiliations Expand

- PMID: 42570933

- DOI: 10.1016/j.ejim.2026.107114

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

Publication typesExpand

Full text links

Proceed to details

Cite

2

J Allergy Clin Immunol Pract

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. 2026 Aug 8:S2213-2198(26)00637-9.

doi: 10.1016/j.jaip.2026.07.040. Online ahead of print.

Pulmonary rehabilitation combining education and exercise training in adults with asthma: a systematic review and meta-analysis of clinical outcomes and program duration effects

Paula Regalado-Cabello[1], Beatriz Brea-Gómez[2], Laura Pérez-Gisbert[3], María Teresa Soriano-Gómez[4], Irene Torres-Sánchez[5]

Affiliations Expand

- PMID: 42570790

- DOI: 10.1016/j.jaip.2026.07.040

Abstract

Background: Pulmonary rehabilitation (PR) has been widely studied and established as an effective intervention in several chronic pulmonary diseases. Nevertheless, evidence in adults with asthma remains inconclusive.

Objective: . To assess the efficacy of PR, including at least education and exercise training (ET), in adults with asthma.

Methods: . This systematic review followed PRISMA guidelines. Four databases were searched from inception to November 2025. We included randomized clinical trials in adults with asthma who underwent a PR intervention compared to other interventions (including PR within education and ET components), usual care, or no intervention. Primary outcomes were asthma control, lung function, exercise capacity, and airway inflammation. Certainty of evidence and risk of bias were assessed.

Results: . Sixteen studies were included, and thirteen in at least one meta-analysis. Most studies enrolled moderate-to-severe asthma. Meta-analysis results showed significant differences in favor of PR in asthma control, exercise capacity, quality of life, anxiety, and depression compared to control group (CG). PR showed significant differences at short-term follow-up in asthma control and quality of life. No significant differences were observed for lung function, airway inflammation, physical activity levels, and body composition. Most studies had a high risk of bias, and the certainty of evidence was very low for some outcomes.

Conclusions: . PR improved asthma control, exercise capacity, quality of life, anxiety, and depression in adults with asthma compared to CG. Nevertheless, these findings should be interpreted cautiously because of the high risk of bias, low certainty of evidence for some outcomes, and uncertainty in sensitivity analyses.

Keywords: asthma; asthma control; education; exercise capacity; exercise training; lung function; pulmonary rehabilitation.

. 2026 Aug 8:aamag413.

doi: 10.1093/ajrccm/aamag413. Online ahead of print.

The Renaissance of Bronchiectasis

Miguel Angel Martinez-Garcia[1], Anne B Chang[2 3], Sanjay H Chotirmall[4 5], Gregory Tino[6]

Affiliations Expand

- PMID: 42569927

- DOI: 10.1093/ajrccm/aamag413

Abstract

Bronchiectasis now has an expanding landscape with a research growth rate exceeding that of asthma and COPD (9). We have summarized the top ten major shifts in domains of this landscape. In addition to the gaps mentioned above, further growth also needs to focus on prevention and ensure that consumers and underserved populations are included to strengthen equity (including in medication and RCT access), enhance relevance, and translate advances into meaningful improvements in care and outcomes for both children and adults with bronchiectasis.

Keywords: Bronchiectasis; adults; children; history.

Rev Mal Respir

. 2026 Aug 7:S0761-8425(26)00041-0.

doi: 10.1016/j.rmr.2026.06.003. Online ahead of print.

[The key role of chest CT in severe asthma phenotyping]

[Article in French]

M-P Debray[1], C Taillé[2]

Affiliations Expand

- PMID: 42567805

- DOI: 10.1016/j.rmr.2026.06.003

Abstract

Before initiating biological therapy, chest CT is indicated as a means of initial evaluation of severe asthma. While its primary role is to identify potential differential diagnoses, it concomitantly provides information effectively contributing to asthma phenotyping. In routine practice, analysis focuses on bronchial wall thickening, of which the extent correlates with disease severity and degree of bronchial obstruction. In cases of severe asthma, absent wall thickening is unusual, and may prompt a search for either an alternative diagnosis, or potential comorbidities such as rhinosinusitis, which may be symptomatic. Assessment of expiratory air trapping is useful in the event of fixed obstructive ventilatory impairment, of which the extent correlates with the degree of bronchial obstruction. Pathobiology of mucus plugs, a phenotyping tool regarding T2 inflammation and a marker of severity, has recently drawn increased interest. The density of these plugs should be analysed, given that spontaneous hyperattenuation, most often within dilated bronchi, facilitates establishment of the diagnosis of allergic bronchopulmonary aspergillosis. To sum up, investigation of bronchial wall thickening, expiratory air trapping, and mucus plugs represent potential means of assessing treatment response.

Keywords: Asthma; Asthme; Inflammation T2; Mucus; Phenotype; Phénotype; T2 inflammation; Tomodensitométrie; Tomography; X-ray computed.

Conflict of interest statement

Déclaration de liens d'intérêts Au cours des 5 dernières années, Marie-Pierre Debray a perçu des honoraires ou financements pour communications/activités de formation de la part des Laboratoires GlaxoSmithKline. Au cours des 5 dernières années, Camille Taillé a été Investigatrice pour les laboratoires AstraZeneca, GSK, Sanofi, Celltrion, a eu des activités d'expertise ou de conseil pour les laboratoires AstraZeneca, GSK, Sanofi, Chiesi, Stallergenes, LeoPharma.

Supplementary info

Publication typesExpand

Full text links

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Cite

5

BMJ Open Respir Res

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. 2026 Aug 4;13(1):e004245.

doi: 10.1136/bmjresp-2026-004245.

Parental asthma and childhood asthma phenotypes: maternal associations with persistent asthma

Marianne Rørholt Grefslie[1,2], Siri Eldevik Håberg[3,4], Maria C Magnus[3], Tone K Omsland[5], Per Magnus[3]

Affiliations Expand

- PMID: 42551975

- PMCID: PMC13448598

- DOI: 10.1136/bmjresp-2026-004245

Abstract

Background: Maternal asthma has been more strongly associated with asthma in offspring than paternal asthma, but the influence of parental asthma on distinct asthma phenotypes remains unclear.

Methods: We studied 16 055 children from the Norwegian Mother, Father and Child Cohort Study (MoBa). Parental asthma was reported at recruitment and classified as no parental asthma (reference), maternal asthma only, paternal asthma only or both parents with asthma. Offspring asthma was assessed at ages 3, 7 and 14 years through questionnaire-based parental reports, and four phenotypes were defined: never asthma, early-onset transient, early-onset persistent and late-onset asthma. Logistic regression was used to estimate associations between parental asthma status and offspring phenotypes, adjusting for sociodemographic, lifestyle and atopic factors, including atopic eczema and pollen/hay fever.

Results: Offspring asthma phenotypes were distributed as follows: never asthma 88.8%, early-onset transient asthma 3.3%, early-onset persistent asthma 2.7% and late-onset asthma 5.2%. Maternal asthma was associated with increased odds of all offspring asthma phenotypes: early-onset transient asthma (OR 2.09, 95% CI 1.52 to 2.88), early-onset persistent asthma (OR 3.47, 95% CI 2.56 to 4.71) and late-onset asthma (OR 2.18, 95% CI 1.69 to 2.81). Paternal asthma showed similar associations, although point estimates were generally smaller: early-onset transient asthma (OR 2.01, 95% CI 1.48 to 2.73), early-onset persistent asthma (OR 2.49, 95% CI 1.81 to 3.44) and late-onset asthma (OR 1.85, 95% CI 1.44 to 2.38). Asthma in both parents was most strongly associated with early-onset persistent asthma (OR 5.34, 95% CI 2.86 to 9.98), whereas associations with early-onset transient and late-onset asthma were smaller and

accompanied by wider CIs. The overall pattern of associations was similar across analyses stratified by parental atopy.

Conclusions: Associations with maternal asthma were more pronounced than those with paternal asthma, particularly for early-onset persistent and late-onset phenotypes, although CIs overlapped for most comparisons. In contrast, early-onset transient asthma showed less differentiation by parental asthma status.

Keywords: Asthma; Asthma Epidemiology; Paediatric asthma.

Conflict of interest statement

Competing interests: None declared.

- 41 references
- 1 figure

Supplementary info

MeSH termsExpand

Full text links

Proceed to details

Cite

6

Environ Health Perspect

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. 2026 May 4;134(4):386-396.

doi: 10.1021/EHP.6c00128. eCollection 2026 Aug 4.

Source-Specific Air Pollution and Risk of Chronic Obstructive Pulmonary Disease: A Pooled Cohort Study

Manuella Lech Cantuaria[1,2], Aslak Harbo Poulsen[1], Ole Raaschou-Nielsen[1,3], Étienne Audureau[4,5], Ralph Epaud[4,6,7], Sophie Lanone[4], Jørgen Brandt[3,8], Lise Marie Frohn[3], Matthias Ketzel[3], Anja Olsen[9,10], Lau Caspar Thygesen[11], Mette Sørensen[1,12]

Affiliations Expand

- PMID: 42564909

- PMCID: PMC13445269

- DOI: 10.1021/EHP.6c00128

Abstract

Background: The evidence linking long-term exposure to air pollution and the development of chronic obstructive pulmonary disease (COPD) is still controversial. Furthermore, most studies have investigated associations with particulate matter (PM) and nitrogen dioxide (NO_2), disregarding their emission source and other relevant air pollutants, such as ultrafine particles (UFP) and elemental carbon (EC).

Objectives: This study aimed to assess associations between long-term residential exposure to $PM_{2.5}$, NO_2, UFP, and EC and the risk of COPD, distinguishing the effects of air pollution from local traffic and other sources.

Methods: We pooled data from two large Danish cohorts, the Diet, Cancer, and Health cohort and the Danish National Health Survey. For all participants (*N* = 159,769), we estimated long-term air pollution exposure to total, local traffic, and other contributions, based on complete address histories. We used Cox proportional hazards models to estimate associations between 10-year time-weighted averaged air pollution and incident COPD, adjusting for demographic, socioeconomic, and lifestyle factors, including smoking. We evaluated the possible modification of these associations by sex, smoking status, and previous asthma diagnosis.

Results: Long-term exposures to $PM_{2.5}$, NO_2, UFP, and EC were associated with higher risk of COPD. The highest hazard ratio (HR) per interquartile range of total contributions was observed for $PM_{2.5}$ (HR: 1.11 [95% confidence interval: 1.05, 1.17]), followed by NO_2 (1.08 [1.04, 1.13]), UFP (1.05 [0.99, 1.11]), and EC (1.02 [1.00, 1.05]), after full adjustment. $PM_{2.5}$ from other sources than local traffic was more strongly associated with COPD than $PM_{2.5}$ from local traffic, while for UFP and EC, the contributions from local traffic seemed to be the most harmful. Effect modification analyses showed stronger associations among women, never smokers, and those with an asthma diagnosis.

Discussion: Our findings suggest that air pollution from local traffic and other sources contributes to COPD risk, with variations depending on the pollutant type. Further research is needed to validate these findings across different populations and geographical settings.

- 77 references
- 4 figures

Supplementary info

MeSH terms, SubstancesExpand

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7

J Allergy Clin Immunol Pract

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. 2026 Aug 6:S2213-2198(26)00636-7.

doi: 10.1016/j.jaip.2026.07.039. Online ahead of print.

Small Airways Disease predicts exacerbation risk in well-controlled, but not in poorly-controlled asthma: a post-hoc analysis of the ATLANTIS study

Stanley P Galant [1], Tatiana Karp [2], Pauline J M Kuks [2], Monica Kraft [3], Salman Siddiqui [4], Leonardo M Fabbri [5], Bianca Beghé [6], Klaus F Rabe [7], Alberto Papi [8], Chris Brightling [9], Dave Singh [10], Janwillem W H Kocks [11], Ulrica Scaffidi-Argentina [12], Alessio Piraino [12], Marcello Cottini [13], Rory Chan [14], Maarten van den Berge [15]

Affiliations Expand

- PMID: 42562347

- DOI: 10.1016/j.jaip.2026.07.039

No abstract available

Keywords: Asthma; Impulse Oscillometry; Small Airways Dysfunction.

8

J Allergy Clin Immunol Pract

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. 2026 Aug 6:S2213-2198(26)00633-1.

doi: 10.1016/j.jaip.2026.07.036. Online ahead of print.

Development of the LAQ-6: a questionnaire for assessing long-term asthma control

Yusuke Kurosawa [1], Yasuhiro Gon [2], Eiko Ukiya [3], Michio Kawamura [4], Ryosuke Ozoe [5], Shiho Yamada [6], Yutaka Kozu [7], Takashi Oki [8], Tetsuo Shimizu [9], Motoyasu Iikura [10], Shuichiro Maruoka [11], Kenji Mizumura [12]

Affiliations Expand

- PMID: 42562345

- DOI: 10.1016/j.jaip.2026.07.036

Abstract

Background: Existing asthma questionnaires rely on short recall periods and may not capture symptom burden across typical follow-up intervals. A brief instrument that summarizes longer-term asthma control may support risk stratification and remission-oriented care.

Objective: To develop a brief questionnaire that assesses symptom burden over a 3-month recall period and evaluate its performance in identifying ACT-defined well-controlled asthma.

Methods: Ninety adults with asthma completed our questionnaire, the 6-item Long-term Asthma Control Questionnaire (LAQ-6), and the Asthma Control Test (ACT) in an outpatient setting. Correlation and receiver operating characteristic curve (ROC) analyses were performed to evaluate associations with ACT-defined well-controlled status (ACT ≥20). Confirmed exacerbations and emergency visits over an approximately 6-month observation window were assessed using ROC analyses and prespecified cutoffs.

Results: The LAQ-6 strongly correlated with the ACT (r = 0.79, P < .001) and asthma-related quality of life assessed using mean Asthma Quality of Life Questionnaire scores (Spearman's rho = 0.763, P < .001). It achieved an area under the curve (AUC) of 0.83 in identifying ACT-defined well-controlled status (ACT ≥20) (95% confidence interval, 0.72-0.94). For 6-month outcomes, the LAQ-6 achieved higher AUCs than the ACT for exacerbations (0.866 vs. 0.816) and emergency visits (0.857 vs. 0.676). Exacerbations and emergency visits were more frequent in patients with LAQ-6 scores below the prespecified cutoff (<27).

Conclusions: The LAQ-6 is a brief 3-month recall questionnaire complementing existing short-recall tools. It may facilitate rapid assessment of longer-term symptom burden and risk stratification in outpatient practice, supporting evaluation of clinical remission.

Keywords: Asthma Control Test; asthma; asthma control; emergency visit; exacerbation; long-term control; patient-reported outcomes; quality of life; questionnaire; remission.

9

Review

Ann Allergy Asthma Immunol

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. 2026 Aug 6:S1081-1206(26)00383-2.

doi: 10.1016/j.anai.2026.07.030. Online ahead of print.

[Obesity, Asthma and Allergy Triangle: The Solution could be the Diet]

Serena Coppola [1], Alessandra Agizza [2], Raffaele Federico Iorio [2], Laura Carucci [2], Franca Oglio [2], Erika Caldaria [2], Alessia Cadavere [2], Roberto Berni Canani [3]

Affiliations Expand

- PMID: 42562282

- DOI: 10.1016/j.anai.2026.07.030

Abstract

Obesity, asthma, and allergic diseases are among the major chronic non-communicable diseases that are rapidly increasing worldwide. These conditions are often interconnected, sharing common epidemiological trends and pathophysiological mechanisms. In pediatric populations, substantial epidemiological evidence demonstrates that obesity is associated with an increased risk of asthma and certain allergic diseases, as well as with greater disease severity, poorer control, and reduced quality of life. Importantly, these associations may originate early in life, with maternal obesity acting as a critical driver of offspring susceptibility. Multiple mechanisms underlie this complex interplay, including chronic low-grade inflammation, adipokine dysregulation, and gut microbiota and intestinal epithelial barrier integrity alterations. In this scenario, diet emerges as a shared environmental driver of these conditions and consequently as a promising preventive and therapeutic target. Nutritional assessment and targeted dietary interventions from early life, including during pregnancy, offer a unique opportunity to improve both metabolic health and asthma/allergic outcomes, potentially reducing disease severity, optimizing drug effectiveness, and improving overall quality of life.

Keywords: Adipokines; Allergic; Allergies; Asthma; Atopic dermatitis; Diet; Food Allergy; Gut microbiota; Inflammation; Mediterranean Diet; Pediatric obesity; Rhinitis; Ultra-processed foods.

Conflict of interest statement

Declaration of competing interest None.

Supplementary info

Publication typesExpand

Full text links

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Cite

10

Respir Med

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. 2026 Aug 6:109075.

doi: 10.1016/j.rmed.2026.109075. Online ahead of print.

Early and continued asthma control up to week 24 in patients with severe, uncontrolled asthma treated with tezepelumab: Initial results of the real-world ASCENT study

Katrin Milger[1], Del Dorscheid[2], Christian Gessner[3], Ole Hilberg[4], Jean-Pierre Llanos[5], Jonatan Nåtman[6], Hannah Urbanski[7], Deborah L Clarke[7], Benjamin Emmanuel[8], Neda Stjepanovic[9]

Affiliations Expand

- PMID: 42562237

- DOI: 10.1016/j.rmed.2026.109075

Abstract

Introduction: Tezepelumab has demonstrated efficacy in patients with severe, uncontrolled asthma in randomized controlled trials (RCTs). Real-world studies assessing patient-reported outcomes are required to complement RCT findings.

Methods: ASCENT is an ongoing, multi-country, single-arm, prospective, real-world study assessing asthma symptom control in participants (≥12 years old) with severe, uncontrolled asthma initiating tezepelumab as routine standard of care in Europe and Canada. This interim analysis assessed changes from baseline in Asthma Control Questionnaire-6 (ACQ-6) score, St George's Respiratory Questionnaire (SGRQ) total score, and pre-bronchodilator forced expiratory volume in 1 second (FEV_1) at weeks 4, 12, and 24, and the annualized asthma exacerbation rate (AAER) in the 52-week baseline and 24-week follow-up periods.

Results: Overall, 211 participants were included in this analysis. ACQ-6 and SGRQ total scores improved from baseline to week 4 (least-squares mean [95% CI] change: -0.99 [-1.13, -0.84] and -13.2 [-15.6, -10.8], respectively) and further improved to week 24 (-1.28 [-1.44, -1.12] and -19.8 [-22.6, -17.0], respectively). AAER decreased by 65% (95% CI: 55, 73) between baseline (1.75) and follow-up (0.61) periods. Least-squares mean changes from baseline in pre-bronchodilator FEV_1 at weeks 4 and 24 were 0.09 L (0.03, 0.14) and 0.12 L (0.06, 0.18), respectively. These changes were observed across asthma phenotypes and biomarker levels.

Conclusion: Patients with severe, uncontrolled asthma treated with tezepelumab had clinically meaningful improvements in asthma control, health-related quality of life, lung function, and exacerbations as early as week 4 through to week 24, irrespective of asthma phenotype.

Clinical trial number: NCT05677139.

Keywords: (1 to 7): Asthma; Asthma control; Biologic; Health-related quality of life; Real-world; Severe asthma; Tezepelumab.

Conflict of interest statement

Declaration of Competing Interest ☒The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: I

hereby confirm that I am employed by AstraZeneca and that I hold shares in the company. Neda Stjepanovic, Sr. Global Medical Leader

Supplementary info

Associated dataExpand

Full text links

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Cite

11

Respir Med

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. 2026 Aug 6:109078.

doi: 10.1016/j.rmed.2026.109078. Online ahead of print.

Expert consensus on the Management of Mild and Moderate Asthma

Matteo Martini [1], Lorenzo Cecchi [2], Antonino Musarra [3], Kliljeda Jaubashi [4], Alessandro Maria Marra [5], Francesco Murzilli [6], Francesco Papia [7], Giuseppe Valenti [7], Baoran Yang [8], Mario Cazzola [9], Adriano Vaghi [10], Maria Beatrice Bilò [11]

Affiliations Expand

- PMID: 42562236

- DOI: 10.1016/j.rmed.2026.109078

Abstract

Background: Mild and moderate asthma are the most common forms of asthma, but they often remain poorly controlled due to inappropriate treatment strategies and low adherence. Formal consensus on best practices for managing mild-to-moderate asthma is still lacking.

Objectives: To achieve formal consensus on the management of mild-to-moderate asthma and validate the appropriateness and clinical feasibility of the recommendations in clinical practice.

Methods: A modified Delphi process involving a panel of respiratory experts was employed to formulate consensus statements across the following key domains identified through a cross-sectional survey administered to Italian allergists and immunologists: definition of asthma control, tools for assessment of asthma control, patient phenotyping, personalized treatment, and patient education and empowerment. The appropriateness and clinical feasibility of the agreed statements were validated with a RAND/UCLA method.

Results: Full consensus was reached on asthma control in mild-to-moderate asthma, defined as the absence of symptoms, exacerbations, limitation of daily activities, and oral corticosteroids,

and the optimization of lung function. Assessment of control, future risk, and phenotype should be performed with appropriate tools and timing, to implement proactive management especially in patients at risk of exacerbations and disease progression.

Conclusion: This study provides a comprehensive, expert-driven consensus for the management of mild-to-moderate asthma, formally validated for appropriateness despite variability in real-world implementation. The findings support a patient-centric, proactive approach and offer practical recommendations to bridge the gap between guidelines and clinical practice.

Keywords: asthma control; asthma phenotyping; consensus; mild asthma; mild-to-moderate asthma; moderate asthma; patient adherence.

Conflict of interest statement

Declaration of Competing Interest LC reports personal fees from Chiesi Farmaceutici (consulting), Thermofisher (consulting, talks), GSK (consulting, talks), AstraZeneca (consulting, talks), Menarini (talks, consulting), Novartis (consulting, talks), and Sanofi (consulting, talks). AM reports personal fees from Sanofi (talks), Menarini (consulting), and GSK (consulting). FM reports personal fees from GlaxoSmithKline (talks) and BluePrint (consulting, talks). KJ reports personal fees from Sanofi (talks), Menarini (consulting), and GSK (consulting). AMM reports personal fees from GlaxoSmithKline (consulting) and Menarini (consulting). MM reports personal fees from Chiesi Farmaceutici (consulting), GlaxoSmithKline (consulting, talks), AstraZeneca (consulting), Menarini (consulting), and Sanofi (talks). MC has no financial or nonfinancial relationships or activities concerning this article. He is the deputy editor of Respiratory Medicine but was not involved in selecting peer reviewers for the manuscript or making any subsequent editorial decisions. AV reports personal fees from Chiesi Farmaceutici (talks), GlaxoSmithKline (talks), AstraZeneca (talks), and Menarini (talks). MBB reports personal fees from ALK (consulting), AstraZeneca (talks), BluePrint (advisory board, talk), Gentili (talk), GSK (talks), Menarini (talks), and Sanofi (advisory board, talks). FP, GV, and BY report personal fees from Menarini (consulting) and GSK (talks).

12

Review

Ann Pharmacother

. 2026 Aug 6:10600280261472893.

doi: 10.1177/10600280261472893. Online ahead of print.

Depemokimab-ulaa: A Long-Acting Interleukin-5 Inhibitor

Lauren Linenfelser[1], Melissa Lipari[1,2], Pramodini Kale-Pradhan[1,2]

Affiliations Expand

- PMID: 42557941

- DOI: 10.1177/10600280261472893

Abstract

Objective: To review the pharmacology, efficacy, and safety of subcutaneous depemokimab-ulaa as add-on therapy in the treatment of severe eosinophilic asthma.

Data sources: PubMed database, Embase, and ClinicalTrials.gov were searched using the following terms: depemokimab, depemokimab-ulaa, Exdensur, and GSK3511294.

Study selection and data extraction: Articles published in English between January 2020 and March 2026, related to pharmacology, safety, efficacy, and clinical trials, were reviewed. Four studies met inclusion criteria.

Data synthesis: In phase 3 trials, SWIFT-1 and SWIFT-2, depemokimab-ulaa demonstrated comparable reductions in elevated blood eosinophil (EOS) counts when compared to other interleukin-5 (IL-5) targeting therapies in patients with severe eosinophilic asthma. The annualized exacerbation rates were 0.46 and 0.56 with depemokimab-ulaa vs 1.11 and 1.08 with placebo ($P < .001$), respectively. There were no differences in other outcomes that were studied. In the phase 3 NIMBLE trial, depemokimab-ulaa did not meet the noninferiority margin when patients were switched from other anti-IL-5 therapies. Depemokimab-ulaa maintained a favorable safety profile, with no serious adverse events or deaths considered to be related to the drug.Relevance to Patient Care and Clinical Practice in Comparison to Existing Drugs:When compared with other anti-IL-5 agents, depemokimab-ulaa might serve as an effective alternative option with its twice-yearly dosing offering a significant advantage potentially improving patient adherence and clinical outcomes.

Conclusion: Depemokimab-ulaa's twice-yearly dosing offers a convenient alternative to other anti-IL-5 therapies as add-on treatment for severe eosinophilic asthma.

Keywords: Exdensur; GSK3511294; depemokimab; depemokimab-ulaa.

Supplementary info

Publication typesExpand

Full text links

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Cite

13

Ital J Pediatr

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. 2026 Aug 5;52(1):118.

doi: 10.1186/s13052-026-02303-9.

Asthma-related mortality in Italian children and adolescents

Francesca Saretta [1], Mattia Giovannini [2 3], Angela Klain [4], Luca Pecoraro [5], Stefania Arasi [6], Simona Barni [2], Lucia Caminiti [7], Riccardo Castagnoli [8 9], Mariannita Gelsomino [10], Lucia Liotti [11], Carla Mastrorilli [12], Francesca Mori [2], Gianluigi Marseglia [8 9], Elio Novembre [3]

Affiliations Expand

- PMID: 42557570

- PMCID: PMC13445919

- DOI: 10.1186/s13052-026-02303-9

Abstract

Despite the progress made in the last few decades in diagnosis and therapy, children and adolescents still die of asthma worldwide. In this study, we collected all asthma-related death events in Italian children and adolescents (0-19 years old) from 2013 to 2023 through the Italian National Statistical Database. 46 deaths were recorded, with a mortality rate of 0.39 per million individuals aged 0-19 years old (population denominator: 10.7 million), with the highest number of deaths observed in North-East Regions (36.9%) and 39/46 (84.7%) deaths between 10 and 19 years old. Factors associated with fatal asthma are also discussed. Targeted preventive strategies and further research are called for, particularly in high-incidence regions and adolescents.

Keywords: Adolescents; Asthma; Children; Italy; Mortality; Pediatrics.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: Not applicable. Consent for publication: Not applicable. Competing interests: MG reports personal fees from Sanofi, Thermo Fisher Scientific. Other authors declare that they have no competing interests.

- 17 references
- 1 figure

Supplementary info

Publication types, MeSH termsExpand

Full text links

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Cite

14

Review

Eur Respir Rev

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. 2026 Aug 5;35(181):250292.

doi: 10.1183/16000617.0292-2025. Print 2026 Jul.

Patient-reported outcome measures applied in chronic diseases relevant to asthma remission: a scoping review

Allison Michaud[1,2], John Politis[2], Lachlan Faktor[2], Philip G Bardin[2], Amy H Y Chan[3,4], Paul Leong[2,4]

Affiliations Expand

- PMID: 42556850

- PMCID: PMC13439356

- DOI: 10.1183/16000617.0292-2025

Abstract

Background: Asthma remission is a meaningful treatment goal that requires patient and healthcare provider agreement. However, there is currently no validated way to incorporate patient perspectives of remission in this process. Patient-reported outcome measures (PROMs) can allow comprehensive assessment of remission by capturing the impact on individual patient experiences. The aim of this study was to identify PROMs used to define remission in other chronic diseases, thereby informing development of a PROM for asthma remission.

Methods: A scoping review of primary research studies was conducted using five databases. Eligible studies reported on the development or validation of PROMs that assess remission in chronic diseases. Data were extracted and analysed thematically to identify types of PROMs, health domains assessed and methodological quality.

Results: Nine studies met inclusion criteria, covering 12 PROMs for diseases such as rheumatoid arthritis, inflammatory bowel disease and ankylosis spondyloarthritis. Domains most frequently assessed included disease-specific symptoms (n=11), generalised symptoms (n=5) and mental health (n=2). PROMs generally asked patients about their current health (n=8) although some PROMs had longer recall periods (n=4). Only one PROM was developed with direct patient involvement.

Conclusions: PROMs currently employed in other chronic diseases signify significant complexity when attempting to capture multidimensional aspects of disease remission from a patient perspective. However, fundamental domains and other health elements can be distinguished that will aid development of robust, patient-informed PROMs that align with patient-centred experiences of remission, thereby improving shared decision-making in asthma.

Conflict of interest statement

Conflict of interest: A. Michaud has received honoraria from Valeo Pharma and AstraZeneca. J. Politis and L. Faktor have no disclosures of interest. P.G. Bardin has served on Advisory Boards and provided educational lectures for GlaxoSmithKline, AstraZeneca, Sanofi and Chiesi; honoraria are donated to a charitable research institute. A.H.Y. Chan reports research grants from Health Research Council of New Zealand, Asthma UK, University of Auckland, Oakley Mental Health Foundation, Chorus Ltd, World Health Organization, and Hong Kong University, outside the submitted work and all paid to her institution (the University of Auckland). A.H.Y. Chan previously held the Robert Irwin Postdoctoral Fellowship and is the current recipient of the Auckland Medical Research Foundation Senior Research Fellowship and Clinical director for Asthma New Zealand. A.H.Y. Chan also reports consultancy fees from AcademyeX and Spoonful of Sugar Ltd, travel support from AstraZeneca, advisory board fees from AstraZeneca, GSK and CSL, and was previously on the Board of Asthma New Zealand. She is a member of Respiratory Effectiveness Group (REG), member of the Scientific Advisory Board for Asthma Respiratory Foundation NZ, international member of the Pharmacy Respiratory Task Force, and working group lead for the European Respiratory Society Clinical Research Collaboration "CONNECT". P. Leong has received honoraria from GlaxoSmithKline, AstraZeneca and Chiesi.

- **41 references**
- **2 figures**

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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Cite

15

Review

Ann Allergy Asthma Immunol

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. 2026 Aug 5:S1081-1206(26)00381-9.

doi: 10.1016/j.anai.2026.07.028. Online ahead of print.

Is Remission a Meaningful Outcome in Asthma?

Jason Moraczewski [1], Leonard B Bacharier [2]

Affiliations Expand

- PMID: 42556613

- DOI: 10.1016/j.anai.2026.07.028

Abstract

The principles underlying asthma management are evolving from a reactive model focused on symptom relief and exacerbation management to a proactive approach to achieve full disease control, with consideration of on-treatment clinical remission and disease modification. The advent of biologic therapies targeting type 2 inflammation, and to an extent allergen immunotherapy, have shown promise in achieving a state of on-treatment remission. Emerging evidence suggests that biologics have the potential to induce remission and structural disease modification, but further studies are needed to assess these outcomes as the primary endpoint. To more accurately assess remission as a meaningful outcome in asthma, definitions need to be standardized and validated across studies with special consideration to incorporate biomarker changes and applicability to diverse populations, including children. Ultimately, the transition toward remission- or disease modification-based care may represent a new frontier in the care of asthma.

Keywords: asthma remission; biologics; disease modification.

Conflict of interest statement

Declaration of competing interest JM has nothing to disclose outside of the submitted work. LBB is a member of the GINA Science Committee; reports grants from NIH/NIAID/NHLBI, personal fees from GlaxoSmithKline, Genentech/Novartis, AstraZeneca, Avillion, WebMD/Medscape, Sanofi/Regeneron, Circassia, OM Pharma, Apogee, Excellergy, and Kinaset; DSMB fees from AstraZeneca, DBV Technologies, Aravax, AbbVie, Horizon, and Vertex; and royalties from Elsevier and Up-To-Date outside the submitted work.

Supplementary info

Publication typesExpand

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16

ERJ Open Res

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. 2026 Aug 3;12(4):01456-2025.

doi: 10.1183/23120541.01456-2025. eCollection 2026 Jul.

Airway smooth muscle in asthma: insights from a transcriptomic meta-analysis

Saptarshi Roy[1,2], Rahul Shubhra Mandal[3,2], Sunil Kurian[4], Pawan Sharma[1]

Affiliations Expand

- PMID: 42549070
- PMCID: PMC13430594
- DOI: 10.1183/23120541.01456-2025

Abstract

Background: Airway smooth muscle (ASM) cells are central to bronchoconstriction and airway hyperresponsiveness in asthma, yet a comprehensive view of their transcriptional landscape has been lacking.

Methods: We performed a meta-analysis of publicly available transcriptomic datasets comparing ASM cells isolated from individuals with asthma with those from healthy controls. We included studies that met predefined inclusion criteria, comprising primary human ASM cells isolated from 26 asthma and 32 healthy control subjects. Each dataset was analysed separately, followed by meta-analysis of differentially expressed genes (DEGs). Heterogenicity assessment, pathway enrichment and single-sample gene set enrichment analysis were performed. DEGs were further matched with genome-wide association studies (GWASs) of asthma.

Results: This study identified 150 genes that were consistently dysregulated in asthma-derived ASM cells, compared with those from healthy controls. *NLRP2* showed the greatest upregulation in asthma as measured by pooled $\log_2$ fold change (effect size) in asthma, whereas *ABI3* was the most downregulated. Pathway analysis highlighted prominent perturbation of interleukin (IL)-4 and IL-13 signalling. 13 DEGs overlapped with loci reported earlier in a GWAS asthma database, which further underscores our findings.

Conclusions: To the best of our knowledge, this is the first meta-analysis of ASM transcriptomes to delineate a core set of genes and pathways underlying asthma-related airway remodelling. These findings refine our understanding of ASM-specific molecular networks and may guide targeted therapeutics for asthma in future.

Conflict of interest statement

Conflict of interest: The authors declare no conflicts of interest.

- 55 references

- 4 figures

Full text links

Proceed to details

Cite

17

Allergol Int

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. 2026 Aug 3:S1323-8930(26)00081-X.

doi: 10.1016/j.alit.2026.07.002. Online ahead of print.

Airway mucus plugs are associated with exacerbation risk in biologic-naïve but not biologic-treated asthma: A prospective cohort study

Naoya Tanabe [1], Yusuke Hayashi [2], Hironobu Sunadome [2], Ryo Sakamoto [3], Atsuyasu Sato [2], Toyohiro Hirai [2]

Affiliations Expand

- PMID: 42547341

- DOI: 10.1016/j.alit.2026.07.002

Free article

No abstract available

Conflict of interest statement

Conflict of interest The authors have no conflict of interest to declare.

Supplementary info

Publication typesExpand

Full text links

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Cite

18

Respir Med

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. 2026 Aug 3:261:109076.

doi: 10.1016/j.rmed.2026.109076. Online ahead of print.

De-escalation of inhaled corticosteroids and other maintenance asthma therapies in dupilumab-treated patients with severe asthma: a real-world study

Matteo Bonato [1], Elisabetta Favero [2], Michele Ciresi [3], Elisabetta Marcon [4], Francesca Savoia [3], Anna Talia Gaccione [4], Matteo Dalla Libera [3], Martina Turrin [4], Marco Stellin [5], Massimo Sonego [5], Enzo Emanuelli [5], Marco Caminati [6], Gianenrico Senna [7], Micaela Romagnoli [3]

Affiliations Expand

- PMID: 42546934

- DOI: 10.1016/j.rmed.2026.109076

Abstract

Background: Biologic therapies for severe T2-high asthma demonstrated oral corticosteroid-sparing effects, but evidence on the harmlessness of de-escalating inhaled corticosteroids and other in patients controlled with dupilumab remains limited.

Objective: To evaluate, in a real-world setting, the clinical impact of de-escalating high-dose ICS, LAMA and LTRA in patients with severe asthma controlled with dupilumab.

Methods: We conducted a retrospective bicentric observational study including 54 patients with severe asthma who initiated dupilumab between January 2022 and December 2023. Changes in maintenance therapy during the first year were classified as de-escalation, continuation, or never treated. Primary outcomes at 18 months included ACT score, acute exacerbation rate (AER), FEV_1, their variation from baseline, chronic OCS use and clinical remission.

Results: Dupilumab significantly improved asthma control, lung function, AER, and OCS use. The proportion of patients receiving high-dose ICS decreased from 85.1% at baseline to 47.1% at 18 months ($p < 0.001$). Similar trends for LAMA and LTRA. Primary outcomes at 18 months did not differ significantly between patients who de-escalated maintenance therapy and those who continued treatment. Clinical remission was achieved in 53.7% of patients at 12 months and 63.4% at 18 months. Maintenance therapy de-escalation did not affect the likelihood of achieving clinical remission, although nearly half of patients in remission remained on low-to-medium dose ICS.

Conclusions: In patients with severe asthma controlled with dupilumab, de-escalation of high-dose ICS, LAMA, or LTRA was not associated with clinical deterioration and did not preclude achievement of clinical remission.

Keywords: Biologics; ICS; LAMA; LTRA; Leukotriene; Remission.

Conflict of interest statement

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

Full text links

[Proceed to details]

Cite

19

J Asthma

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. 2026 Aug 7:1-12.

doi: 10.1080/02770903.2026.2712835. Online ahead of print.

Extended nitric oxide analysis in patients with suspected airway hyperreactivity

Giovanni Paoletti[1,2], Giovanni Costanzo[1,2], Marta Casini[3], Emanuele Nappi[1,2], Corrado Pelaia[4], Donatella Lamacchia[2], Francesca Puggioni[2], Sebastian Ferri[2], Maria Rita Messina[2], Giorgio Walter Canonica[1,2], Enrico Heffler[1,2]

Affiliations Expand

- **PMID: 42546116**

- **DOI: 10.1080/02770903.2026.2712835**

Abstract

Objectives: a key feature of asthma is airway hyperresponsiveness (AHR), which is typically diagnosed through methacholine challenge testing (MCT). Fractional exhaled nitric oxide (FENO) is a noninvasive marker of type-2 inflammation. Extended nitric oxide analysis breaks this down into bronchial (JawNO) and alveolar (CANO) components; we aimed to determine whether this extensive analysis offers added value in diagnosing AHR beyond what conventional FENO testing can provide.

Methods: seventy-two consecutive patients referred for MCT were prospectively enrolled and underwent spirometry, extended nitric oxide analysis, and MCT. AHR was defined using three methacholine dose thresholds for PD20FEV1 (≤400, ≤800, and ≤1600 µg).

Results: AHR prevalence ranged from 23.6% at the lowest threshold (≤400 µg) to 44.4% at the highest (≤1600 µg). Patients with positive AHR had significantly elevated FENO and JawNO across all thresholds. The best FENO and JawNO cutoffs provided strong negative predictive values, but their positive predictive values were low.

Conclusion: extended nitric oxide analysis-especially FENO and JawNO-may improves the diagnostic capability of exhaled nitric oxide in predicting AHR. These findings highlight its

potential as a quick, noninvasive way to rule out AHR, which could simplify asthma diagnosis and reduce the need for lengthy bronchial challenge testing.

Keywords: Asthma; airway hyperreactivity; alveolar nitric oxide; bronchial output; exhaled nitric oxide; methacholine.

Full text links

Proceed to details

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20

J Asthma

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. 2026 Aug 3:1-10.

doi: 10.1080/02770903.2026.2701399. Online ahead of print.

Establishment of a multimodal respiratory function diagnostic model and its role in the differential diagnosis of bronchial asthma and chronic obstructive pulmonary disease with incomplete reversible airflow limitation

Peng Li[1], Li Sun[1], Chao Wang[2], Qingzhen Gao[1]

Affiliations Expand

- PMID: 42473420

- DOI: 10.1080/02770903.2026.2701399

Abstract

Objective: This retrospective diagnostic test aimed to explore a method that can differentiate asthma from COPD with incomplete reversible airflow limitation.

Methods: Patients diagnosed with asthma and COPD from June 19, 2024, to November 16, 2025, were enrolled as training samples. Intergroup data were analyzed through discriminant analysis to determine the quantitative diagnostic formula and the discriminant boundary value Z_c that could identify them. A portion of the patients collected in the same way were used as validation samples to verify the accuracy of the model.

Results: 128 patients with asthma and 142 with COPD were enrolled as training samples. Through discriminant analysis, the quantitative diagnostic formula was $Zi = 1.476X_1+0.348X_2-0.269X_3-0.465X_4+0.995X_5+0.046X_6+0.013X_7-4.479$ ($X_1 = 0$ and $X_1 = 1$ represent the absence or presence of the concave pattern in the F-V, respectively; X_2, X_3 and X_4 represent forced vital capacity, forced expiratory volume in 1s, and peak expiratory flow, as indicators of bronchodilation test, respectively, 0 = negative, 1 = positive; X_5 represents gender, $X_5 = 0$ indicates female, and $X_5 = 1$ indicates male; X_6 represents age; X_7 represents smoking index), and $Z_c = -0.0687$. The accuracy of

the quantitative diagnostic formula, validated internally and externally using 121 patients, was 90.40% and 87.60%, respectively.

Conclusions: The multimodal respiratory function diagnostic model, utilizing discriminant analysis, can distinguish asthma with incomplete reversible airflow limitation from COPD when the strongest expiratory effort is performed with an extrapolated volume ≤0.10 L.

Keywords: Chinese Clinical Trial Registry (registration number: ChiCTR2400082672); Respiratory function test; discriminant analysis; flow-volume (F-V) curve; forced expiratory flow rate; spirometry.

Full text links

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Cite

21

JAMA

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. 2026 Aug 4;336(5):363.

doi: 10.1001/jama.2026.9473.

Approval of Respiratory Biologics Linked to Decline in Asthma Exacerbations

Samantha Anderer

- **PMID: 42430145**
- **DOI: 10.1001/jama.2026.9473**

No abstract available

Full text links

Proceed to details

Cite

22

J Exp Med

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. 2026 Aug 3;223(8):e20252201.

doi: 10.1084/jem.20252201. Epub 2026 Jul 6.

Chimeric allergen receptor regulatory T cells suppress birch pollen allergic airway inflammation

Ana Alcaraz-Serna[1], Noémie Chillier[#1], Aurélien Trompette[#2], Laura Ermellino[1], Raphaël Porret[1], Erica Lana[1], Rebecca Cecchin[1], Apiha Shanmuganathan[2], Seher Guney[2], Oscar Alfageme-Abello[1], Eleonora Pace[1], Antonio Mancarella[1], Jeremy Campos[1], Mathilde Foglierini[1], Christophe von Garnier[2], Craig Fenwick[1], Laurent Perez[1 3], Niki Ubags[2], Yannick D Muller[1 3]

Affiliations Expand

- PMID: 42405950

- PMCID: PMC13335422

- DOI: 10.1084/jem.20252201

Abstract

Asthma is a deadly chronic respiratory disease affecting over 300 million people. While allergen immunotherapy remains the only disease-modifying treatment, it is poorly applicable for patients with severe asthma. Here, we explored the therapeutic potential of regulatory T cells (Tregs) armed with chimeric allergen receptors-named CAlleR-redirected against the major allergen of birch pollen Bet v1. Four novel anti-Bet v1 antibodies were identified and used to engineer and functionally validate CAlleR. CAlleR Tregs showed specific in vitro activation and suppression and significantly reduced the airway hyperresponsiveness in birch pollen-sensitized mice. Mechanistically, CAlleR Tregs migrated to the lungs and mediastinal lymph nodes, interacted with CD11c+ dendritic cells, and were activated in a FcγR-dependent manner by cross-presenting Bet v1 stabilized with noncompetitive anti-Bet v1 antibodies. These findings unveil a novel mechanism for targeting soluble antigens and highlight the potential of CAlleR Tregs to prevent and treat severe allergies.

Conflict of interest statement

Disclosures: A. Alcaraz-Serna reported personal fees from Novartis AG outside the submitted work. An international patent application entitled “CHIMERIC ALLERGEN RECEPTOR (CAlleR) REGULATORY T CELLS” has been filed and is currently pending. The authors declare that the research was conducted in the absence of any other commercial or financial relationships that could be construed as a potential conflict of interest.

- 54 references

- 14 figures

Supplementary info

MeSH terms, Substances, Grants and fundingExpand

Full text links

Cite

23

J Infect Dis

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. 2026 Aug 3;234(1):e34-e39.

doi: 10.1093/infdis/jiag104.

Infant Infection With Respiratory Syncytial Virus Genotypes and Subsequent Childhood Asthma Risk

Christian Rosas-Salazar[1], Tebeb Gebretsadik[2], James D Chappell[1], R Stokes Peebles Jr[3], William D Dupont[2], Meghan H Shilts[3], Samadhan J Jadhao[4], Larry J Anderson[4], Suman R Das[3], Tina V Hartert[1,3]

Affiliations Expand

- PMID: 41773827

- PMCID: PMC13431657

- DOI: 10.1093/infdis/jiag104

Abstract

Our objective was to test the hypothesis that respiratory syncytial virus (RSV) infection during infancy with genotypes containing previously reported G gene sequence duplications (Gdups) is associated with an increased risk of childhood asthma. In a population-based, prospective, birth cohort of healthy, term children, we found that children with RSV-A Gdup+ (adjusted odds ratio [aOR] = 2.00, 95%CI = 1.15-3.47) and RSV-B Gdup + (aOR = 1.78, 95%CI = 1.01-3.11) infections during infancy had higher odds of 5-year current asthma than those without RSV infection during infancy. These findings are proof-of-concept evidence that RSV genetic variation is associated with variable childhood asthma risk.

Keywords: G gene; asthma; children; genotype; respiratory syncytial virus.

Conflict of interest statement

Potential conflicts of interest. C. R-. S. has served as a consultant for AstraZeneca and The KOL Connection. He has received speaking or writing fees from the American Academy of Allergy, Asthma, and Immunology; the American Association for Respiratory Care; and the American Academy of Pediatrics. J. D. C. receives grant support from Merck for respiratory syncytial virus

(RSV) epidemiological studies. L. J. A. has served on RSV vaccine advisory boards for Bavarian Nordic, Novavax, Daiichi-Sankyo, ClearPath Development Company, ADVI, Pfizer, and Jansen Pharmaceuticals. Through Emory University, his laboratory currently receives funding from Pfizer for RSV surveillance studies in adults, from Advaccine Biopharmaceuticals Suzhou Co. Ltd. for serologic studies of RSV vaccine recipients, and from Sciogen for animal studies on RSV vaccines. He is a co-inventor on several Centers for Disease Control and Prevention patents on the RSV G protein and its CX3C chemokine motif relative to immune therapy and vaccine development. He is also co-inventor on a patent filing for the use of RSV platform virus-like particles with the F and G proteins for vaccines. T. V. H. has served as the Co-Chair of the American Thoracic Society Vaccine and Immunization Initiative and on a RSV vaccine Data Safety Monitoring Board for Pfizer. She has received speaking fees from the American Academy of Allergy, Asthma, and Immunology. She has served on NIH council and the Parker B. Francis Fellowship Council of Scientific Advisors. She has also received royalties from UpToDate as an asthma content writer. The other authors do not have a commercial or other association that might pose a conflict of interest. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

- 15 references
- 1 figure

Supplementary info

MeSH terms, Grants and fundingExpand

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

E-cigarette or vaping product use-associated lung injury without pulmonary symptoms: A case report and literature review.

Ma H, Huang Z, Cui Y, Shen J, Zhang L, Zeng M, Huang X.Medicine (Baltimore). 2026 Aug 7;105(32):e49863. doi: 10.1097/MD.0000000000049863.PMID: 42566571 Review.

PATIENT CONCERNS: We present a 33-year-old male with a history of e-cigarette use and allergic rhinitis. He initially sought care for recurrent nasal congestion in the absence of pulmonary symptoms; however, chest imaging unexpectedly revealed extensive lung shadows. ...

2

Cite

Study on the correlation between serum lead levels and allergic rhinitis in adults and IgE levels.

Zhang ZF, Wang WB.Medicine (Baltimore). 2026 Aug 7;105(32):e50061. doi: 10.1097/MD.0000000000050061.PMID: 42566568

While lead exposure is hypothesized to promote Th2-type allergic responses, large-scale epidemiological data on its link to adult allergic rhinitis (AR) are scarce. This study aimed to explore the association between serum lead levels and AR risk and immunoglobulin E (IgE) ...

3

Cite

Obesity, Asthma and Allergy Triangle: The Solution could be the Diet.

Coppola S, Agizza A, Iorio RF, Carucci L, Oglio F, Caldaria E, Cadavere A, Canani RB.Ann Allergy Asthma Immunol. 2026 Aug 6:S1081-1206(26)00383-2. doi: 10.1016/j.anai.2026.07.030. Online ahead of print.PMID: 42562282 Review.

4

Cite

Congenital Ichthyosis is Associated with Increased Risk of Allergic Disorders.

O'Connor MB, Patel RD, Soltani H, Ren Z, Paller AS.J Allergy Clin Immunol. 2026 Aug 6:S0091-6749(26)00559-2. doi: 10.1016/j.jaci.2026.07.016. Online ahead of print.PMID: 42562187

Designation of having food allergy, allergic rhinitis, or allergic asthma required a physician's diagnosis and affirmative responses about signs and symptoms. ...Significantly higher rates of allergic rhinitis, food allergy, and allergic asthma were found in congeni ...

5

Cite

Increased IL-5, IL-33, and ST2 expression in pediatric adenoid hypertrophy associated with allergic rhinitis: Immunohistochemical and systemic evidence.

Hashem WAA, Ibrahim EH, Alkashgari HR, Shalabi A, Eldin DAES, Abdelaal AFE, Abdel-Alazim HAZ, Abd-Allah Elneklawy NE, Mohamed BA, Ismail HM, Elbaily AS, Megahed MA, Abozaid BE, Abdelwahed M, Eid AA, El-Hasanin AR, Elaskary ZM, Youssef HMK.Ir J Med Sci. 2026 Aug 6. doi: 10.1007/s11845-026-04565-y. Online ahead of print.PMID: 42560621

INTRODUCTION: Adenoid hypertrophy (AH) is a common paediatric disorder that may be worsened by allergic rhinitis (AR), contributing to persistent symptoms and postoperative recurrence. The immunologic mechanisms underlying allergic AH remain incompletely understood. ...

6

Cite

Pseudoephedrine poisoning reported to German poison centers: analysis of documented patient cases and the particular vulnerability of infants and toddlers.

Gezgin F, Eyer F, Zorn G, Schaper A, Wagner R, Seifert R.Naunyn Schmiedebergs Arch Pharmacol. 2026 Aug 6. doi: 10.1007/s00210-026-05790-z. Online ahead of print.PMID: 42560552

These include pseudoephedrine (PSE), an indirect sympathomimetic, which is used in Germany as a combination preparation for the treatment of cold and flu symptoms and for the symptomatic treatment of allergic rhinitis. In Germany, PSE is combined with acetylsalicylic acid, ...

7

Cite

Prevention of Adverse Reactions to Allergen Immunotherapy With Omalizumab: A Retrospective Study.

Shang K, Wu Z, Shi J, Yu H, Cheng L, Zhang H, Wu J.Clin Exp Allergy. 2026 Aug 5. doi: 10.1111/cea.70405. Online ahead of print.PMID: 42557829 No abstract available.

8

Cite

The sneezing reflex: neurophysiology, neuroimmune pathways and clinical disorders.

Bayar Muluk N.Acta Neurol Belg. 2026 Aug 5. doi: 10.1007/s13760-026-03164-z. Online ahead of print.PMID: 42557463 Review.

A structured search strategy applied keywords such as "sneezing reflex," "neuromedin B (NMB)," "trigeminal nucleus," "allergic rhinitis," "chronic rhinosinusitis," and "neuromodulation." RESULTS: The sneeze reflex is a complex protective mechanism divided into an initial s ...

9

Cite

Impact of Topical Steroid Nasal Irrigation Adherence on Chronic Rhinosinusitis and Allergic Rhinitis Patient Outcomes.

He CJ, Baker O, LaMonte O, Verpukhovskiy P, Wang H, Chen Y, Tu S, DeConde AS, Yan CH.Laryngoscope Investig Otolaryngol. 2026 Aug 4;11(4):e70518. doi: 10.1002/lio2.70518. eCollection 2026 Aug.PMID: 42553421 Free PMC article.

OBJECTIVE: High volume steroid nasal rinses are often prescribed for chronic rhinosinusitis and allergic rhinitis. Although the general importance of medication adherence is well established, the specific relationship between objectively measured adherence to topical stero ...

10

Cite

Prevalence and Risk Factors of Sleep Disordered Breathing in School-Aged Children with Bronchopulmonary Dysplasia.

Klusza R, Ryan M, Dahlberg SE, Cunningham D, Corrado R, Ith I, Katwa U, Gaffin J, Gueye-Ndiaye S.Pediatr Allergy Immunol Pulmonol. 2026 Aug 4:2151321X261475048. doi: 10.1177/2151321X261475048. Online ahead of print.PMID: 42550781

This study describes SDB prevalence and evaluates associations with health factors (asthma, rhinitis, second-hand smoke exposure, overweight/obesity), neonatal history, and oropharyngeal crowding among school-age children (6-12 years) with BPD.Materials and Methods:Cross-s ...

11

Cite

Validation of an Allergic Rhinitis Instrument That Synergizes With the Sino-Nasal Outcome Test.

Zhang SK, Gilani S, Zhou A, Alkhatib S, Prince A, Gray ST, Corrales CE, Shin JJ.Int Forum Allergy Rhinol. 2026 Aug 4. doi: 10.1002/alr.70227. Online ahead of print.PMID: 42550565

BACKGROUND: Allergic rhinitis (AR) and chronic rhinosinusitis (CRS) frequently co-occur with shared symptomatology, such that evaluating both entities concurrently yet discretely is of help. ...The allergic rhinitis-specific items demonstrate internal consistency, d ...

12

Cite

Impact of sublingual immunotherapy with dust mite drops on ECP, TARC, VCAM-1 inflammatory status in patients with allergic rhinitis.

Deng B, Zhao Y, Liu J.Immunotherapy. 2026 Aug 4:1-11. doi: 10.1080/1750743X.2026.2704434. Online ahead of print.PMID: 42550205

CONCLUSION: Sublingual immunotherapy with Dust mite drops appears effective in suppressing systemic inflammation, minimizing treatment-related adverse events, enhancing both small airway and pulmonary function, and easing the clinical manifestations of allergic rhinitis. A ...

13

Cite

Label-free quantification of early virus-induced cellular responses by digital holographic tomography.

Kublicka A, Buzalewicz I, Skrzela D, Moniakowski L, Fuller DKS, Chwirot A, Marynowska M, Chodaczek G, Bażanów B, Matczuk AK.mSphere. 2026 Aug 4:e0030426. doi: 10.1128/msphere.00304-26. Online ahead of print.PMID: 42549912 Free article.

Here, we propose a label-free digital holotomography (DHT) approach for the detection of early virus-induced cellular responses during the first hours of infection, including equine arteritis virus (EAV), equine herpesvirus 1 (EHV-1), and equine rhinitis B virus (ERBV). Us ...

14

Cite

[The Impact of Septorhinoplasty on Work Productivity and Activity Impairment: A Multi-Institutional, Prospective Cohort.]

Bhatnagar K, Bartho M, Pua E, Datla T, Grewal M, Merkouris H, Champaloux EP, Rincon J, Akkina S, Lu GN, Chi J, Loyo M.Otolaryngol Head Neck Surg. 2026 Aug 4. doi: 10.1002/ohn.70357. Online ahead of print.PMID: 42549734

RESULTS: Among 212 patients, the average age was 42. 57% had allergic rhinitis, 22% had chronic sinusitis, and 22% had obstructive sleep apnea. The mean SCHNOS-O score was 74.1 20.1 and VAS was 5.8 2.7. 68.9% reported employment and missed an average of 1.5 5.1 hours ...

15

Cite

[Urinary metal concentrations in Korean preschool children: Elevated levels and associations with allergic rhinitis in the 5th Korean National Environmental Health Survey.]

Heo Y, Lee S, Kim OJ, Kil J, Choi K.Int J Hyg Environ Health. 2026 Aug 3;277:114882. doi: 10.1016/j.ijheh.2026.114882. Online ahead of print.PMID: 42546458

Urinary Ni concentrations differed significantly based on allergic rhinitis status (p = 0.006), whereas Mo showed a marginally significant association(p = 0.054). Logistic regression analysis showed that a 1-unit increase in log-transformed urinary Ni concentration was ass ...

16

Cite

[Understanding the needs and expectations of Ukrainian refugees with allergic diseases: the UCRAID@Apulia Pilot Study.]

Giuliano AFM, Ventura MT, Antonucci R, Buquicchio R, Patella V, Bedbrook A, Bousquet J.Int Arch Allergy Immunol. 2026 Aug 3:1-14. doi: 10.1159/000552771. Online ahead of print.PMID: 42545921

METHODS: A multidisciplinary, cross-sectional study was conducted from July 2023 to June 2024 involving adult Ukrainian refugees with asthma, allergic rhinitis, atopic dermatitis or chronic urticaria recruited via a network of Ukrainian associations and institutional partn ...

17

Cite

ASM-Ceramide Axis Modulation Is Associated With TSLP Release and Epithelial Barrier Dysfunction in an In Vitro Type 2 Inflammation Model Relevant to Pediatric Rhinitis.

Liu Q, Jing W, Chang X, Liu S.Int Arch Allergy Immunol. 2026 Aug 3:1. doi: 10.1159/iaa/adfag002. Online ahead of print.PMID: 42545914

BACKGROUND AND OBJECTIVE: Epithelial barrier dysfunction is an early feature of pediatric rhinitis, but the upstream epithelial events that initiate this process remain incompletely defined. Because lipid remodeling and epithelial-derived alarmins may interact during type ...

18

Cite

miR-337-5p targets WNK1 to promote IL-13-induced nasal epithelial inflammation in allergic rhinitis.

Wu S, Xu Y, Qiao J.Int Arch Allergy Immunol. 2026 Aug 3:1-17. doi: 10.1159/000553284. Online ahead of print.PMID: 42545909

INTRODUCTION: Allergic rhinitis (AR) represents a prevalent chronic inflammatory disease affecting the nasal mucosa, yet effective diagnostic biomarkers and therapeutic targets remain elusive. ...

19

Cite

Identification of EGR2 and TGFB1 as Potential Immunoregulatory Biomarkers for Allergic Rhinitis: An Exploratory Bioinformatics and Pilot Validation Study.

Liu Y, Guo S, Cao F, Chen X, Liu Y.Med Sci Monit. 2026 Aug 3;32:e952390. doi: 10.12659/MSM.952390.PMID: 42543752 Free PMC article.

BACKGROUND Allergic rhinitis (AR) is a common inflammatory disorder of the nasal mucosa triggered by allergens and characterized by sneezing, nasal congestion, and itching. ...

20

Cite

Composition-Programmed Transport Inversion in Spherical Nucleic Acids across Distinct Epithelial Barriers.

Sun X, Xu R, Zhang H, Ren G, Ning L, Lu Z, Liu X, Jia F.J Am Chem Soc. 2026 Aug 5;148(30):32088-32100. doi: 10.1021/jacs.6c06983.PMID: 42503669

In vivo, barrier-matched BASNA formulations achieve FcepsilonRIbeta silencing in mast cells, preventing inflammatory flare-ups in a prophylactic atopic dermatitis model and suppressing established symptoms in a therapeutic allergic rhinitis model. These findings show that ...

21

Cite

Evidence-based recommendations for shower-out practices: assessing virus removal from hair using a surrogate non-enveloped virus.

Accoti A, Cajimat MNB, Olal C, Hensley K, Kozlovac J, Bente DA.Microbiol Spectr. 2026 Aug 4;14(8):e0038726. doi: 10.1128/spectrum.00387-26. Epub 2026 Jul 13.PMID: 42439554 Free PMC article.

To conduct the study at a lower biocontainment level, we used Bovine Rhinitis B virus (BRBV), a genetically closely related surrogate for FMDV. First, we assessed the inactivation capacity of shampoos and leave-in conditioners directly against BRBV and an enveloped virus f ...

22

Cite

Comprehensive MRI analysis of olfactory bulb morphology and olfactory sulcus depth in chronic rhinosinusitis, migraine, and post-COVID patients.

Li S, Kim K, Li Z, Joshi A, Ajaj A, Gossrau G, Haehner A, Hummel T.Neuroscience. 2026 Aug 4;608:108-117. doi: 10.1016/j.neuroscience.2026.05.020. Epub 2026 May 19.PMID: 42162730 Free article.

AMA **APA** **MLA** **NLM**

AMA **APA** **MLA** **NLM**

First Prev

Page

chronic cough

1

Case Reports

BMJ Case Rep

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. 2026 Aug 5;19(8):e274654.

doi: 10.1136/bcr-2026-274654.

Diagnostic challenge of human herpesvirus 8-associated multicentric Castleman disease in a patient living with HIV disease

Sasiwan Atithammarak[1], Gompol Suwanpimolkul[2]

Affiliations Expand

- PMID: 42557001
- PMCID: PMC13448002
- DOI: 10.1136/bcr-2026-274654

Abstract

A man in his early 30s presented with a 4-month history of low-grade fever and chronic dry cough. Three months before admission, he developed persistent low-grade fever, rash and bilateral cervical lymphadenopathy. He was diagnosed with HIV infection and started on tenofovir/lamivudine/dolutegravir. Two weeks before admission, he developed right-sided pleuritic chest pain. Chest CT revealed bilateral pleural effusions and generalised lymphadenopathy involving the lower cervical, mediastinal and axillary regions. An excisional biopsy of a right lower cervical lymph node demonstrated hyaline-vascular architecture, including 'lollipop' lesions and onion-skinning of the mantle zones. Immunohistochemistry showed human herpesvirus 8 (HHV-8)-positive plasmacytoid cells within the mantle zones, without malignant features, consistent with HHV-8-associated multicentric Castleman disease (MCD). The patient continued antiretroviral therapy and received rituximab 375 mg/m^2 every week for four cycles. He achieved complete resolution of the pleural effusions. This case illustrates the variable clinical presentation of HHV-8-associated MCD in a patient living with HIV.

Keywords: HIV / AIDS; Pathology.

Conflict of interest statement

Competing interests: None declared.

- 21 references
- 5 figures

Supplementary info

Publication types, MeSH terms, Substances, Supplementary conceptsExpand

Full text links

Proceed to details

Cite

2

Chest

. 2026 Aug 4:S0012-3692(26)06328-2.

doi: 10.1016/j.chest.2026.07.5229. Online ahead of print.

Brain Structural Remodeling and Longitudinal Grey Matter Changes in Adults with Chronic Cough: Evidence from A Large-Scale Longitudinal Population-Based Study

Shuojia Xie[1], Mingyu Zhong[1], Zikai Lin[1], Linzhi He[1], Gengjia Chen[1], Chen Zhan[1], Qingyang Zhang[1], Woo-Jung Song[2], Jing Li[1], Ruchong Chen[3]

Affiliations Expand

- PMID: 42551513

- DOI: 10.1016/j.chest.2026.07.5229

Abstract

Background: Chronic cough (CC) is increasingly recognized as a hypersensitivity syndrome involving maladaptive neuroregulatory changes, yet large-scale evidence regarding macro-scale structural brain alterations and their longitudinal trajectory remains scarce.

Research question: Is chronic cough associated with specific regional grey matter volume alterations and an accelerated rate of brain atrophy over time?

Study design and methods: This retrospective longitudinal cohort study utilized individual-level data from the UK Biobank, involving 38,638 participants with baseline brain MRI (4,676 with CC) and a subset of 2,798 participants who underwent repeated imaging. Regional grey matter volume (GMV) across 139 areas was quantified from T1-weighted structural images. Cross-sectional associations were assessed using multivariable logistic regression with three prespecified sensitivity analyses evaluating cough duration, medication-related cough, and major comorbid conditions. Longitudinal changes were evaluated using 1:3 propensity score matching and linear mixed-effects models.

Results: Chronic cough was associated with significantly reduced GMV in 63 brain regions, with the strongest associations observed in the right ventral striatum (OR: 0.44 [0.32-0.59]). Sex-stratified analysis revealed more extensive, left-lateralized structural remodeling in females (P-interaction < 0.05). Chronic dry cough was specifically associated with reduced grey matter volume in the bilateral postcentral gyrus (both OR < 1). Furthermore, longitudinal analysis suggested that chronic cough may be associated with a faster rate of GMV decline in seven regions, particularly within the cerebellum.

Interpretation: Chronic cough is associated with significant widespread structural brain alterations and accelerated atrophy within brain regions, supporting the possibility that chronic cough may be associated with dynamic neurostructural change potentially related to altered central neural processing.

Keywords: brain MRI; chronic cough; cough hypersensitivity; population-based study.

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

1

Am J Respir Crit Care Med

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. 2026 Aug 8:aamag413.

doi: 10.1093/ajrccm/aamag413. Online ahead of print.

The Renaissance of Bronchiectasis

Miguel Angel Martinez-Garcia[1], Anne B Chang[2 3], Sanjay H Chotirmall[4 5], Gregory Tino[6]

Affiliations Expand

- PMID: 42569927

- DOI: 10.1093/ajrccm/aamag413

Abstract

Bronchiectasis now has an expanding landscape with a research growth rate exceeding that of asthma and COPD (9). We have summarized the top ten major shifts in domains of this landscape. In addition to the gaps mentioned above, further growth also needs to focus on prevention and ensure that consumers and underserved populations are included to strengthen equity (including in medication and RCT access), enhance relevance, and translate advances into meaningful improvements in care and outcomes for both children and adults with bronchiectasis.

Keywords: Bronchiectasis; adults; children; history.

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Thorax

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Unsupervised home spirometry versus supervised clinic spirometry: analysis of longitudinal participant-level data from the CLEAR trial in patients with bronchiectasis

Ryan McChrystal[#1], Rebecca H McLeese[#1], Brenda O'Neill[2], Daniel F McAuley[3], J Stuart Elborn[3], Mike Clarke[4 5], John Norrie[4], Dermot Linden[3], Jonathan Stewart[3], Andrew Jackson[5], William D-C Man[6 7 8], Anthony De Soyza[9], James D Chalmers[10], Rohan Anand[3], Fiona Copeland[11], Judy M Bradley[12 3]; CLEAR Investigator Team

Collaborators, Affiliations Expand

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Free article

Abstract

Background: Lung function measurement is central to assessing disease severity and monitoring progression in bronchiectasis. Although home spirometry is convenient for remote monitoring, there is limited evidence for its performance.

Aims: In an a priori defined substudy in the CLEAR trial (a multicentre, randomised, open-label study of hypertonic saline and carbocisteine versus usual care in bronchiectasis), we assessed the performance of home spirometry in adults with bronchiectasis using the PANACEA framework (seven domains: test Performance, disease mANAgement, Cost, patient Experience, clinician Experience, researcher Experience, and Access).

Methods: Participants performed supervised 'clinic' spirometry at five visits and unsupervised 'home' spirometry weekly and during exacerbations over 52 weeks. Analyses evaluated agreement, longitudinal variation, changes in lung function across exacerbations, measurement quality, adherence and patient experience. Agreement was evaluated using Bland-Altman analysis; other outcomes were summarised descriptively.

Results: 257 participants had home spirometry data. Clinic and home spirometry demonstrated close agreement, with a mean forced expiratory volume in 1 s (FEV_1) difference of 20 mL (95% CI -130 to 170). Variability decreased over time (coefficient of variation 12.25% to 8.81%). Among 462 exacerbations, 195 had spirometry data within 7 days of exacerbation start/end dates. A >100 mL decline in FEV_1 occurred in 48% of exacerbations; 35% returned to within 100 mL of pre-exacerbation stable values by exacerbation end. Most spirometry sessions met American Thoracic Society/European Respiratory Society quality criteria, adherence declined over time while patient experience was generally positive.

Conclusion: Home spirometry demonstrates good agreement with clinic spirometry, with variability between measurements decreasing over time. Home spirometry detected changes in lung function across exacerbations, although variability may limit interpretation at the individual patient level. With appropriate patient support to maintain adherence, home spirometry has potential as a tool for remote monitoring and decentralised clinical trials in bronchiectasis.

Trial registration number: ISRCTN89040295.

Keywords: Bronchiectasis; Respiratory Function Tests.

Conflict of interest statement

Competing interests: BO'N has received a grant from NIHR and support from Belfast Health and Social Care Trust Charitable Funds to attend and present a poster related to the CLEAR trial at a scientific meeting. DFM has received grants from NIHR, Innovate UK, MRC, Novavax, Northern Ireland HSC R&D, Randox and Wellcome Trust; consultancy fees from Bayer, Aptarion, Direct Biologics, Healios, Novartis and MSD and has a patent for a novel treatment for inflammatory disease with Queen's University Belfast. DFM was previously Co-Director of Research for the Intensive Care Society, is a member of two Data Safety Monitoring Boards (Vir Biotechnology and Faron Pharmaceuticals), was previously Director of the MRC/NIHR EME programme and is Scientific Director for Programmes in NIHR. DFM's spouse has received consultancy fees from Insmed and payments for participation in grant review panels from the California Institute for Regenerative Medicine. JN is Chair of the EME Funding Board. DL has received grants from Northern Ireland Chest Heart & Stroke, Academy of Medical Sciences, Belfast Health and Social Care Trust, HSC R&D and Wellcome Trust. WD-CM has received grants from NIHR, is chair of two Data Safety Monitoring Boards, is President of the Association for Respiratory Technology and Physiology and is Associate Editor of ERJ Open Research. ADS has received grants from Bayer, Gilead, Pfizer, AstraZeneca, Insmed and Novartis and fees from Boehringer, Bayer, Gilead, Pfizer, GlaxoSmithKline, Insmed, AstraZeneca, Novartis, Sanofi and 30T for work unrelated to this manuscript. ADS has received speaker fees from Bayer, Gilead, Pfizer, GlaxoSmithKline, Insmed, AstraZeneca, Innogen, Sanofi and Fisher & Paykel and support for attending meetings and/or travel from AstraZeneca, Chiesi, GlaxoSmithKline and Insmed. JDC has received grants from AstraZeneca, Boehringer Ingelheim, Chiesi, Grifols, Genentech, Gilead, Insmed and Trudell and consultancy fees from AstraZeneca, GlaxoSmithKline, Grifols, Boehringer Ingelheim, Janssen, Zambon, Chiesi, Insmed, Novartis, Pfizer and Antabio. FC was a Trustee and is now a Volunteer for Primary Ciliary Dyskinesia Support UK and is a Trustee for Ciliopathy Alliance UK. JB has received grants from NIHR, Northern Ireland Chest Heart & Stroke, European Cystic Fibrosis Society and Northern Ireland HSC R&D. RM, RHM, JSE, MC, JS, AJ and RA have no conflicts to disclose.

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Implementation and outcomes of drug response assessments for inhaled hypertonic saline in bronchiectasis: a post hoc analysis of the CLEAR trial

Rebecca H McLeese[1], Brenda O'Neill[2], Daniel F McAuley[3], Mike Clarke[4 5], Andrew Jackson[5], Christina Campbell[5], Kathryn Ferguson[6], Ryan McChrystal[1], Anthony De Soyza[7], James D Chalmers[8], Fiona Copeland[9], J Stuart Elborn[3], Judy M Bradley[10]; CLEAR Investigator Team

Collaborators, Affiliations Expand

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Free article

Abstract

Introduction: A drug response assessment (DRA) is recommended before starting patients on hypertonic saline (HTS) due to the risk of bronchoconstriction. As part of the CLEAR trial (a randomised, open-label trial of HTS and/or carbocisteine versus usual care in bronchiectasis), we performed a post hoc analysis to explore the implementation and outcomes of DRAs. We aimed to remotely train/assess research coordinators in performing DRAs and determine patient safety/tolerability with HTS.

Methods: Research coordinators were remotely trained/deemed DRA competent. DRAs were conducted only in patients assigned HTS. Failure was classified as ≥15% forced expiratory volume in 1 s (FEV_1) drop or 10%-15% drop with respiratory symptoms.

Results: 54 research coordinators (20 sites) were remotely trained/deemed competent, and 52 conducted at least one DRA. 145 patients completed DRAs: 144 were correctly classified, one was misclassified as pass (found during quality checks). 12 were classified as fail in the first DRA: seven had ≥15% FEV_1 drop, two had 10%-15% FEV_1 drop with symptoms, one had severe coughing (clinical team did not recruit) and the reason was not documented for two. 11 repeated the DRA; nine passed and continued in the trial, two failed and were excluded. 142/145 were classified as pass and entered the trial. Of 142 patients who continued in the trial, 46 later withdrew from HTS. 17 withdrawals were related to issues with HTS tolerance despite passing the first DRA.

Discussion: DRA failure rate was low and did not identify medium-term/long-term tolerance to HTS, indicating that its utility as a screening tool for tolerability in this population is limited.

Trial registration number: ISRCTN89040295.

Keywords: Bronchiectasis; Drug reactions.

Conflict of interest statement

Competing interests: DFM has received grants from the NIHR, the MRC, Northern Ireland HSC R&D, Randox and the Wellcome Trust; consultancy fees from Bayer, Aptarion, Direct Biologics,

Healios, Novartis and MSD; holds a patent for a novel treatment for inflammatory disease with Queen's University Belfast; is Director of the MRC/NIHR EME Programme; is Scientific Director for Programmes at the NIHR; their spouse has received consultancy fees from Insmed and payments for participation in grant review panels from the California Institute for Regenerative Medicine. ADS has received grants from Bayer, Gilead, Pfizer, AstraZeneca, Insmed and Novartis; consultancy fees from Boehringer, Bayer, Gilead, Pfizer, GSK, Insmed, AstraZeneca, Novartis, Sanofi and 30 Technology in work unrelated to this manuscript; speaker fees from Bayer, Gilead, Pfizer, GSK, Insmed, AstraZeneca, Innogen, Sanofi and Fisher & Paykel and support for attending meetings and/or travel from AstraZeneca, Chiesi, GSK and Insmed. JDC has received grants from AstraZeneca, Boehringer Ingelheim, Chiesi, Grifols, Genentech, Gilead, Insmed and Trudell and consultancy fees from AstraZeneca, GlaxoSmithKline, Grifols, Boehringer Ingelheim, Janssen, Zambon, Chiesi, Insmed, Novartis, Pfizer and Antabio. FC was previously a Trustee and is now a volunteer for Primary Ciliary Dyskinesia Support UK and is a Trustee of Ciliopathy Alliance UK. JMB has received grants from the NIHR, Northern Ireland Chest Heart & Stroke, the European Cystic Fibrosis Society and Northern Ireland HSC R&D. RHM, BO'N, MC, AJ, CC, KF, RM and JSE have no conflicts of interest to disclose.

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Psychol Health Med

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Psychological factors and functional capacity as determinants of health-related quality of life in bronchiectasis

Beatriz Andresa da Silva Galli[1], Daniele Oliveira Dos Santos[1], Jéssica Perossi[1], Ana Lara Castro Rodrigues[1], Sulamita Pereira Rosa[1], Larissa Perossi[1], Hugo Celso Dutra de Souza[1], Ada Clarice Gastaldi[1]

Affiliations Expand

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Abstract

Integrating clinical severity with health-related quality of life, psychosocial, and functional measures is essential to fully capture the impact of the disease and to inform patient-centred treatment strategies in patients with bronchiectasis. Accordingly, this study aimed to investigate

the determinants of health-related quality of life in non-cystic fibrosis bronchiectasis, examining how psychological factors, disease severity, and functional exercise capacity interact in patients' self-reported quality of life. This prospective observational study included patients with non-cystic bronchiectasis (NCFB) aged 18-60 years. Disease severity was classified using Bronchiectasis Severity Index (BSI). Assessments included the Hospital Anxiety and Depression Scale (HADS), Medical Outcomes, Short-Form Health Survey (SF-36), Leicester Cough Questionnaire (LCQ), Quality of Life in Bronchiectasis (QOL-B), and Six-Minute Walk Test (6MWT). Pearson correlations and multiple linear regression were used to examine associations between psychological variables and outcomes. Thirty-one patients participated (54.8% female; mean age 52.45 ± 15.3 years), and 83.9% had mild - moderate disease. HRQoL was related to anxiety, depression, and functional exercise capacity, and anxiety was also associated with cough severity. Anxiety was negatively associated with the SF-36 Mental health domain (β = -1.80; *p* = 0.03) and the QOL-B Emotional functioning domain (β = -2.79; *p* = 0.01), while depression was associated with SF-36 Mental health (β = -2.26; *p* = 0.01). No association was found between prognostic severity of the disease and HRQoL. Psychological factors and exercise capacity were the main determinants of HRQoL in patients with mild to moderate NCFB, highlighting the importance of simple functional markers, such as the six-minute walk test (6MWT) and mental health assessment, in clinical evaluation and treatment planning.

Keywords: Bronchiectasis; anxiety; depression; health-related quality of life; multidimensional scaling; physiotherapy.

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Assessment of a bacterial quantification assay to detect and monitor *Pseudomonas aeruginosa* infection in patients with bronchiectasis

Daniela Alferes de Lima Headley[1], Adam J Bell[2], Rebecca C Hull[1], Marie-Jeanne H C Kempen[2], Migle Young[2], Chandani Hennayake[1], Qingyou Du[1], Rachel Galloway[1], Eve McIntosh[1], Zsofia Eke[1], Hollian Richardson[1], Merete B Long[1], Sarah Williams-Macdonald[2], Hazel Buchanan[2], Edward Mountjoy[2], Mateja Sborchia[2], Pawlina Dand[2], Daniel L Halligan[2], James A Long[2], Maia Kavanagh Williamson[2], Georgina Vernon[2], Declan Fawcett-Gibson[2], Daniel De Vega[2], Oriol Sibila[3], Stefano Aliberti[4], Charles S Haworth[5 6], Rachel Dakin[2], Rebecca Holmes[2], Carolyn Clarke[2], James D Chalmers[1 7]

Affiliations Expand

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- **PMCID: PMC13430582**

- **DOI: 10.1183/23120541.01389-2025**

Abstract

Background: ***Pseudomonas aeruginosa*** **(PA) is the most commonly detected pathogen in bronchiectasis. The clinical standard of care for pathogen detection is culture, which has low sensitivity. Early detection and improved monitoring could be used to enhance eradication and long-term suppressive treatments.**

Methods: A novel bacterial quantification assay (BQA) targeting ribosomal RNA (rRNA) for the detection of viable PA was developed. The BQA sensitivity and specificity in patient samples was assessed utilising culture (n=57), as well as BioFire pneumonia panel (n=111) and 16S rRNA gene sequencing (n=62). The potential clinical impact of the BQA in clinical settings was explored using two international patient cohorts.

Results: The BQA detected PA in 100% of samples where PA was identified by other methods. The BQA quantification was positively correlated with quantitative culture (r=0.42; p<0.001) and BioFire (r=0.68; p<0.001). The BQA identified PA in an additional 23-44% of cases. To evaluate if this increased detection had clinical implications, we tested sputum samples considered to be PA negative by culture in patients who subsequently tested positive for PA. The BQA detected PA in 8 out of 20 patient samples 8-484 days prior to primary detection by culture. In patients considered to have successful PA eradication by culture, the BQA detected PA in 13 samples from 27 patients who went on to relapse.

Conclusions: The BQA is a highly sensitive detection and quantification method for PA. The BQA demonstrated improved detection and treatment monitoring compared to culture, identifying patients who went on to either isolate a first PA or relapse.

Conflict of interest statement

Conflict of interest: M.B. Long is a member of the editorial board of ERJ Open Research. O. Sibila has received payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from Insmed and Boehringer Ingelheim. S. Aliberti reports grants or contracts from GlaxoSmithkline, and consulting fees from Insmed Ireland Limited, Fondazione Internazionale Menarini, Insmed Italy S.R.L., Brahms Gmbh, Modernatx, Inc, Moderna Italy Srl, An2 Therapeutics, Inc, Physioassist Sas, Vertex Pharmaceuticals (Europe) Limited, Zambon Italia S.R.L., Zambon S.P.A., Chiesi Farmaceutici Spa, Insmed Germany Gmbh, Insmed Netherlands B.V, Boehringer Ingelheim Italia Spa, Insmed Incorporated, Boehringer Ingelheim International Gmbh, Sanofi S.R.L., Glaxosmithkline Spa. C.S. Haworth has received research funding from AstraZeneca, and fees for consultancy work and/or educational talks from 30 Technology, AstraZeneca, BiomX, Boehringer-Ingelheim, Chiesi, Clarametyx, Infex, Insmed, LifeArc, Pneumagen, Sanofi, Vertex and Zambon. J.D. Chalmers is a member of the editorial board of ERJ Open Research; and reports grants awarded from AstraZeneca, Boehringer Ingelheim, Chiesi, Genentech, Gilead, Grifols, Insmed and Trudell; consulting fees received from Antabio, AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Grifols, Insmed, Janssen, Novartis, Pfizer and Zambon. All other authors reported no conflicts of interest.

- 34 references
- 7 figures

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Microbiol Spectr

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Analysis of clinical characteristics and bronchoalveolar lavage fluid microbial community diversity in non-cystic fibrosis bronchiectasis patients with *Pseudomonas aeruginosa* colonization

Tingxiu Peng[#1234], Chao Liu[#1235], Ping Li[1234], Xiaojian Xiong[1234], Yujie Wang[1234], Ping Zhang[1234], Junyao Li[1234], Qin Zhang[1234], Wei Zhang[1234], Ying Ying[1234]

Affiliations Expand

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- **PMCID: PMC13436378**
- **DOI: 10.1128/spectrum.00871-26**

Abstract

This study aims to examine the differences in microbial community abundance and species distribution in the bronchoalveolar lavage fluid (BALF) obtained from non-cystic fibrosis bronchiectasis (NCFB) patients between those with and without *Pseudomonas aeruginosa* (*P. aeruginosa*) colonization, and to assess the impact of *P. aeruginosa* colonization on airway microecological imbalance in NCFB. Sixty-four patients were enrolled, grouped into *P. aeruginosa*-colonized (PA, 29) and non-colonized (NPA, 35) groups. Among patients with NCFB, those with *P. aeruginosa* colonization had greater disease severity than those without colonization, with significantly higher bronchiectasis severity index (BSI) scores ($P < 0.05$). The proportions of patients with higher Bhalla and E-FACED scores were also greater in the PA group than in the NPA group (62.1% vs 42.8% and 34.1% vs 20%, respectively). Annual hospitalization frequency was numerically higher in PA (2.14 ± 2.43 vs 1.47 ± 0.86; $P = 0.543$). The PA group exhibited poorer pulmonary function, with significantly lower FEV1 and FEV1% predicted (both $P < 0.01$). In addition, NCFB patients in the PA group showed higher proportions of elevated

white blood cell counts (31% vs 17.1%) and neutrophil percentages (41.4% vs 31.4%). Microbiota analysis of BALF demonstrated reduced alpha diversity in NCFB patients with *P. aeruginosa* colonization, with a predominance of *Pseudomonas*, whereas non-colonized NCFB patients had relatively higher abundances of *Streptococcus*, *Acinetobacter*, *Rothia*, *Veillonella*, and *Prevotella*. Overall, *P. aeruginosa* colonization in NCFB is associated with increased disease severity, heightened inflammation, and impaired lung function, accompanied by decreased microbial diversity, *Pseudomonas* dominance, and suppression of commensal taxa.

Importance: *Pseudomonas aeruginosa* is a common colonizer in the airways of patients with non-cystic fibrosis bronchiectasis (NCFB), linked to disease severity, but research on its impact on clinical outcomes and airway microbiome diversity remains limited. This study compared *P. aeruginosa*-colonized (PA group) and non-colonized (NPA group) NCFB patients and found that the PA group had more severe disease (higher exacerbation, severity scores) and reduced bronchoalveolar lavage fluid (BALF) microbial α/β diversity (marked by *Pseudomonas* dominance and suppressed symbionts like *Streptococcus*). These findings indicate that *P. aeruginosa* reshapes the microecology and is associated with airway microbial imbalance. This study confirms that *P. aeruginosa* colonization is a key factor in NCFB disease progression and airway microecological imbalance, highlighting reduced colonization and restored homeostasis as precision intervention strategies that inform targeted therapies.

Keywords: 16S rRNA sequencing; Pseudomonas aeruginosa; bronchoalveolar lavage fluid; non-cystic fibrosis bronchiectasis.

Conflict of interest statement

The authors declare no conflict of interest.

- 37 references
- 5 figures

Supplementary info

MeSH terms, Grants and fundingExpand

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Review

Eur Respir J

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Novel translational pulmonary MRI in paediatrics: a review of the past 10 years

Alexander M Matheson[1], Matthew M Willmering[1 2], Gael Dournes[3], Marc Humbert[4 5], Mark O Wielpütz[6], Mark L Schiebler[7], Jason C Woods[8 2 9]

Affiliations Expand

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Abstract

Paediatric respirology presents distinctive challenges relative to adult care: patients have difficulties performing pulmonary function tests, more frequently have trouble complying, have distinct pathophysiology relative to adults and have diseases that occur alongside normal or abnormal lung development. Understanding and disentangling the effects of disease and growth are important to identifying the pathophysiology that drives paediatric disease and affects the quality of life of this vulnerable group. Magnetic resonance imaging (MRI) can provide detailed images of lung structure and function using either standard ^{1}H (proton) MRI or hyperpolarised ^{129}Xe (xenon) gas MRI. Radiation exposure in this vulnerable group is problematic, but MRI is ionising radiation-free and safe to perform in children and neonates. Exam acquisition speed has improved with some scans taking as little as 4 s. Structural imaging using ^{1}H MRI can assess the airways and locate consolidation, mucus plugging and bronchiectasis. Dynamic structural imaging can extract information about lung motion and airway collapse, and can even be used to extract ventilation and perfusion information. In the past decade, pulmonary MRI has been examined in a wide variety of diseases, including asthma, bronchopulmonary dysplasia, bronchiolitis obliterans, childhood interstitial lung diseases, cystic fibrosis and multiple rare lung diseases. This multitechnique approach using MRI provides a holistic view that elucidates underlying disease mechanisms and connects them to patient outcomes and treatment response. This review will examine developments in pulmonary MRI over the past decade, with the aim of illustrating recent advances in research and how these discoveries are beginning to be applied to clinical settings.

Conflict of interest statement

Conflict of interest: A.M. Matheson reports a Natural Sciences and Engineering Council of Canada Fellowship. M.M. Willmering reports consultancy fees from Polarean Plc. G. Dournes reports payment or honoraria for lectures, presentations, manuscript writing or educational events from fees from Boehringer Ingelheim, AstraZeneca, Sanofi and Vertex Pharmaceuticals. M. Humbert reports grants from Gossamer and Merck, consultancy fees from 35Pharma, AOP Orphan, Chiesi, Ferrer, Gossamer, Inhibikase, Johnson & Johnson, Keros, Liquidia, Merck, Novartis, Regeneron, Respira, Pfizer, Pulmovant and United Therapeutics, payment or honoraria for lectures, presentations, manuscript writing or educational events from Merck, participation on a data safety monitoring board or advisory board with 35Pharma, Aerovate, Janssen, Inhibikase, Keros, Merck, Novartis and United Therapeutics, and is a Section Editor for the European Respiratory Journal. M.O. Wielpütz reports grants from Vertex Pharmaceuticals, and consultancy fees from Vertex Pharmaceuticals and Boehringer Ingelheim. M.L. Schiebler reports

stock (or stock options) with Stemina Biomarker Discovery, Inc. and Elucent Medical, Inc. J.C. Woods reports consultancy fees from Polarean Plc.

Supplementary info

Publication types, MeSH terms, SubstancesExpand