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

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Cell Death Discov

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. 2026 Mar 20.

doi: 10.1038/s41420-026-03020-2. Online ahead of print.

Endothelial cell senescence shapes T cell activity in late-stage of chronic obstructive pulmonary disease

Chae Min Lee [#1,2], Jongchan Kim [#3], Junhyup Song [4], Andrew Sehoon Kim [5], Sugyeong Jo [1,2], Nahee Hwang [2], Jae Woong Jeong [6], Minki Kim [1,2], Sung Jae Shin [1,6,7], Sungsoon Fang [8,9], Bo Kyung Yoon [10,11,12]

Affiliations Expand

- **PMID: 41862441**

- **DOI: 10.1038/s41420-026-03020-2**

Abstract

Chronic obstructive pulmonary disease (COPD) is a leading cause of death with few effective therapies. While clinical staging distinguishes mild to very severe disease, recent molecular and single-cell studies have revealed that progression involves distinct reprogramming of cellular and immune pathways rather than a simple linear

escalation of inflammation. Yet, most studies have analyzed COPD without stratifying by stage, obscuring mechanisms specific to disease severity. To address this, we investigated serum proteomic profiles from the UK Biobank and applied machine learning to identify stage-specific protein signatures across COPD progression. Integration with single-cell and bulk transcriptomic datasets revealed that in severe COPD, endothelial cells exhibit a senescent phenotype characterized by elevated interleukin-6 (IL6) expression. Endothelial-derived IL6 correlated with reduced type 1 helper T cell (Th1) abundance and impaired interferon-γ signaling, indicating suppression of Th1-mediated immunity. These findings position endothelial senescence-driven IL6 signaling as a key pathogenic mechanism and potential therapeutic target in late-stage COPD.

Conflict of interest statement

Competing interests: The authors declare no competing interests.

- 76 references

Supplementary info

Grants and fundingExpand

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2

Value Health

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. 2026 Mar 18:S1098-3015(26)00103-8.

doi: 10.1016/j.jval.2026.03.003. Online ahead of print.

Informing the US Medicare drug price negotiation for Trelegy Ellipta and Breo Ellipta: Evaluating the impact of real-world evidence

Marina Richardson [1], Abigail C Wright [2], Shahariar Mohammed Fahim [2], Jeffrey A Tice [3], Kangho Suh [4], Josh J Carlson [5], David M Rind [2]

Affiliations Expand

- PMID: 41862130

- DOI: 10.1016/j.jval.2026.03.003

Abstract

Objectives: The Institute for Clinical and Economic Review (ICER) conducted a special assessment of Trelegy Ellipta and Breo Ellipta for chronic obstructive pulmonary disease (COPD) to inform the CMS drug price negotiation process. In this manuscript, we examine the type, quality, and impact of the observational evidence included.

Methods: We described the type of observational evidence used in ICER's assessment with a primary focus on adherence and persistence data. Risk of bias was assessed using the ROBINS-I.

Results: Observational data included in ICER's review primarily informed the assessment of differential adherence and persistence between single and multiple inhaler products. The majority of studies were real-world evidence (RWE), utilizing claims or electronic health record data, and were deemed to be at moderate or severe risk of bias. RWE reported that Trelegy Ellipta and Breo Ellipta were associated with greater adherence and persistence compared to generic multiple-inhaler or multiple-daily-dosing alternatives. Persistence data were critical for differentiating between products in the cost-effectiveness analysis; however, persistence was based on prescription refills which is an imperfect measure of treatment continuation.

Conclusions: RWE played a critical role in evaluating the comparative clinical and cost-effectiveness of Trelegy Ellipta and Breo Ellipta to inform CMS drug price negotiations. Differences in persistence informed differential pricing to generic multiple-inhaler or multiple-daily-dosing alternatives, demonstrating how data collected outside of clinical trials can inform value assessments. However, RWE limitations and the lack of evidence linking adherence or persistence to clinical outcomes highlight the need for future research.

Keywords: Breo Ellipta; COPD; Inflation Reduction Act; Trelegy Ellipta; health technology assessment; observational data; real-world evidence.

. 2026 Mar 18:108781.

doi: 10.1016/j.rmed.2026.108781. Online ahead of print.

Cross-exclusion of patients with chronic obstructive pulmonary disease and heart failure in randomized controlled drug trials

Mert Kaşkal [1], Dennis Wat [2], Dilip Nazareth [2], Gregory Y H Lip [3], Freddy Frost [4]

Affiliations Expand

- PMID: 41862104

- DOI: 10.1016/j.rmed.2026.108781

Abstract

Chronic obstructive pulmonary disease (COPD) and heart failure (HF) frequently coexist, yet patients with both conditions are often excluded from randomized controlled trials(RCTs). We conducted a secondary analysis of 72 RCTs (28 COPD/COPD exacerbations (ECOPD); 44 HF) including 181,325 participants. In COPD/ECOPD trials, only 10.8% of participants with HF, while 6.9% explicitly excluded them. In HF trials, 31.4% included participants with COPD, whereas 47.2% excluded them. There is frequent cross-exclusion of patients with coexisting COPD and HF in RCTs, limiting the applicability of current evidence to this clinically significant population with both conditions, and underscoring the need for more inclusive trial designs.

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.

doi: 10.1080/21645515.2026.2638638. Epub 2026 Mar 20.

Incidence of respiratory syncytial virus and influenza: A Danish nationwide cohort study

Maria João Fonseca [1], Stanislava Bratković [2], Mikkel Pedersen [3], Mathilde Kany [3], Triantafyllos Pliakas [4 5], Rachel Reeves [6], Alen Marijam [4], Elisa Turriani [7], Nikoline Vestergaard Dich [2], Yunus Çolak [8], Marie Helleberg [9 10]

Affiliations Expand

- PMID: 41860582

- DOI: 10.1080/21645515.2026.2638638

Abstract

Respiratory syncytial virus (RSV) is, like influenza, one of the most common causes of severe acute respiratory infections (ARIs) in adults; however, its incidence across different risk and age groups is unknown. We estimated the incidence of registered ARIs in Danish adults, focusing on RSV and contextualizing with influenza. We conducted a nationwide cohort study in Denmark, including all adults aged ≥18 y with a registered ARI, during the 2011/12 to 2022/23 seasons. We estimated the incidence (per 100,000 person-years) of ARI overall and ARI attributable to RSV or influenza, overall and stratified by sex, age, and comorbidity. We identified 962,858 ARIs, of which 10,437 (1.1%) were attributed to RSV and 62,869 (6.5%) to influenza. The ARI incidence increased over time (range: 1,272-2,144), including a rise in RSV incidence (range: 0.2-91.6), while influenza incidence fluctuated (range: 6.7-322.0). In the 2022/23 season, RSV incidence was higher among females, older adults (198.7 in ≥60-y-olds, and 303.2 in ≥75-y-olds), and those with comorbidities, especially hematologic disease (868.6) and chronic obstructive pulmonary disease (679.5). Although influenza incidence was generally higher than RSV, the incidences were comparable for older adults and those with comorbidities. In conclusion, RSV is an important cause of ARIs among adults, comparable to influenza, particularly in older adults and those with comorbidities. These findings underscore the substantial burden of RSV that is relevant for public health planning and clinical decision-making, particularly given the recent approval of three highly effective RSV vaccines.

Keywords: Acute respiratory infection; RSV; disease burden; incidence; influenza; respiratory syncytial virus; vaccination.

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BMC Geriatr

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. 2026 Mar 19.

doi: 10.1186/s12877-026-07334-9. Online ahead of print.

Health outcomes of self- and family management programs among community-dwelling older people with chronic obstructive pulmonary disease: a randomized controlled trial

Theepapha Jamkrajang [1], Doungrut Wattanakitkrileart [2], Virapun Wirojratana [1], Pratana Satitvipawee [3], Wanchai Dejsomritrutai [4]

Affiliations Expand

- PMID: 41857553

- DOI: 10.1186/s12877-026-07334-9

No abstract available

Keywords: Chronic obstructive pulmonary disease; Community-dwelling older people; Dyspnea; Family functioning; Mobile technology; Self-family management program.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study received ethical approval from the Institutional Review Board, Faculty of Nursing, Mahidol University (COA No. IRB-NS2021/613.1904), which is in full compliance with international guidelines for human research protection, including the Declaration of Helsinki, the Belmont Report, the CIOMS Guidelines, and the International Conference on Harmonization in Good Clinical Practice (ICH-GCP). All participants and their family members provided written informed consent before participating in the study. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- 50 references

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Review

Breathe (Sheff)

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. 2026 Mar 17;22(1):240249.

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Bronchoscopic endobronchial valves

Tugba Cosgun [1], Halit Yardimci [2], Çağatay Tezel [1]

Affiliations Expand

- PMID: 41853060
- PMCID: PMC12993746
- DOI: 10.1183/20734735.0249-2024

Abstract

Bronchoscopic endobronchial valves (EBVs) have emerged as a minimally invasive alternative to surgical lung volume reduction for patients with severe emphysema. Emphysema, a progressive lung disease associated with COPD, leads to hyperinflation of the affected lung and reduces respiratory efficiency. EBVs function by limiting airflow to diseased lung segments, causing atelectasis of the emphysematous lung, and allowing healthier lung regions to expand, thereby improving overall pulmonary function. Two primary EBV systems, Zephyr and Spiration valves, have demonstrated efficacy in clinical trials. The Zephyr valve has been associated with improved forced expiratory volume in 1 s, 6-min walk distance and quality-of-life metrics in patients with heterogeneous emphysema. Similarly, the Spiration Valve System has shown promising results, including sustained pulmonary function improvements and symptom relief. The success of EBV therapy depends on careful patient selection, including assessment of interlobar fissure integrity and collateral ventilation using imaging techniques and the Chartis system. Common complications include pneumothorax, valve migration and airway infections, necessitating careful monitoring and follow-up. Ongoing research aims to optimise patient selection, refine procedural techniques and investigate adjunct therapies. As evidence supporting EBVs continues to grow, these devices hold significant potential for improving the quality of life in patients with severe emphysema who are not candidates for surgical intervention.

Conflict of interest statement

Conflict of interest: The authors have nothing to disclose.

- 44 references
- 1 figure

Supplementary info

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Respir Res

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. 2026 Mar 18.

doi: 10.1186/s12931-026-03632-3. Online ahead of print.

Blood cell ratio biomarkers of systemic inflammation in chronic obstructive pulmonary disease

Kaman So [1], Aabida Saferali [1], Jeong H Yun [1], Min Hyung Ryu [2], Enrico Schiavi [3], Peter J Castaldi [1], Lisa Ruvuna [4], Russell P Bowler [4], Jeffrey L Curtis [5], Craig P Hersh [6]

Affiliations Expand

- PMID: 41851771

- DOI: 10.1186/s12931-026-03632-3

Free article

No abstract available

Keywords: COPD exacerbation; Lymphocytes; Neutrophils; Platelets; Proteomics; RNA-sequencing.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: COPDGene was approved by the Institutional Review Board at Mass General Brigham and all participating centers. The research was conducted in accordance with the Belmont Report. Consent for publication: Not applicable. Competing interests: JHY reports consulting fees from Bridge BioTherapeutics and serving on an Advisory Board for Genentech. PJC reports grants from Sanofi and Bayer, and consulting fees from Verona Pharma and Genentech. JLC reports grants from the COPD Foundation, consulting fees from AstraZeneca and participation on Data Safety Monitoring Board or Advisory Board for Novartis and Genetech. CPH reports grants from the Alpha-1 Foundation and Bayer, and consulting fees from Apogee Therapeutics, AstraZeneca, Chiesi, Genentech, Ono Pharma, Sanofi, Takeda, and Verona Pharma. None of the other authors report any conflicts of interest.

- **43 references**

Supplementary info

Grants and fundingExpand

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BMJ Open Respir Res

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. 2026 Mar 18;13(1):e003807.

doi: 10.1136/bmjresp-2025-003807.

Indoor air quality and its impacts on asthma and COPD

Tun Zan Maung [1], Rose Aning [2], Michael Newnham [3], Eleanor Holt [4], Christian Pfrang [4], Alice Margaret Turner [3]

Affiliations Expand

- **PMID: 41850737**
- **DOI: 10.1136/bmjresp-2025-003807**

Free article

Abstract

Background: Though indoor air pollution is associated with high mortality and economic impact globally, it is relatively understudied. Knowledge gaps remain regarding exposure to peak pollutant concentrations and their effects, especially among patients with respiratory diseases who are susceptible to a greater impact.

Methods: This 2-week cohort study monitored indoor air quality and symptoms in patients with asthma and chronic obstructive pulmonary disease. Statistical process control charts were used to track hourly pollutant peaks, while notched box plots visualised significant particulate matter 2.5 ($PM_{2.5}$) peaks over 6-hour periods. Linear mixed-effects and autoregressive models were used to assess the impact of $PM_{2.5}$ on symptoms.

Results: The analyses included 30 participants. Hourly plots revealed that 43.3% experienced $PM_{2.5}$ and PM_{1} peaks above the upper control limit between 6 pm and 9 pm, with 33.3% occurring specifically at 19:00 hours, consistent with cooking as a source of particulates. There were also a few peaks between 10 am and 12 noon. Peaks recorded between midnight and 5 am were minimal, corresponding to low activity during sleep. Smokers exhibited higher average pollutant levels than non-smokers. On average, participants experienced four to six pollutant peak periods exceeding the WHO 2021 air quality guidelines. No statistically significant association was found between $PM_{2.5}$ and asthma symptoms ($p>0.05$), although a weak relationship was observed visually.

Conclusion: The data suggest that human activities significantly influence indoor air quality for PM, indicating that behavioural interventions could help optimise it.

Keywords: Asthma; Emphysema; Pulmonary Disease, Chronic Obstructive.

Conflict of interest statement

Competing interests: AMT has had grants and/or honoraria from AstraZeneca, Chiesi and GSK for work centred on the conditions in the study over the last 3 years.

Supplementary info

MeSH terms, SubstancesExpand

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BMJ Open Respir Res

. 2026 Mar 18;13(1):e003847.

doi: 10.1136/bmjresp-2025-003847.

Nationwide trends in AECOPD care in Italy before, during and after COVID-19: discrepancies between data sources and across regions

Emanuela Resta [#1], Vitaliano Nicola Quaranta [#2], Silvano Dragonieri [3], Preethymol Peter [4], Andrea Portacci [3], Silvio Tafuri [5], Paola Pierucci [6,7], Giovanna Elisiana Carpagnano [8]

Affiliations Expand

- PMID: 41850736

- DOI: 10.1136/bmjresp-2025-003847

Free article

Abstract

Background: Acute exacerbations of chronic obstructive pulmonary disease (AECOPD) are a leading cause of hospital admissions, early mortality and readmissions. Italian data are outdated and fragmented, and the impact of COVID-19 on AECOPD outcomes remains unclear.

Methods: We conducted a nationwide descriptive analysis of aggregated administrative indicators derived from two institutional sources (SDO (Schede di Dimissione Ospedaliera) and AGENAS (Agenzia Nazionale per i Servizi Sanitari Regionali)), reporting national and regional trends in hospitalisations, 30-day postdischarge mortality and 30-day readmissions for AECOPD between 2015 and 2023. Data were compared across pre-COVID (2015-2019), COVID (2020-2021) and post-COVID (2022-2023) periods and stratified by region and health district. Analyses were descriptive and based on aggregated, standardised administrative indicators, with temporal and regional comparisons across pre-COVID, COVID and post-COVID periods.

Results: AECOPD hospitalisations declined by more than 45% during 2020-2021, with only partial recovery by 2023 (-24% vs 2019). Thirty-day postdischarge mortality rose sharply during the pandemic, peaking at 13.6% in 2021 (+47% vs 2019), before returning near baseline in 2023, though excess mortality persisted in several southern regions. Thirty-day readmission rates remained stable at 12%-14% across the study period. Importantly, SDO records captured only one quarter of cases identified by AGENAS, systematically underestimating the true hospitalisation burden.

Conclusions: COVID-19 profoundly disrupted AECOPD care in Italy, exposing entrenched regional inequities and critical limitations in administrative data. These

findings call for modernisation of coding systems, strengthening of community-based respiratory care and implementation of structured discharge and follow-up pathways to ensure equity and resilience in COPD management.

Keywords: COPD Exacerbations; COPD epidemiology.

Conflict of interest statement

Competing interests: None declared.

Supplementary info

MeSH termsExpand

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EBioMedicine

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. 2026 Mar 17:126:106212.

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Long-term impact of SARS-CoV-2 on recurrent COPD exacerbations

Sonya S Henry [1], Kevin E Duong [1], Tim Q Duong [2]

Affiliations Expand

- PMID: 41849832

- DOI: 10.1016/j.ebiom.2026.106212

Free article

Abstract

Background: SARS-CoV-2 infection could increase the long-term risk of recurrent chronic obstructive pulmonary disease (COPD) exacerbations. This study

investigated the long-term risk of COPD exacerbations following SARS-CoV-2 infection, with comparisons by hospitalisation status.

Methods: We conducted a retrospective cohort study using data from a large urban academic health system (March 2020-February 2025). The final cohort comprised of 2268 hospitalised and 1471 non-hospitalised COVID-19 patients with pre-existing COPD, each matched 1:1 by propensity score with non-COVID controls. Adjusted hazard ratios (aHRs) were estimated using Andersen-Gill models, and adjusted incidence rate ratios (aIRRs) using negative binomial models. Cumulative hazards were derived from Nelson-Aalen curves. Secondary analyses evaluated socioeconomic factors and multiple sensitivity analyses assessed robustness.

Findings: Among hospitalised patients, the incidence rate of COPD exacerbations was 35.7 per 100 person-years in the COVID-19 cohort, compared to 15.9 in controls (aIRR 1.81 [95% CI, 1.45-2.26]). Among non-hospitalised patients, rates were 13.7 vs 10.6 (aIRR 1.23 [0.88-1.73]). Hospitalised patients had a higher overall hazard of recurrent COPD exacerbations (aHR 1.69 [1.36-2.10]; $p < 0.001$), with risk persisting over four years post-infection. No significant difference was observed among non-hospitalised patients. Unmet social needs increased the risk by 53% among hospitalised patients, while Medicaid or Medicare coverage more than doubled the risk among non-hospitalised patients relative to private insurance. Findings were consistent across multiple sensitivity analyses.

Interpretation: COVID-19 hospitalisation was associated with a sustained increased risk of recurrent COPD exacerbations, underscoring the need for long-term pulmonary follow-up and targeted interventions in this high-risk population.

Funding: None.

Keywords: COPD exacerbation; Pulmonary infection; SARS-CoV-2; SDOH.

Conflict of interest statement

Declaration of interests All authors declare no conflicts of interest.

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Pulmonology

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. 2026 Dec;32(1):2644005.

doi: 10.1080/25310429.2026.2644005. Epub 2026 Mar 18.

Agreement of different reference equations to classify patients with COPD as having reduced or preserved 6MWD

Sandhya Saini [1], Kanika [1]

Affiliations Expand

- PMID: 41848602

- DOI: 10.1080/25310429.2026.2644005

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12

ERJ Open Res

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. 2026 Mar 16;12(2):00660-2025.

doi: 10.1183/23120541.00660-2025. eCollection 2026 Mar.

"Breathlessness stops me doing everything": exploring the impact of chronic breathlessness due to advanced respiratory disease and exacerbating factors - a qualitative study

Charles C Reilly [1 2], Irene J Higginson [2], Anna Roach [2], Trudie Chalder [3], Katherine Bristowe [2]

Affiliations Expand

- PMID: 41846694

- PMCID: PMC12991001

- **DOI: 10.1183/23120541.00660-2025**

Abstract

Introduction: Breathlessness is a global, transdiagnostic problem, contributing to disability, reduced quality of life and higher healthcare costs. As the global population ages and multimorbidity increases, the prevalence of breathlessness is expected to rise. Therefore, there is an urgent need to co-design new services and treatments for breathlessness. To achieve this, it is essential to understand the lived experience of breathlessness. This study aimed to explore the lived experience of chronic breathlessness, focusing on its impact and contributing factors that exacerbate breathlessness.

Methods: Semi-structured telephone interviews were conducted with adults experiencing chronic breathlessness caused by advanced malignant and nonmalignant diseases (July to November 2020). The interviews were analysed using conventional content analysis.

Results: 25 patients with advanced respiratory disease and chronic breathlessness ((COPD, 13; lung cancer, 8; interstitial lung disease, 3; and bronchiectasis, 1), 17 male, median age 70 years (range 47-86), Medical Research Council dyspnoea score 3 (2 -5)) were interviewed. Four key themes were identified: 1) the impact of breathlessness on daily activities, leading to increased dependence on others; 2) the effect of breathlessness on social interactions and personal relationships, resulting in isolation; 3) the impact of living with multiple long-term conditions and environmental factors that worsen breathlessness; and 4) cognitive, affective and behavioural responses to breathlessness.

Conclusion: Breathlessness significantly disrupts daily life, limiting independence and social engagement, with psychological and behavioural responses further restricting activity. An integrated, public health approach, collaborating with housing and environmental agencies is essential to address modifiable factors and reduce the burden on individuals and healthcare systems.

Conflict of interest statement

Conflict of interest: C.C. Reilly reports support for the present study from the National Institute for Health and Care Research (NIHR) Clinical Lectureship (ICA-CL-2018-04-ST2-001) and NIHR Advanced Clinical and Practitioner Academic Fellowship (NIHR302904) and grants from King's Together: Multi and Interdisciplinary Research Scheme and Royal Brompton Hospital – King's Health Partnership Transformation funding. I.J. Higginson reports grants from the European Commission, NIHR, UKRI, Cicely Saunders International and Marie Curie, and leadership roles with NIHR (Emeritus Senior Investigator and Funding Committee Chair), King's College Hospital NHS Foundation Trust (Honorary Clinical Consultant in Palliative Medicine) and Cicely Saunders International (Scientific Director). A. Roach has no conflicts to disclose. T. Chalder reports support for the present study from NIHR Mental Health Biomedical Research Centre at South London and Maudsley NHS Foundation Trust and King's College London. K. Bristowe reports grants from NIHR, Marie Curie, MRC and EC European Commission.

- 51 references
- 1 figure

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ERJ Open Res

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. 2026 Mar 16;12(2):00939-2025.

doi: 10.1183/23120541.00939-2025. eCollection 2026 Mar.

Long-term cardiovascular risk after severe exacerbation of COPD: a population-based cohort study

Yinqi Ding [1], Jingcen Hu [1], Canqing Yu [1 2 3], Dianjianyi Sun [1 2 3], Pei Pei [2], Ling Yang [4], Yiping Chen [4], Huaidong Du [4], Zengzhi Zhang [5], Maxim Barnard [4], Junshi Chen [6], Zhengming Chen [4], Liming Li [1 2 3], Jun Lv [1 2 3 7]

Affiliations Expand

- **PMID: 41846685**
- **PMCID: PMC12991000**
- **DOI: 10.1183/23120541.00939-2025**

Abstract

Background: Exacerbation of COPD (ECOPD) has been linked to increased cardiovascular disease (CVD) risk within the first year, yet longer term risk is unclear. We aimed to investigate the short-term and long-term CVD risks after severe ECOPD.

Methods: Patients with self-reported or spirometry-detected COPD at baseline and patients with newly documented COPD during follow-up were included from the China Kadoorie Biobank. Multiple data sources were used to collect information on ECOPD hospitalisation and CVD incidence during follow-up. Time-dependent Cox

regression models were used to estimate the hazard ratios and 95% confidence intervals for each risk period following ECOPD compared to the baseline period.

Results: Of the 46 514 patients included, 48.2% had screen-detected COPD, 26.2% had self-reported COPD and 25.6% had newly documented COPD. During a median 11-year follow-up, 1185 acute myocardial infarction, 5778 other ischaemic heart disease, 1078 heart failure, 2390 pulmonary heart disease, 4989 ischaemic stroke and 1648 intracerebral haemorrhage cases occurred. Post-ECOPD risks of all outcomes were prominently elevated, with first-week hazard ratios (95% CI) of 8.60 (5.40-13.70), 6.68 (5.16-8.65), 10.98 (6.74-17.89), 24.76 (19.40-31.60), 3.11 (2.16-4.48) and 2.40 (1.27-4.54), respectively. The risks diminished thereafter but could persist for 6 years or longer. All three categories of patients with COPD faced increased risks of most outcomes, with patients with COPD at baseline bearing higher post-ECOPD risks of other ischaemic heart disease and pulmonary heart disease.

Conclusion: CVD risks increased considerably after ECOPD, with risks of cardiac diseases and ischaemic stroke increased for 6 years or longer. Patients with screen-detected COPD had a similar burden of ECOPD and subsequent CVD to patients with doctor-diagnosed COPD.

Conflict of interest statement

Conflict of interest: The authors have nothing to disclose.

- 36 references
- 4 figures

Full text links

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BMC Pulm Med

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. 2026 Mar 17.

doi: 10.1186/s12890-026-04240-z. Online ahead of print.

Complementary assessment of cardiopulmonary morphometric changes in COPD using 3D multidetector computed tomography: relationship with functional indices

Neslihan Köse Kabil [1], Esin Erbek [2], Güneş Bolatlı [2]

Affiliations Expand

- **PMID: 41845315**

- **DOI: 10.1186/s12890-026-04240-z**

Free article

No abstract available

Keywords: Chronic Obstructive Pulmonary Disease; Global Initiative for Chronic Obstructive Lung Disease; Pulmonary Hypertension; Spirometry; Thoracic Multidetector Computed Tomography.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The ethics review board approved from The Ethıcs Commıttee Of Yalova Unıversıty with the protocol number 2024/223. Our study adhered to the Declaration of Helsinki. Informed consent was obtained from all patients for being included in the study. Consent for publication: All participants gave permission for publication. Competing interests: The authors declare no competing interests.

- **32 references**

Full text links

Cite

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BMC Palliat Care

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. 2026 Mar 17.

doi: 10.1186/s12904-026-02064-6. Online ahead of print.

Signs and symptoms indicating the transition to the palliative phase in patients with COPD and heart failure in primary healthcare: a mixed-methods study

Evi Swinkels [1 2], Gerda H van den Berg [3 4 5], Maurice Magnée [6], Myrna Pelgrum-Keurhorst [4 7], Getty Huisman-de Waal [3], Betsie Gi van Gaal [6]

Affiliations Expand

- **PMID: 41845282**

- **DOI: 10.1186/s12904-026-02064-6**

Free article

No abstract available

Keywords: Advance Care Planning; COPD; Heart Failure; Machine learning; Mixed methods; Palliative Care; Primary Care Nursing; Signs and symptoms.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The study was conducted in accordance with the Declaration of Helsinki [37]. The study protocol was reviewed and approved by the Human Ethics Committee in Arnhem-Nijmegen, the Netherlands (approval number 2023–16249). The study did not fall within the scope of the Medical Research Involving Human Subjects Act. All participants provided informed consent to participate prior to data collection. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- **56 references**

Supplementary info

Grants and fundingExpand

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Semin Respir Crit Care Med

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. 2026 Mar 17.

doi: 10.1055/a-2826-5752. Online ahead of print.

Acute Exacerbation of Chronic Obstructive Pulmonary Disease: Pharmacological Treatment of AECOPD New Perspectives

Jonathan Calvello [1], Michael Avaricio [2], Paolo Ruggeri [3], Antonio Esquinas [4], Bushra Mina [5]

Affiliations Expand

- **PMID: 41844237**

- **DOI: 10.1055/a-2826-5752**

Abstract

Background: Acute exacerbations of chronic obstructive pulmonary disease (AECOPD) are major drivers of morbidity, mortality, disease progression, and healthcare utilization worldwide. Evolving definitions of COPD and exacerbations, along with emerging evidence on risk stratification and treatment optimization, have prompted updates in clinical practice, most recently reflected in the 2026 Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines.

Objective: This review summarizes contemporary perspectives on AECOPD, with a focus on updated definitions, epidemiology, predictors, clinical impact, and current preventive therapies. pharmacological and non-pharmacological management strategies, including emerging Methods: A narrative review of published literature, international guidelines, and major clinical trials was conducted, emphasizing evidence relevant to the assessment, treatment, and prevention of AECOPD. Particular attention was given to severity classification and guideline-directed therapeutic approaches.

Results: AECOPD is associated with substantial short- and long-term mortality, accelerated lung function decline, increased cardiovascular risk, and high readmission rates. The 2026 GOLD guidelines lower the threshold for high-risk classification, recognizing that even a single moderate exacerbation increases future risk. Acute management remains centered on short-acting bronchodilators, short courses of 2 systemic corticosteroids, and antibiotics when indicated, with treatment of intensity guided by clinical severity and physiological derangements. Adjunctive supportive measures and early post-discharge interventions are critical to improving outcomes. While biologics, macrolides, Roflumilast, and Ensifentrine have no established role in the acute setting, they play an important role in exacerbation prevention as part of individualized, biomarker-informed maintenance strategies.

Conclusions: AECOPD should be viewed as a sentinel event that necessitates both effective acute management and reassessment of long-term therapy. Early intervention, severity-based treatment, and post-exacerbation optimization of maintenance therapy are essential to reduce recurrence, limit disease progression, and improve survival and quality of life in patients with COPD.

Conflict of interest statement

The authors declare that they have no conflict of interest.

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BMC Med

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The timing of the commencement of pulmonary rehabilitation in hospitalized patients with acute exacerbation of COPD: a systematic review and network meta-analysis

Peilin Jia [#1], Hailong Zhang [#2 3], Ya Li [1], Zhaoxu Yao [1], Longyu Wang [1]

Affiliations Expand

- PMID: 41840577

- DOI: 10.1186/s12916-026-04774-3

Free article

Abstract

Background: Pulmonary rehabilitation (PR) is an effective intervention for patients with acute exacerbation of chronic obstructive pulmonary disease (AECOPD) following hospitalization. However, the optimal timing for initiating PR after admission remains controversial. This study conducted a systematic review and network meta-analysis to evaluate the therapeutic effects of initiating PR at different time points, with the aim of providing evidence-based recommendations to inform clinical decision-making and guideline development.

Methods: Randomized controlled trials (RCTs) on PR following AECOPD were systematically searched in the PubMed, Embase, Web of Science, and Cochrane Library databases. The primary outcome was hospital readmissions. Prespecified secondary outcomes were: exercise capacity (six-minute walk test, 6MWT), lung function (forced expiratory volume in one second, percent predicted, FEV_1%), health-related quality of life (St. George's Respiratory Questionnaire, SGRQ), Dyspnoea (modified Medical Research Council scale, mMRC; modified Borg scale, mBorg), mortality, and adverse events. Data analysis was conducted using R software and Stata. Study quality and risk of bias were assessed using the TESTEX tool and the Cochrane ROB 2 tool. This study was prospectively registered in the PROSPERO database (CRD42024550770).

Results: A total of 26 studies involving 1,800 patients evaluated four PR initiation time points. Network meta-analysis showed that PR initiated within 2 weeks after discharge was statistically effective in reducing hospital readmissions, alleviating mMRC, and improving SGRQ compared with usual care, and it ranked highest for these outcomes. In contrast, initiating PR after 48 h of hospital admission was statistically effective in improving 6MWT and ranked highest for this outcome. No statistically significant differences were observed across initiation timings for mortality, predicted FEV_1%, or dyspnoea mBorg scale.

Conclusions: Initiating PR within two weeks post-discharge is most effective for reducing readmissions, alleviating dyspnoea, and enhancing quality of life, whereas initiating after 48 h of admission provides greater benefits for improving exercise capacity. These findings support a pragmatic rehabilitation pathway combining early in-hospital and structured post-discharge PR. Further high-quality RCTs are needed to confirm optimal timing strategies.

Keywords: Chronic obstructive pulmonary disease; Network Meta-analysis; Pulmonary Rehabilitation; Timing.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: Not applicable. This study is a network meta-analysis using only published data; therefore, ethical approval and consent to participate were not required. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- **61 references**

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Grants and fundingExpand

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Crit Care Med

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doi: 10.1097/CCM.0000000000007072. Online ahead of print.

Inhaled Antibiotics to Treat Ventilator-Associated Pneumonia: A Systematic Review and Meta-Analysis

Shan Lyu [1], Jian Luo [2], Ping Liu [3], Xiaojing Qin [4], Wanjia He [5], Guoqiang Jing [6], Stephan Ehrmann [7 8], Jie Li [4]

Affiliations Expand

- PMID: 41837717

- DOI: 10.1097/CCM.0000000000007072

Abstract

Objectives: To assess the effects of adjunctive inhaled antibiotics in treating ventilator-associated pneumonia (VAP).

Data sources: We searched PubMed, Web of Science, Embase, Cochrane Library, and ClinicalTrials.gov through May 31, 2025.

Study selection: We included randomized controlled trials (RCTs) and nonrandomized studies comparing adjunctive inhaled antibiotics with placebo/blank or IV antibiotics for VAP treatment.

Data extraction: Two groups independently screened studies, extracted data, and assessed risk of bias. Analyses used random effects models. Subgroup analyses, meta-regression, trial sequential analysis, and the Grading of Recommendations Assessment, Development, and Evaluation were performed.

Data synthesis: We included 32 RCTs in the primary analysis and 41 non-RCTs in sensitivity analysis. Compared with placebo/blank, inhaled antibiotics significantly improved clinical cure (16 RCTs; n = 1425; risk ratio [RR], 1.24; 95% CI, 1.07-1.43) and reduced all-cause mortality (21 RCTs; n = 1855; RR, 0.84; 95% CI, 0.71-0.98), with consistent findings in sensitivity analyses including non-RCTs. These benefits were significant in VAP-only patients (clinical cure: 11 RCTs; n = 775; RR, 1.29; 95% CI, 1.10-1.52 and all-cause mortality: 15 RCTs; n = 1152; RR, 0.77; 95% CI, 0.65-0.90), but not in studies including mixed pneumonia populations. Meta-regression confirmed VAP-only population as a significant effect modifier. Inhaled antibiotics also improved microbiological eradication (20 RCTs; n = 1805; RR, 1.42; 95% CI, 1.27-1.58) and reduced emergence of new drug resistance (four RCTs; n = 182; RR, 0.20; 95% CI, 0.06-0.64). No differences were found in ICU length of stay, ventilator duration, or other adverse events. Compared with IV antibiotics, inhaled antibiotics shortened ventilator duration (three RCTs; n = 322; mean difference, -2.11 d; 95% CI, -3.73 to -0.49 d), and reduced nephrotoxicity (three RCTs; n = 292; RR, 0.42; 95% CI, 0.26-0.68).

Conclusions: Compared with placebo/blank, adjunctive inhaled antibiotics improve clinical cure and microbiological eradication, and may reduce mortality, particularly in VAP-only patients. Exploratory analyses based on limited data suggest potential advantages over IV therapy, including shorter ventilator duration and lower nephrotoxicity, warranting further high-quality trials.

Keywords: aerosol drug therapy; inhaled antibiotics; meta-analysis; treatment; ventilator-associated pneumonia.

Conflict of interest statement

Dr. Li's institution received funding from the American Association for Respiratory Care; She received funding from the American Association for Respiratory Care, MEKICS, Chronic Obstructive Pulmonary Disease Foundation, Vincent, and Fisher & Paykel Healthcare; she disclosed that she is a section editor of Respiratory Care; and she disclosed off-label use of inhaled antibiotics. Drs. Li and Ehrmann received funding from Aerogen. Dr. Ehrmann's institution received funding from Fisher & Paykel. The remaining authors have disclosed that they do not have any potential conflicts of interest.

- **55 references**

Full text links

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Ann Am Thorac Soc

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What the BMI genes are telling us about COPD phenotypes: emphysema for the thin and airways disease for the heavy

Arghavan Memarzia [1 2], Don D Sin [1 2]

Affiliations Expand

- **PMID: 41837380**

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doi: 10.1038/s41598-026-42291-8. Online ahead of print.

Association between β-blocker use and outcomes in patients with heart failure and chronic obstructive pulmonary disease: a retrospective cohort study

Guangdong Wang [#1], Dong Shang [#1], Tingting Liu [1], Wenwen Ji [1], Tingting Li [1], Zhuoyang Wang [1], Tinghua Hu [2], Zhihong Shi [3]

Affiliations Expand

- PMID: 41833954

- DOI: 10.1038/s41598-026-42291-8

Free article

Abstract

Heart failure (HF) and chronic obstructive pulmonary disease (COPD) frequently co-occur, complicating treatment. Concerns about respiratory complications often lead to underuse of β-blockers in this population. This study aims to assess the relationship between β-blocker use and clinical outcomes in patients with HF and COPD. This retrospective cohort study utilized the MIMIC-IV v2.2 database. Adult ICU patients with documented HF and COPD diagnoses were identified using international classification of diseases (ICD-9 and ICD-10) diagnostic codes. Propensity score matching (PSM) was applied to reduce confounding bias. Cox regression was used to estimate hazard ratios (HRs), with additional regression and doubly robust methods applied for validation. Subgroup analyses were performed to determine whether the results were consistent across different patient groups. After PSM, β-blocker use was associated with a significantly lower 28-day mortality rate (17.51 vs. 23.98%, P = 0.021), with a HR of 0.667 (95% CI 0.491-0.906). Similar reductions were observed in hospital mortality (13.91 vs. 20.62%, P = 0.010), 60-day mortality (24.46 vs. 30.94%, P = 0.037), and 90-day mortality (27.58 vs. 34.77%, P = 0.025). However, β-blocker users had longer ICU and hospital stays. Subgroup analysis revealed a significant interaction between β-blocker use and mechanical ventilation, with greater mortality reduction observed in ventilated patients (HR:

0.31, 95% CI 0.17-0.56). β-blocker therapy during ICU stay was observed to be associated with improved short-term survival among patients with HF and COPD. These findings suggest that β-blockers may provide substantial survival benefits in this high-risk patient population, despite concerns regarding potential respiratory side effect.

Keywords: COPD; Heart failure; MIMIC-Ⅳ database; Mortality; β-blockers.

Conflict of interest statement

Declarations. Competing interests: The authors declare no competing interests. Ethics statement: The MIMIC-IV database is a publicly available, de-identified critical care database. The establishment and use of this database were approved by the Institutional Review Boards of the Massachusetts Institute of Technology and Beth Israel Deaconess Medical Center (IRB approval number: 2001P-001699/14). The requirement for informed consent was waived because all patient data were fully de-identified. The authors completed the Collaborative Institutional Training Initiative (CITI) program and obtained certification for access to the MIMIC-IV database (Certification ID: 60106105). All data extraction and analyses were conducted in compliance with the PhysioNet Credentialed Health Data Use Agreement.

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Multi-omics biomarker detection in smoking induced COPD

Rahamat Unissa Syed [1], Mohammed Khaled Bin Break [2], Rihab Akasha [3], Nancy Mohammad Elafandy [3], Sally Hassan Abobaker [4], Amna Abakar Suleiman Khalifa [3], Nayla Ahmed Mohammed Aboshouk [3], Afrah Nashmi Alghaythi [5], Lama

Abdullah Altwalah [5], Rawabi Mohammed Menwer Aldhafeeri [5], Mohd Sajjad Ahmad Khan [6], Gaurav Gupta [7]

Affiliations Expand

- PMID: 41605376

- DOI: 10.1016/j.cca.2026.120868

Abstract

Chronic obstructive pulmonary disease (COPD) is marked by heterogeneity, and traditional spirometric biomarkers fall short of fully capturing its underlying molecular complexity. This review discusses recent developments in multi-omics profiling, such as transcriptomics, proteomics, metabolomics, and epigenomics/acetylomics, to define biologically meaningful COPD endotypes and enhance their clinical categorization. Reproducible circulating protein markers identified in proteomic studies include surfactant protein D (SP-D), club cell secretory protein (CC16), fibrinogen, and inflammatory cytokines, which predict disease severity, risk of exacerbation, and mortality. Further evidence of dysregulated histone/protein acetylation and other post-translational modifications in chronic inflammation, steroid resistance, and disease progression is provided by epigenomic studies (such as DNA methylation, non-coding RNAs, and chromatin remodeling) and acetylomic analyses. Notably, integrative multi-omics solutions exhibit better outcomes than single-biomarker solutions by allowing the identification of molecular endotypes that are more likely to accommodate clinical heterogeneity. Nevertheless, it is significantly constrained by cohort and platform heterogeneity, including factors such as smoking exposure, age, comorbidities, treatment, and sample processing methods. Overall, the existing evidence highlights the importance of multi-omics integration in the further development of precision diagnostics and individualized management of COPD, bridging the gap between molecular pathology and clinical decision-making.

Keywords: Biomarkers; COPD; Diagnostics; Multi-omics; Precision medicine; Proteomics; Smoking.

Conflict of interest statement

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

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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

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BMC Geriatr

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doi: 10.1186/s12877-026-07361-6. Online ahead of print.

Medication communication and management: exploring the experiences and observations of older patients with multimorbidity and their families at hospital discharge

Fatemeh Barzegarkalmeri [1], Elizabeth Manias [2 3], Snehlata Bhartu [4], Kevin Mc Namara [5]

Affiliations Expand

- PMID: 41862815

- DOI: 10.1186/s12877-026-07361-6

No abstract available

Keywords: Experience; Family members/carers; Hospital discharge; Hospital-at-Home; Medication communication; Medication therapy management; Multimorbidity; Older patient; Patient participation.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical approval was obtained from the relevant ethics committees, and informed consent was obtained from all participants prior to their inclusion in the study. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- 48 references

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Review

Nat Rev Dis Primers

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. 2026 Mar 19;12(1):13.

doi: 10.1038/s41572-026-00687-w.

Type 2 diabetes mellitus

Melanie J Davies [1 2], Soo Lim [3], Tommy Slater [4 5], Jonathan Goldney [4 5], Athena Philis-Tsimikas [6], Denise R Franco [7], Roberta Lamptey [8], Thomas Yates [4 5], Tsvetalina Tankova [9 10], Ildiko Lingvay [11]

Affiliations Expand

- **PMID: 41857071**

- **DOI: 10.1038/s41572-026-00687-w**

Abstract

Type 2 diabetes mellitus (T2DM) is a chronic, progressive disease driven by a complex interplay of genetic, biological, behavioural and social factors. The epidemiology of T2DM has shifted considerably, largely attributable to increasing obesity rates. Furthermore, T2DM prevalence is increasing in younger people (diagnosis <40 years of age; early-onset T2DM), which is associated with more aggressive disease progression, higher risk factor burden, earlier and more severe complications, and greater lifetime morbidity than later-onset T2DM. T2DM is traditionally associated with a high risk of microvascular and macrovascular complications, although rates of cardiovascular complications have reduced in some high-income countries. Currently, emerging and non-traditional diabetes complications, such as those related to mental health and cognitive function, are being recognized, and people with T2DM increasingly experience multimorbidity and reduced quality of life. Additionally, a growing prevalence of obesity has resulted in high rates of obesity-related complications. Novel therapies and technologies may offer considerable benefit, although socioeconomic disparities may exacerbate barriers to effective prevention and equitable access. The complex nature of T2DM and its comorbidities underscores the urgent need for a person-centred, holistic approach that integrates glucose and weight management with broader attention to comorbidities, 24-h physical behaviours, psychosocial well-being and social determinants of health.

Conflict of interest statement

Competing interests: M.J.D. has acted as a consultant/adviser and speaker for Eli Lilly and Company, Novo Nordisk and Sanofi, has attended advisory boards for AbbVie, Amgen, AstraZeneca, Biomea Fusion, Carmot/Roche, Daewoong Pharmaceutical, Sanofi, Zealand Pharma, Regeneron, GSK and EktaH and as a speaker for AstraZeneca, Boehringer Ingelheim and Zuellig Pharma. She has received grants from AstraZeneca, Boehringer Ingelheim and Novo Nordisk. S.L. is an advisory board member for Novo Nordisk and AstraZeneca, and has served on the speakers' bureau of Novo Nordisk, Sanofi, Boehringer Ingelheim and AstraZeneca. He has received research funding from Chong Kun Dang and Daewoong Pharma. A.P.-T. performs research and serves as an adviser on behalf of their employer for Abbvie, Corcept, Dexcom, Eli Lilly and Company, Genentech, Medtronic, Novo Nordisk, Regeneron and Roche; there has been no direct or indirect transfer of funds. D.R.F. has served as an advisor to Eli Lilly and Company, Novo Nordisk, Abbott, Medtronic, AstraZeneca and Embecta, has received research support from Eli Lilly and Company and Novo Nordisk, and has received fees for speaking from AstraZeneca, Eli Lilly and Company, Abbott, Medtronic and Novo Nordisk. T.Y. has received investigator-initiated funding from AstraZeneca, contracted research funding from the Reinsurance Group of America and has acted as a consultant for Regeneron. I.L. received research funding (paid to institution) and/or product from Novo Nordisk, Boehringer Ingelheim, Dexcom, Roche, Pfizer and Eli Lilly and Company. I.L. received research-related consulting fees (paid to institution) from Novo Nordisk, advisory/consulting fees and/or other support from Aadvarak Therapeutics, Abbvie, Altimmune, Alveus Therapeutics, Amgen, Antag Therapeutics, AstraZeneca, Bain Capital, Bayer, Betagenon AB, Bioio, Biomea, Boehringer Ingelheim, Boston Scientific, Carmot, Corxel, Cytoki Pharma, Eli Lilly and Company, Genentech, Intercept, Janssen/J&J, Juvena, Keros Therapeutic, Mediflix, Merck, Metsera, Neurocrine, Novo Nordisk, Pfizer, Regeneron, Roche, Sanofi, Shionogi, Skye Bio, Source Bio, Structure Therapeutics, TERNS Pharma, The Comm Group, Verdiva Bio, WebMD and Zealand Pharma. T.T., R.L., T.S. and J.G. declare no competing interests.

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Self-care needs in an aged population living with a chronic condition or multimorbidity: a systematic review

Maria Marques [1], Vanessa Nicolau [2], Susana Mendonça [3 4], José Moreira [1], Rute Pires [1], Miguel Pedrosa [5 6], César Fonseca [1], Lara Pinho [3 7], Ana Escoval [2], Margarida Goes [1], Henrique Oliveira [8 9], Claúdia Mendes [1], Isabel Bico [10]

Affiliations Expand

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Keywords: Aged; Chronic condition; Multimorbidity; Needs assessment; Older adults; People-centred care; Self-care.

Conflict of interest statement

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

- 81 references

Supplementary info

Grants and fundingExpand

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ERJ Open Res

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doi: 10.1183/23120541.00660-2025. eCollection 2026 Mar.

"Breathlessness stops me doing everything": exploring the impact of chronic breathlessness due to advanced respiratory disease and exacerbating factors - a qualitative study

Charles C Reilly [1 2], Irene J Higginson [2], Anna Roach [2], Trudie Chalder [3], Katherine Bristowe [2]

Affiliations Expand

- PMID: 41846694

- PMCID: PMC12991001

- DOI: 10.1183/23120541.00660-2025

Abstract

Introduction: Breathlessness is a global, transdiagnostic problem, contributing to disability, reduced quality of life and higher healthcare costs. As the global population ages and multimorbidity increases, the prevalence of breathlessness is expected to rise. Therefore, there is an urgent need to co-design new services and treatments for breathlessness. To achieve this, it is essential to understand the lived experience of breathlessness. This study aimed to explore the lived experience of chronic breathlessness, focusing on its impact and contributing factors that exacerbate breathlessness.

Methods: Semi-structured telephone interviews were conducted with adults experiencing chronic breathlessness caused by advanced malignant and nonmalignant diseases (July to November 2020). The interviews were analysed using conventional content analysis.

Results: 25 patients with advanced respiratory disease and chronic breathlessness ((COPD, 13; lung cancer, 8; interstitial lung disease, 3; and bronchiectasis, 1), 17 male, median age 70 years (range 47-86), Medical Research Council dyspnoea score 3 (2 -5)) were interviewed. Four key themes were identified: 1) the impact of breathlessness on daily activities, leading to increased dependence on others; 2) the effect of breathlessness on social interactions and personal relationships, resulting in isolation; 3) the impact of living with multiple long-term conditions and environmental factors that worsen breathlessness; and 4) cognitive, affective and behavioural responses to breathlessness.

Conclusion: Breathlessness significantly disrupts daily life, limiting independence and social engagement, with psychological and behavioural responses further restricting activity. An integrated, public health approach, collaborating with housing and environmental agencies is essential to address modifiable factors and reduce the burden on individuals and healthcare systems.

Conflict of interest statement

Conflict of interest: C.C. Reilly reports support for the present study from the National Institute for Health and Care Research (NIHR) Clinical Lectureship (ICA-CL-2018-04-ST2-001) and NIHR Advanced Clinical and Practitioner Academic Fellowship (NIHR302904) and grants from King's Together: Multi and Interdisciplinary Research Scheme and Royal Brompton Hospital – King's Health Partnership Transformation funding. I.J. Higginson reports grants from the European Commission, NIHR, UKRI, Cicely Saunders International and Marie Curie, and leadership roles with NIHR (Emeritus Senior Investigator and Funding Committee Chair), King's College Hospital NHS Foundation Trust (Honorary Clinical Consultant in Palliative Medicine) and Cicely Saunders International (Scientific Director). A. Roach has no conflicts to disclose. T. Chalder reports support for the present study from NIHR Mental Health Biomedical Research Centre at South London and Maudsley NHS Foundation Trust and King's College London. K. Bristowe reports grants from NIHR, Marie Curie, MRC and EC European Commission.

- **51 references**
- **1 figure**

Full text links

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ERJ Open Res

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Multimorbidity patterns in elderly sleep disordered breathing patients

Jeppe Suusgaard [1 2], Christine Benn Christiansen [3 4], Morten Kjøbek Lambert [5 6], Mads Hashiba [5], Michael Ibsen [7], Rikke Ibsen [7], Jakob Kjellberg [8], Poul J Jennum [1 6]

Affiliations Expand

- **PMID: 41846689**

- PMCID: PMC12991011

- DOI: 10.1183/23120541.00721-2025

Abstract

Background: Multimorbidity (≥2 chronic diseases) is common among older adults and is linked to increased disability and mortality. Sleep disordered breathing (SDB) is underdiagnosed and has been associated with several chronic diseases. However, little is known about the specific patterns of comorbidity in the elderly. This study investigated the association between SDB and multimorbidity patterns in individuals aged ≥65 years and assessed the impact of SDB on all-cause mortality.

Methods: This registry-based case-control study utilised the Danish National Patient Registries from 2002 to 2019. Individuals aged ≥65 years diagnosed with SDB were identified and matched 1:4 with controls based on age, sex, cohabitation status and region of residence. Comorbidities were categorised using eight World Health Organization (WHO) disease chapters, and 22 specific chronic diseases were assessed within 7 years prior to SDB diagnosis. Conditional logistic regression estimated odds ratios (ORs) for comorbidities; Cox hazard regression models evaluated mortality risk.

Results: A total of 21 555 patients with SDB were matched to 86 212 controls. Patients with SDB had significantly higher odds of multimorbidity (OR 2.99, p<0.01), with increased prevalence across all eight WHO disease groups. The highest ORs were found in the cardiovascular (OR 2.52, p<0.01) and metabolic disease categories (OR 2.52, p<0.01). SDB was associated with elevated all-cause mortality (hazard ratio 1.09, p<0.01).

Conclusion: SDB in older adults is associated with multimorbidity and increased mortality, highlighting the need for increased recognition and coordinated treatment of SDB in elderly patients with multiple chronic conditions.

Conflict of interest statement

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

- 38 references
- 3 figures

Full text links

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Multimorbidity Profiles and Severe In-Hospital Outcomes in Adults With Respiratory Syncytial Virus

Kevin C Ma [1], Diya Surie [1], Yuwei Zhu [2], Carlos G Grijalva [2], Paul W Blair [3], Basmah Safdar [4], Adit A Ginde [5], Ithan D Peltan [6], Samuel M Brown [6 7], Manjusha Gaglani [8 9], Shekhar Ghamande [10], Cristie Columbus [11 12], Nicholas M Mohr [13], Kevin W Gibbs [14], David N Hager [15], Matthew E Prekker [16], Michelle N Gong [17], Amira Mohamed [17], Nicholas J Johnson [18], Jay S Steingrub [19], Akram Khan [20], Catherine L Hough [20], Abhijit Duggal [21], Alexandra June Gordon [22], Nida Qadir [23], Steven Y Chang [23], Christopher Mallow [24], Laurence W Busse [25], Jennie H Kwon [26], Matthew C Exline [27], Ivana A Vaughn [28], Mayur Ramesh [29], Adam S Lauring [30], Emily T Martin [31], Aleda M Leis [31], Jarrod M Mosier [32], Estelle S Harris [33], Adrienne Baughman [34], Cassandra Johnson [2], Jonathan D Casey [35], Natasha Halasa [36], James D Chappell [36], Nathaniel Lewis [37], Sascha Ellington [37], Wesley H Self [38], Fatimah S Dawood [1]

Affiliations Expand

- PMID: 40708527

- DOI: 10.1093/cid/ciaf405

Abstract

Background: Adults hospitalized with acute respiratory infections, including respiratory syncytial virus (RSV), often have multiple underlying conditions. Few data are available on the combined effect of conditions on risk of severe outcomes from RSV disease.

Methods: We enrolled adults hospitalized with RSV at 26 hospitals in 20 US states admitted January 2022-July 2024. Seventeen underlying conditions were selected after excluding those with rare prevalence (≤1%) or high pairwise correlation (≥0.7). We applied Bayesian profile regression to identify profiles of conditions associated with increased risk of RSV severe outcomes, stratifying among adults aged 18-59 and ≥60 years.

Results: We analyzed data from 1111 adults hospitalized with RSV (median [IQR] age, 66 [53-75] years). Among 397 adults aged 18-59 years, 2 profiles were identified: (1) minimal prevalence with fewer underlying conditions and a posterior median intensive care unit (ICU) admission risk of 21% (95% credible interval, 16%-25%) and (2) cardiorenal/diabetes with frequent heart failure, chronic kidney disease, diabetes, and increased ICU admission risk (37% [27%-48%]). Among 714 adults aged 60 years and older, 4 profiles were identified: (1) minimal prevalence

(ICU admission risk, 22% [18%-26%]), (2) cardiorenal/diabetes (27% [21%-34%]), (3) hematologic malignancy and transplant receipt (12% [6%-21%]), and (4) chronic pulmonary disease with home oxygen dependence (44% [25%-66%]).

Conclusions: Distinct underlying condition profiles with varying risks of critical illness were observed among inpatients with RSV. These findings could support recognition of high-risk patients to inform RSV prevention strategies and suggest that the role of multimorbidity in severe RSV disease risk warrants further attention.

Keywords: ICU admission; respiratory syncytial virus; risk factors; statistical clustering; underlying conditions.

Conflict of interest statement

Potential conflicts of interest . J. D. Casey received a travel grant from Fisher and Paykel to attend a conference, outside the submitted work. J. D. Chappell reports research support from Merck to study RSV epidemiology in hospitalized children, Amman, Jordan, outside the submitted work. M. G. reports grant funding from the CDC, CDC-Abt Associates, and CDC-Westat, outside the submitted work. M. N. G. received grant funding from the National Institutes of Health (NIH), CDC; participated as a scientific advisor for Regeneron, Novartis, and Philips Healthcare; and was a section editor for UptoDate with Wolters Kluwer, outside the submitted work. C. G. G. has received consulting fees from Merck and GSK, and research support from the CDC, NIH, Food and Drug Administration (FDA), Agency for Healthcare Research and Quality (AHRQ), and Syneos Health, outside the submitted work. N. H. reports grant funding from Merck and participated as a one-time advisory board member for CSL-Seqirus, outside the submitted work. C. L. H. reports additional funding provided for her work to her university from the NIH, outside the submitted work. A. K. received institutional research support from Dompe Pharmaceuticals, Direct Biologics, Roche, the Department of Defense (DoD) and NIH and National Heart, Lung, and Blood Institute (NHLBI) for clinical trial participation, outside the submitted work. A. S. L. receives research support from the CDC, National Institute of Allergy and Infectious Diseases (NIAID), FluLab, and Roche (related to baloxavir), and consulting fees from Roche (related to baloxavir), outside the submitted work. I. D. P. reports grant funding from NIH and funding to his institution from Bluejay Diagnostics and Novartis, outside the submitted work. I. A. V. receives funding through her institution for unrelated projects sponsored by eMaxHealth, Boehringer Ingelheim, Eli Lilly, and Pfizer, outside the submitted work. All other authors report no potential conflicts.

Supplementary info

MeSH terms, Grants and fundingExpand

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J Allergy Clin Immunol

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. 2026 Mar 19:S0091-6749(26)00167-3.

doi: 10.1016/j.jaci.2026.02.030. Online ahead of print.

Sex matters: IgE-associated nasal epithelial gene expression in asthma

Saptarshi Roy [1], Pawan Sharma [2]

Affiliations Expand

- PMID: 41860513

- DOI: 10.1016/j.jaci.2026.02.030

No abstract available

Conflict of interest statement

Disclosure statement Supported by the National Heart, Lung, and Blood Institute (grant R01HL161205 [to P.S.]). Disclosure of potential conflict of interest: The authors declare that they have no relevant conflicts of interest.

Supplementary info

Publication typesExpand

Full text links

2

Eur J Prev Cardiol

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. 2026 Mar 20:zwag165.

doi: 10.1093/eurjpc/zwag165. Online ahead of print.

Asthma and cardiovascular outcomes: a population-based matched cohort study

Cheng Yang [1 2], Wei-Hua Chen [3], Lin Chen [1], Nuo-Qi Zhang [3], Jin-Lyu Sun [1], Kai Guan [1], Rong-Chong Huang [3], Jian-Jun Li [2]

Affiliations Expand

- PMID: 41860397

- DOI: 10.1093/eurjpc/zwaq165

No abstract available

Full text links

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3

J Gen Intern Med

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. 2026 Mar 19.

doi: 10.1007/s11606-026-10322-9. Online ahead of print.

EBM BLS: Albuterol-Budesonide as Needed Resulted in Fewer Severe Asthma Exacerbations than Albuterol Alone for Patients with Mild Asthma

Dustin Bratten [1], Steven Allon [2], Stephen Fuest [3]

Affiliations Expand

- PMID: 41857446

- DOI: 10.1007/s11606-026-10322-9

No abstract available

Conflict of interest statement

Declarations. None. Ethics Approval and Consent to Participate: Not applicable. Conflict of interest: The authors declare that they do not have a conflict of interest.

- 4 references

Full text links

4

Rhinology

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. 2026 Mar 19.

doi: 10.4193/Rhin25.523. Online ahead of print.

Long-term dupilumab therapy reduces concomitant medication use in patients with CRSwNP

K Berbalk [1], N J Campion [1], T J Bartosik [1], L Liu [1], M Pan [1], C Morgenstern [1], V Stanek [1], A Tu [1], S Stoshikj [2], J Eckl-Dorna [1], S Schneider [1]

Affiliations Expand

- PMID: 41853844

- DOI: 10.4193/Rhin25.523

Abstract

Background: Dupilumab has demonstrated efficacy in Chronic Rhinosinusitis with Nasal Polyps. While its impact on sinonasal and asthma symptoms is well established, less is known about its effects on the demand for concomitant medications in long-term routine care.

Methodology: This retrospective longitudinal real-world study included 224 patients diagnosed with Chronic Rhinosinusitis with Nasal Polyps and treated with Dupilumab at a tertiary centre between 2019 and 2025, with a maximum follow-up of up to 4.5 years. At each visit, use of nasal sprays, asthma drugs, and other disease-related drugs was recorded. Linear mixed-effects models were fitted to assess longitudinal changes.

Results: At baseline, patients reported a mean of 1.6 concomitant medications, most commonly INCS and inhaled asthma drugs. The total number of concomitant medications, the number of nasal sprays, asthma medications, and other disease-related drugs decreased significantly over time. Parallel improvements were observed in patient-reported outcome measures (SNOT-22, TNSS, ACT, miniAQLQ).

Conclusions: In this real-world cohort, Dupilumab treatment led to a sustained overall reduction in concomitant medication use, thereby lowering pharmacological burden while improving disease control.

Full text links

UNIMORE

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5

Editorial

Thorax

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. 2026 Mar 18:thorax-2026-224744.

doi: 10.1136/thorax-2026-224744. Online ahead of print.

An asthma-related anxiety intervention appropriate for the shift to digitalised care

Adam Lewis [1], Judit Varkonyi-Sepp [2], Nathan Healey [3], Ben Ainsworth [3]

Affiliations Expand

- **PMID: 41850775**

- **DOI: 10.1136/thorax-2026-224744**

No abstract available

Keywords: Asthma; Perception of Asthma/Breathlessness; Psychology.

Conflict of interest statement

Competing interests: None declared.

Supplementary info

Publication typesExpand

Full text links

BMJ Online First UNIMORE

Proceed to details

Cite

6

BMJ Open Respir Res

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. 2026 Mar 18;13(1):e003807.

doi: 10.1136/bmjresp-2025-003807.

Indoor air quality and its impacts on asthma and COPD

Tun Zan Maung [1], Rose Aning [2], Michael Newnham [3], Eleanor Holt [4], Christian Pfrang [4], Alice Margaret Turner [3]

Affiliations Expand

- PMID: 41850737

- DOI: 10.1136/bmjresp-2025-003807

Free article

Abstract

Background: Though indoor air pollution is associated with high mortality and economic impact globally, it is relatively understudied. Knowledge gaps remain regarding exposure to peak pollutant concentrations and their effects, especially among patients with respiratory diseases who are susceptible to a greater impact.

Methods: This 2-week cohort study monitored indoor air quality and symptoms in patients with asthma and chronic obstructive pulmonary disease. Statistical process control charts were used to track hourly pollutant peaks, while notched box plots visualised significant particulate matter 2.5 ($PM_{2.5}$) peaks over 6-hour periods. Linear mixed-effects and autoregressive models were used to assess the impact of $PM_{2.5}$ on symptoms.

Results: The analyses included 30 participants. Hourly plots revealed that 43.3% experienced $PM_{2.5}$ and PM_{1} peaks above the upper control limit between 6 pm and 9 pm, with 33.3% occurring specifically at 19:00 hours, consistent with cooking as a source of particulates. There were also a few peaks between 10 am and 12 noon. Peaks recorded between midnight and 5 am were minimal, corresponding to low activity during sleep. Smokers exhibited higher average pollutant levels than non-smokers. On average, participants experienced four to six pollutant peak periods exceeding the WHO 2021 air quality guidelines. No statistically significant

association was found between $PM_{2.5}$ and asthma symptoms ($p>0.05$), although a weak relationship was observed visually.

Conclusion: The data suggest that human activities significantly influence indoor air quality for PM, indicating that behavioural interventions could help optimise it.

Keywords: Asthma; Emphysema; Pulmonary Disease, Chronic Obstructive.

Conflict of interest statement

Competing interests: AMT has had grants and/or honoraria from AstraZeneca, Chiesi and GSK for work centred on the conditions in the study over the last 3 years.

Supplementary info

MeSH terms, SubstancesExpand

Full text links

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Cite

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Hosp Pediatr

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. 2026 Mar 19:e2025008669.

doi: 10.1542/hpeds.2025-008669. Online ahead of print.

Risk Factors Associated With Escalation of Therapy in Hospitalized Children With Asthma

Florinda Islamovic [1], Patricia Hametz [1], Jonathan M Gabbay [1], Marina Reznik [1]

Affiliations Expand

- PMID: 41850577

- DOI: 10.1542/hpeds.2025-008669

Abstract

Objective: Children hospitalized for asthma exacerbations may require escalation of therapy (EOT), but risk factors remain poorly defined. We aimed to identify risk factors for EOT to inform interventions and improve care.

Patients and methods: We conducted a retrospective cohort study using the Pediatric Health Information System of hospitalized children aged 4 to 18 years with a diagnosis of an asthma exacerbation from January 1, 2018, to December 31, 2023, across 45 children's hospitals. EOT was defined as intensive care unit transfer, advanced respiratory support, or adjunctive asthma therapy (ie, magnesium sulfate, methylprednisolone) after the first hospital day. Mixed-effects regression estimated the association between EOT and risk factors: age, sex, race and ethnicity, insurance, Child Opportunity Index (COI), complex chronic conditions (CCC), and season.

Results: Among 92 224 encounters, 15 989 (17.34%) required EOT. Adjusted analysis showed lower odds of EOT in male patients (adjusted odds ratio [aOR], 0.91 [CI, 0.88, 0.94]) and spring compared with summer admissions (aOR, 0.93 [0.88, 0.99]). Compared with early childhood (<5 years), the odds of EOT were higher in late childhood (5-12 years) (aOR, 1.19 [1.13, 1.26]), adolescence (13-17 years) (aOR, 1.48 [1.38, 1.59]), and adults (≥18 years) (aOR, 1.43 [1.17, 1.73]). Higher odds were observed in Hispanic (aOR, 1.07 [1.00, 1.14]) and multiracial (aOR, 1.17 [1.02, 1.34]) patients and those with CCC (aOR, 2.07 [1.95, 2.19]). COI and insurance were not significantly associated with EOT.

Conclusion: We identified key risk factors for EOT in children hospitalized for asthma exacerbations. Such findings can help with early risk stratification or serve as proxies for modifiable features of inpatient care. Further research is warranted to explore these associations to improve care.

Cite

8

Eur J Epidemiol

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. 2026 Mar 18.

doi: 10.1007/s10654-026-01377-3. Online ahead of print.

Melbourne Epidemiological Study of Childhood Asthma (MESCA)

Dinh S Bui [#1], Andrew Tai [#2 3], Jiacheng Liu [1], Jennifer L Perret [1], Caroline J Lodge [1], Nur Sabrina Idrose [1], Mary Roberts [4], Colin Robertson [#4], Shyamali C Dharmage [#5]

Affiliations Expand

- PMID: 41849083

- DOI: 10.1007/s10654-026-01377-3

Abstract

The Melbourne Epidemiological Study of Childhood Asthma (MESCA) is one of the longest-running respiratory studies in the world. The study aimed to determine the prevalence and describe the natural history of childhood asthma and wheezy bronchitis. MESCA started in 1964, when four asthma/wheeze groups and a control group, all aged 7, were recruited and have been followed into their seventh decade. The study has collected unique, repeated data on asthma, respiratory symptoms, and lung function over seven decades. It has provided critical insights into the natural history and long-term outcomes of childhood asthma. MESCA is the first prospective study to provide robust evidence for the link between childhood asthma and the development of COPD. Participants are now entering their seventh decade of life, and their rich, lifetime data provides a unique opportunity to investigate a wide range of outcomes, including multimorbidity and healthy aging.

Keywords: Allergy; COPD; Childhood asthma; Cohort profile; Lung function.

Conflict of interest statement

Declarations. Conflict of interest: The authors have no conflict of interest. Ethical approval: MESCA follow-up studies were approved by the Melbourne Royal Children's Hospital and participating institutions.

- 20 references

. 2026 Mar 18:1-9.

doi: 10.1080/02770903.2026.2647913. Online ahead of print.

Pediatric Asthma Hospitalizations and Associated Factors in California

Sasha Singh [1], Aryaman Trikala [1], Elvin Hernandez [2]

Affiliations Expand

- PMID: 41848074

- DOI: 10.1080/02770903.2026.2647913

Abstract

Objectives: Asthma is the most common chronic respiratory condition of childhood worldwide. In 2021, about 25% of Californians had at some point been diagnosed with asthma. Between 2008 and 2010, the age-adjusted rate of pediatric asthma deaths was 1.9 in California but 5 in San Bernardino. In this study, we compare rates of pediatric asthma hospitalizations across California counties and examine factors correlating to reduced asthma attacks.

Methods: We analyzed two datasets. The first dataset was from the California Health and Human Services Open Data Portal (CA ODP), "Rates of Preventable Hospitalizations (Age < 18) for Selected Medical Conditions by County." Selected counties included Los Angeles, San Bernardino, Kern, Fresno, Alameda, and Santa Clara. The second dataset was from the California Health Interview Survey, Public Use Files (CHIS PUFs), for Teens and Children for years 2018-2022.

Results: Risk-adjusted rates showed a noticeable difference between pediatric asthma hospitalizations across California, with the highest rates being seen in Fresno County at 160.0 per 100,000. Reduced asthma attacks in the past year were significantly associated with having a written asthma action plan ($p = 0.004$) and receiving one from a healthcare provider ($p < 0.001$). Participants with a usual source of care other than the emergency room (ER) had fewer asthma attacks compared to those without ($p = 0.028$).

Conclusions: Pediatric asthma morbidity remains high throughout different California regions, with increased rates being seen in Fresno. Various factors including consistent healthcare provider access and written asthma action plans play a role in asthma prognosis.

Keywords: adolescent; child; hospitalization; prognosis; respiratory disorders.

J Asthma

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. 2026 Mar 18:1-6.

doi: 10.1080/02770903.2026.2647916. Online ahead of print.

Mild Asthma - A Deceptive Danger

Daniel J Tan [1 2 3], Shyamali C Dharmage [1]

Affiliations Expand

- PMID: 41847990

- DOI: 10.1080/02770903.2026.2647916

No abstract available

Keywords: Asthma Severity; Exacerbations; Mild Asthma; Risks; Treatable Traits.

Full text links

Proceed to details

Cite

11

ERJ Open Res

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. 2026 Mar 16;12(2):01217-2025.

doi: 10.1183/23120541.01217-2025. eCollection 2026 Mar.

Improving asthma control assessment and outcomes in children with asthma using an artificial intelligence digital tool: a prospective multicentre cohort study

Anne B Chang [1 2 3], Stephanie T Yerkovich [1 2], Steven M McPhail [4], Hiran Selvadurai [5], Vikas Goyal [1 3 6], Shane George [7 8], Gabrielle B McCallum [2 9], Peter S Morris [2], Hannah O'Farrell [1 2], Lesley A Versteegh [2], Jonathan Grigg [10], Margaret S McElrea [1 3], Sophie Worley [1], Leanne Elliot-Holmes [11], Terase Yerkovich [12], Joanna Williams [12], Keith Grimwood [2 8 13], Julie M Marchant [1 2 3 13]

Affiliations Expand

- **PMID: 41846678**
- **PMCID: PMC12991029**
- **DOI: 10.1183/23120541.01217-2025**

Abstract

Background: Achieving good asthma control is a goal of asthma management. In children, asthma control and quality-of-life assessments include determining the presence of wheeze. However, wheeze is unreliably reported with high disagreement (>50%) between parental and physician detection of wheeze. Objectively defining wheeze using WheezeScan™ (a user-friendly, artificial intelligence-based device) could improve assessment of asthma control and hence management.

Objective: Our primary aim is to determine whether adding WheezeScan™ to routine clinical care improves parental asthma control assessment (ACA) in children (aged 4-11 years). Our secondary aims are to examine the impact of WheezeScan™ upon patient-reported outcomes (PROs), the parent asthma management self-efficacy scale (PAMS), healthcare costs and ease of WheezeScan™ use. The primary hypothesis is that using WheezeScan™ alters the ACA group.

Methods: Our multicentre prospective cohort study involves 125 children with specialist-confirmed asthma. Over 5 weeks, parents/caregivers use the WheezeScan™ twice-daily at home and whenever wheezing is suspected. After the first week of using the WheezeScan™, asthma medications may be adjusted based upon the child's asthma control score and WheezeScan™ data. Study outcomes are collected at baseline, week 1 and week 5. Our primary end-point is the proportion of children whose assessment of asthma control changed between week 1 and baseline, based upon parental assessments using WheezeScan™ data. Secondary outcomes are PROs (asthma-related quality of life), PAMS, healthcare costs and WheezeScan™ ease of use.

Conclusions: This protocol describes our study to determine whether using digital technology to accurately identify wheeze in children with asthma improves their asthma assessment and asthma-related PROs, including PAMS and healthcare costs.

Conflict of interest statement

Conflict of interest: All authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. Omron Healthcare (Japan), the manufacturers of WheezeScanTM loaned 150 WheezeScanTM units without cost. Omron Healthcare was not involved with the conception and design of the study. It is also not involved

in the conduct, data analysis and interpretation, or preparation of manuscripts arising from this study. Gabrielle McCallum is a member of the editorial board of ERJ Open Research.

- 26 references
- 2 figures

Full text links

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12

ERJ Open Res

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. 2026 Mar 16;12(2):00677-2025.

doi: 10.1183/23120541.00677-2025. eCollection 2026 Mar.

Cumulative corticosteroid burden over 25 years in patients initiating biologic therapy for severe asthma: a nationwide cohort study

Galathea Berner [1], Marianne Baastrup Soendergaard [1], Susanne Hansen [1 2], Anne-Sofie Bjerrum [3], Anna von Bülow [1], Ole Hilberg [4], Barbara Bonnesen [5], Claus Rikard Johnsen [6], Sofie Lock Johansson [7], Linda Makowska Rasmussen [6], Johannes Martin Schmid [3], Charlotte Suppli Ulrik [8], Celeste Porsbjerg [1], Kjell Erik Julius Håkansson [1]

Affiliations Expand

- PMID: 41846674
- PMCID: PMC12991007
- DOI: 10.1183/23120541.00677-2025

Abstract

Background: Systemic corticosteroid use in severe asthma is associated with morbidity and mortality. Little is known about the long-term corticosteroid burden prior to biologic therapy. This study aims to estimate the cumulative corticosteroid burden in patients initiating biologic therapy and impact of pre-biologic disease trajectories on corticosteroid burden.

Methods: Patients in the Danish Severe Asthma Register initiating biologic therapy between 2016 and 2022 had their redemptions of inhaled, nasal and systemic corticosteroids from 1995 until first administration of biologic therapy retrieved. Prednisolone-equivalent doses were calculated for all redeemed corticosteroids, presented as either cumulative or daily exposure.

Results: A total of 542 patients (median follow-up 16 years) were included. Prior to biologic initiation, the median (IQR) total corticosteroid burden during follow-up was 17.1 g (8.4-36.2) of which 7.2 g (3.3-16.3) were systemic corticosteroids. 56.3% of patients were exposed to more systemic than inhaled corticosteroids. Two-thirds of patients experienced a corticosteroid exposure ≥5 mg prednisolone equivalents daily in the year prior to biologic therapy. Additionally, 10% had inhaled corticosteroid exposure ≥5 mg daily prednisolone equivalents for over two decades. Cumulative exposure was highest in chronic severe asthma patients compared to those with gradual- or recent-onset severe asthma. 72% (12.4 g (3.9-34.2)) of total corticosteroid exposure occurred prior to the first registered specialist visit.

Conclusion: Patients with severe asthma have substantial cumulative corticosteroid exposure prior to biologic therapy, with the majority occurring prior to specialist assessment. Exposure reduction is a key priority to minimise corticosteroid exposure-related comorbidities.

Conflict of interest statement

Conflict of interest: G. Berner, C.R. Johnsen, L.M. Rasmussen, O. Hilberg, B. Bonnesen, S.L. Johansen and J.M. Schmid report no conflicts. M.B. Soendergaard has received personal fees from GSK, AstraZeneca and ALK-Abello outside of the submitted work. S. Hansen reports lectures fees from AstraZeneca and GSK. A-S. Bjerrum has received personal fees from AstraZeneca, GSK and Sanofi. A. von Bülow reports consulting fees from Novartis and AstraZeneca, speaker fees from Novartis, GSK and AstraZeneca, travel grants from AstraZeneca, and participation in advisory boards with AstraZeneca, GSK and Novartis. C.S. Ulrik has received personal fees from AstraZeneca, GSK, TEVA, TFF Pharmaceuticals, Pfizer, Chiesi, Sanofi Genzyme, Boehringer Ingelheim, Orion Pharma, Novartis, ALK-Abello, Mundipharma, Actelion, IQVIA, Pfizer, Roche, Takeda, Berlin Chemie, Hikma Pharmaceuticals and Novo Nordisk. C. Porsbjerg has received personal fees and research support from AstraZeneca, GSK, Novartis, Sanofi, Teva and ALK. K.E.J. Håkansson has received personal fees from AstraZeneca, Chiesi, GSK, Sanofi and TEVA.

- 30 references
- 4 figures

13

Case Reports

Am J Ind Med

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. 2026 Mar 17.

doi: 10.1002/ajim.70070. Online ahead of print.

Severe Occupational Hypersensitivity Pneumonitis: A Case Series of Four Patients Requiring Lung Transplantation

Ludwig Frei-Stuber [1 2], Judith Mohren [1 2], Ester Mau [1 2], Bernhard Werner [1 2], Rudolf A Hatz [2 3], Jürgen Barton [2 4], Dennis Nowak [1 2]

Affiliations Expand

- PMID: 41845945

- DOI: 10.1002/ajim.70070

Abstract

Hypersensitivity pneumonitis (HP) is an immune-mediated interstitial lung disease triggered by repeated inhalation of organic or chemical antigens. Occupational exposures account for approximately 19% of all cases. Early diagnosis, identification of the responsible antigen(s), and immediate avoidance of exposure are crucial to prevent irreversible pulmonary fibrosis. However, HP often remains unrecognized or is misclassified as another respiratory disorder such as asthma, chronic obstructive pulmonary disease (COPD), or idiopathic pulmonary fibrosis. As a result, the causal link between symptoms and workplace exposure is frequently established only in advanced disease stages-or not at all. Such delays may result in chronic respiratory failure, occupational disability, prolonged oxygen therapy, and, in severe cases, lung transplantation. We report four patients in whom HP was ultimately recognized as an occupational disease or recommended for legal recognition in court. At the time of diagnosis, all cases had progressed to advanced, fibrotic HP, rendering both primary and secondary prevention impossible. In each instance, earlier identification of the occupational trigger followed by immediate antigen avoidance could likely have prevented the development of irreversible lung damage. This case series underscores the need for early and comprehensive pulmonary assessment, including detailed occupational history-taking, serologic and radiologic evaluation, and prompt referral to an occupational physician when HP is suspected. Close interdisciplinary collaboration between pulmonologists and occupational medicine specialists is essential to

reduce diagnostic latency, prevent progression to end-stage lung disease, and improve clinical and socioeconomic outcomes.

Keywords: antigen avoidance; early recognition; extrinsic allergic alveolitis; lung transplantation; occupational diseases; occupational exposure; occupational hypersensitivity pneumonitis; preventive occupational medicine; respiratory insufficiency; work-related interstitial lung disease.

- 26 references

Supplementary info

Publication typesExpand

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14

Int J Clin Pharmacol Ther

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. 2026 Mar 17.

doi: 10.5414/CP204911. Online ahead of print.

Can tiotropium add-on inhalation revolutionize therapy in elderly asthmatic patients? A treatable traits approach towards successful aging

Yoshihisa Ishiura, Shosaku Nomura, Noriyuki Ohkura, Johsuke Hara, Masaki Fujimura, Tomoki Ito

- PMID: 41841282

- DOI: 10.5414/CP204911

Abstract

Background: The population of elderly patients with asthma is increasing, resulting in serious health problems because of hospitalization and high mortality rate. Furthermore, several recent studies have shown that progressive airflow limitation may worsen cognitive dysfunction and contribute to poor asthma control.

Maintaining good respiratory function is therefore important in the elderly in order to achieve a satisfactory quality of life.

Materials and methods: A 12-week, open-label, cross-over study was conducted in elderly patients with asthma to investigate the effect of 5 µg/day tiotropium bromide (TIO) add-on therapy administered using a soft mist inhaler (SMI), in addition to a dosage of 500/20 µg/day fluticasone propionate/formoterol fumarate (FP/FM) treatment and to compare the effects of treatment with those following the administration of 500/20 µg/day FP/FM alone. The trial design thus entailed a 4-week run-in period and two 4-week treatment periods.

Results: A total of 21 patients aged over 65 years with stable bronchial asthma were recruited in the study. Forced expiratory volume in 1 second values after the treatment period with FP/FM and TIO add-on therapy were significantly higher than those after the run-in period ($p < 0.01$).

Conclusion: TIO add-on therapy FP/FM treatment using an SMI in elderly patients with asthma improved lung function parameters demonstrating, the value of TIO add-on therapy as a treatable traits option for improving quality of life and achieving successful aging in this population.

Full text links

Cite

15

BMC Pulm Med

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. 2026 Mar 16.

doi: 10.1186/s12890-026-04223-0. Online ahead of print.

Adherence to asthma medication and asthma control in Finland

Petri Salmela [1 2 3], Johanna Pakkasela [4 5], Pekka Juntunen [4 5], Iida Vähätalo [5 6], Hannu Kankaanranta [5 6 7], Jussi Karjalainen [5 8], Lauri Lehtimäki [5 8]

Affiliations Expand

- **PMID: 41840425**

- **DOI: 10.1186/s12890-026-04223-0**

Free article

No abstract available

Keywords: Adherence; Adult; Asthma; Exacerbation; Inhaled corticosteroids; Medication; Symptoms.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The study was conducted in compliance with the Helsinki Declaration and informed consent to participate was obtained from all of the participants in the study. The study protocol was approved by the Ethics Committee of Tampere University Hospital (approval number R15186). Consent for publication: Not applicable. Competing interests: PS reports fees for lectures and advisory board meetings from Astra Zeneca, Chiesi, GSK, Boehringer Ingelheim and Sanofi. JP reports fees for lectures from GSK. PJ and IV has nothing to disclose. HK reports fees for lectures and advisory board meetings from AstraZeneca, Boehringer-Ingelheim, Covis Pharma, GSK, Orion Pharma and Sanofi. JK report fees for lectures and advisory board meetings from AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Sanofi and Orion Pharma. LL report fees for lectures and advisory board meetings from ALK, AstraZeneca, Berlin Chemie, Boehringer Ingelheim, Chiesi, GSK, Menarini, Novartis, Sanofi and Orion Pharma.

- **53 references**

Full text links

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Cite

16

J Asthma

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. 2026 Mar 17:1-9.

doi: 10.1080/02770903.2026.2644882. Online ahead of print.

Baseline dual elevation of fractional exhaled nitric oxide and blood eosinophils is associated with clinical remission in severe eosinophilic asthma treated with biologics: a real-world prospective study

Tommaso Pianigiani [1], Akter Dilroba [1], Laura Bergantini [1], Elena Bargagli [1], Paolo Cameli [1]

Affiliations Expand

- PMID: 41830561

- DOI: 10.1080/02770903.2026.2644882

Abstract

Background: Clinical remission on biologic treatment has emerged as a relevant target in severe asthma management. Simple and widely available type 2 (T2) biomarkers, such as fractional exhaled nitric oxide (FeNO) and blood eosinophil count (BEC), may help stratify patients in real-world practice.

Objective: To explore whether the combined baseline assessment of FeNO and BEC is associated with clinical remission at 12 months in patients with severe eosinophilic asthma (SEA) treated with biologic therapy.

Methods: In this prospective real-world single-center study, 69 patients with severe asthma initiating benralizumab (*n* = 26), mepolizumab (*n* = 16), or dupilumab (*n* = 27) were enrolled. At baseline, patients were classified as dual high biomarker T2 (DHB-T2: FeNO50 ≥ 25 ppb and BEC ≥300 cells/μL) or heterogeneous/no biomarker T2 (HNB-T2: all other biomarker combinations). Clinical remission at 12 months was defined by the simultaneous fulfilment of the following criteria: absence of maintenance oral corticosteroids, zero exacerbations, FEV1 ≥ 80% predicted, and Asthma Control Test (ACT) score ≥20.

Results: At 12 months, 42 of 69 patients (60.8%) achieved clinical remission. DHB-T2 status was associated with a higher likelihood of remission (univariate OR 4.58, *p* = 0.005; multivariate OR 12.67, *p* = 0.002). The DHB-T2 classification showed a sensitivity of 73.33% and a specificity of 62.45% for identifying patients achieving remission. Isolated baseline elevation of either FeNO or BEC alone was not associated with clinical remission.

Conclusions: In this real-world cohort of patients with severe eosinophilic asthma treated with biologics, concomitant baseline elevation of FeNO and blood eosinophils was associated with a higher likelihood of achieving clinical remission at 12 months.

Keywords: Severe asthma; biologic therapy; blood eosinophils; clinical remission; fractional exhaled nitric oxide.

J Asthma

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. 2026 Mar 18:1-12.

doi: 10.1080/02770903.2026.2644878. Online ahead of print.

Biologics in severe asthma: from precision phenotyping to clinical remission

Minjie Wang [1], Daming Jiang [1]

Affiliations Expand

- PMID: 41830543

- DOI: 10.1080/02770903.2026.2644878

Abstract

Objective: To critically appraise the current landscape of biologic therapies for severe asthma, synthesizing evidence on biomarker-driven strategies, and evaluating the evolving therapeutic goal of clinical remission.

Methods: A systematic search of PubMed, Embase, and Cochrane Library databases was conducted for relevant literature published up to December 2025. We included pivotal randomized controlled trials, real-world evidence studies, systematic reviews, and meta-analyses focusing on approved biologics (omalizumab, mepolizumab, reslizumab, benralizumab, dupilumab, tezepelumab) and emerging agents for severe asthma.

Results: Biologic therapies have consistently demonstrated significant efficacy in reducing exacerbation rates (reductions ranging from 26% to 56% vs. placebo in pivotal trials) and oral corticosteroid dependence, while improving lung function and quality of life. Biomarkers such as blood eosinophils, fractional exhaled nitric oxide (FeNO), and serum IgE are crucial for guiding treatment selection. A substantial proportion of patients (ranging from 32% to 50% in observational studies) can achieve clinical remission, a composite endpoint including symptom freedom, no exacerbations, and OCS independence. Tezepelumab has shown efficacy in a broader population, including patients with lower T2 inflammation.

Conclusion: The management of severe asthma has shifted to a precision medicine paradigm based on molecular phenotyping. Biologics have made clinical remission an attainable goal for many patients. Future research must focus on therapies for non-type 2 asthma, refining dynamic biomarkers, and establishing long-term disease-modifying effects.

Keywords: Severe asthma; biologic therapy; clinical remission; monoclonal antibodies; precision medicine; type 2 inflammation.

Supplementary info

Publication typesExpand

Full text links

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Cite

18

Med Lett Drugs Ther

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. 2026 Mar 16;68(1750):44-46.

doi: 10.58347/tml.2026.1750b.

Depemokimab (Exdensur) for severe eosinophilic asthma

No authors listed

- **PMID: 41793383**
- **DOI: 10.58347/tml.2026.1750b**

No abstract available

Keywords: Cinqair; Dupixent; Exdensur; Fasenra; Nucala; Tezspire; Xolair; adverse effects; asthma; benralizumab; depemokimab; dosage; dupilumab; efficacy; inhaled corticosteroids; lactation; mepolizumab; omalizumab; pregnancy; reslizumab; safety; tezepelumab.

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Cite

19

Multicenter Study

Eur Respir J

. 2026 Mar 19;67(3):2501435.

doi: 10.1183/13993003.01435-2025. Print 2026 Mar.

A multi-country cohort study evaluating the prevalence, risk factors, lung function and clinical outcomes of chronic bronchitis in low- and middle-income countries

Nicole M Robertson [1 2 3], Arun K Sharma [4 3], Mingling Yang [1 2], Santa K Das [5], Trishul Siddharthan [2 6], Suzanne L Pollard [1], Natalie A Rykiel [1 2], Patricia Alupo [7], Oscar Flores-Flores [2 8], Bruce Kirenga [7], Ram K Chandyo [9], Shumonta A Quaderi [10], Laxman Shrestha [4], Robert A Wise [1], John R Hurst [10], William Checkley [11 2]; and the Global Excellence in COPD outcomes (GECo) Study Investigators

Affiliations Expand

- PMID: 41381225

- DOI: 10.1183/13993003.01435-2025

Abstract

Background: Chronic bronchitis affects up to 40% of individuals with COPD, and may serve as an early predictor of the disease and development of COPD. We investigated the prevalence, risk factors and clinical outcomes associated with chronic bronchitis in three low- and middle-income countries (LMICs).

Methods: We conducted a population-based study of adults aged ≥40 years in Bhaktapur (Nepal), Lima (Peru) and Nakaseke (Uganda). Chronic bronchitis was defined as a productive cough several days per week in the past 4 weeks. Multivariable log-binomial regression identified risk factors and outcomes associated with chronic bronchitis.

Results: Among 9664 participants (mean age 56.2 years, 49.0% male, 33.1% ever-smokers), chronic bronchitis prevalence was 9.7%, with 31.5% of those also having COPD. Significant risk factors included older age (adjusted relative risk 1.54, 95% CI 1.40-1.70; per 19.8 years), male sex (1.18, 95% CI 1.05-1.34), prior tuberculosis (1.45, 95% CI 1.14-1.83), prior asthma diagnosis (2.11, 95% CI 1.84-2.42), pack-years of tobacco use (1.16, 95% CI 1.14-1.18; per 10 pack-years), family history of chronic respiratory disease (1.69, 95% CI 1.50-1.91), second-hand smoke exposure (1.45, 95% CI 1.28-1.64), lower socioeconomic status quartile (1.22, 95% CI 1.07-1.39) and indoor biomass exposure (1.45, 95% CI 1.13-1.86). Participants with chronic bronchitis experienced more breathlessness, worse respiratory health (higher St George's Respiratory Questionnaire scores) and higher hospitalisation rates (all $p<0.001$).

Conclusions: Chronic bronchitis is common in LMIC settings and is associated with multiple modifiable risk factors, including second-hand smoke, biomass exposure and prior respiratory disease. Addressing these factors may reduce disease burden and improve quality of life.

Conflict of interest statement

Conflict of interest: T. Siddharthan reports grants from AstraZeneca, Sanofi and GlaxoSmithKline, consultancy fees from GlaxoSmithKline, Apogee Therapeutics, Verona Pharmaceuticals and AstraZeneca, and receipt of equipment, materials, drugs, medical writing, gifts or other services from Siemens. O. Flores-Flores reports a grant from the US National Institutes of Health (K43 Global Emerging Fellow training grant). R.A. Wise reports grants from Chiesi, AstraZeneca and Sanofi, consultancy fees from the US Government CMS, participation on a data safety monitoring board or advisory board with AstraZeneca, Kamada, Bristol Myers Squibb, AbbVie, PureTech, Pulmonx and the American Lung Association, and leadership roles with the COPD Foundation and Clinical Endpoint Committees for AbbVie, Galderma, Boehringer Ingelheim, Chiesi, Biontech and AstraZeneca. J.R. Hurst reports grants from AstraZeneca, consultancy fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Sanofi-Regeneron and Takeda, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Sanofi-Regeneron and Takeda, and is an Associate Editor of the European Respiratory Journal. The remaining authors have no potential conflicts of interest to declare.

Comment in

- **Redefining chronic bronchitis: short-term symptoms or long-term burden?**

Knox-Brown B, Ma J.Eur Respir J. 2026 Mar 19;67(3):2502533. doi: 10.1183/13993003.02533-2025. Print 2026 Mar.PMID: 41856565 No abstract available.

- **Cited by 1 article**

Supplementary info

Publication types, MeSH termsExpand

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

1

Review

Surv Ophthalmol

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. 2026 Mar 17:S0039-6257(26)00043-3.

doi: 10.1016/j.survophthal.2026.03.011. Online ahead of print.

Atopic Keratoconjunctivitis: From Molecular Mechanisms to Clinical Implications

Guillermo Raul Vera-Duarte [1], Gustavo Ortiz-Morales [1], Jose Carlos Guerrero-Acosta [1], Scarlett A Carrete-Corral [1], Arturo Ramirez-Miranda [1], Enrique O Graue-Hernandez [1], Alejandro Rodriguez-Garcia [2], Alejandro Navas [3]

Affiliations Expand

- PMID: 41856175

- DOI: 10.1016/j.survophthal.2026.03.011

Abstract

Atopic keratoconjunctivitis (AKC) is a chronic, bilateral inflammatory disease of the ocular surface that primarily affects young adults with a history of atopic dermatitis, asthma, or allergic rhinitis. AKC is considered the most severe form of ocular allergy and can result in serious complications that threaten vision, such as corneal ulceration, neovascularization, and scarring. Genetic predisposition, through regulatory genes that impact skin barrier function, immune system regulation, and allergic responses, plays a crucial role in the development and severity of AKC. Recent research has highlighted the roles of epithelial barrier dysfunction, gastrointestinal and eyelid/conjunctival dysbiosis, Th2-driven cytokines, and eosinophilic inflammation in disease perpetuation. Diagnosing AKC requires a high level of suspicion, careful integration of clinical signs, and a thorough assessment of coexisting atopic conditions. Management is often challenging and involves a stepwise approach, beginning with topical antihistamines and mast cell stabilizers, progressing to corticosteroids, calcineurin inhibitors, and, in severe or refractory cases, systemic immunosuppressive therapy or surgical intervention. Novel therapies, including biologics targeting IL-4 and IL-13, show promise in selected patients. A multidisciplinary approach and long-term follow-up are crucial for minimizing complications and preserving visual function. This review provides a comprehensive update on the epidemiology, clinical manifestations, immunopathogenesis, diagnostic approach, and therapeutic strategies for AKC.

Keywords: asthma; atopic dermatitis; atopy; hypersensitivity reaction.

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

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Cite

2

Br J Dermatol

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. 2026 Mar 19;194(4):667-678.

doi: 10.1093/bjd/ljaf475.

Multimorbidity and atopic dermatitis in a population-based cohort: severity-dependent association with distinct nonatopic multimorbidity patterns

Leon A Miltner [1], Laura Loman [1], Josué Almansa Ortiz [2], Junfen Zhang [1 3], Aline B Sprikkelman [4 5], Marie L A Schuttelaar [1]

Affiliations Expand

- PMID: 41308082

- DOI: 10.1093/bjd/ljaf475

Abstract

Background: Atopic dermatitis (AD) has characteristics of a systemic disease due to underlying systemic inflammation, which is supported by reports of various comorbidities.

Objectives: To examine the associations between AD and (nonatopic) multimorbidity in a population-based cohort from the northern Netherlands and to identify differences in multimorbidity patterns between participants with multimorbidity and no AD.

Methods: We assessed the lifetime prevalence of 52 diseases, from 15 domains, combining data from questionnaires, medication records and clinical assessments within the Lifelines Cohort. Lifetime AD was self-reported, physician-diagnosed and disease severity based on the Patient-Oriented Eczema Measure. Multimorbidity was defined as the lifetime presence of at least two diseases, while nonatopic multimorbidity excluded asthma, rhinitis and food allergy. A composite morbidity score (cMS) indicated the degree of multimorbidity. We analysed associations of AD

and AD severity with multimorbidity and cMS using binary and multinomial logistic regression, adjusting for age and sex, and additionally adjusting for socioeconomic and lifestyle factors. Patterns of nonatopic multimorbidity based on disease domains were explored using latent class analysis, stratified by AD presence.

Results: Of 37 193 participants, 3242 (8.7%) had AD. The odds for nonatopic multimorbidity were 1.47-fold higher in participants with AD, particularly for those with moderate-to-severe disease (adjusted odds ratio 1.74 vs. 1.41 for mild disease). The association strengthened with higher degrees of nonatopic multimorbidity, reaching 2.09-fold for ≥ 5 diseases. When considering atopic diseases in the definition of multimorbidity and the cMS, the associations with AD were even stronger. Further adjustments for socioeconomic and lifestyle factors were corroborative. We identified five distinct multimorbidity classes among individuals with and without AD, with two differing across the groups. One class, characterized by the orofacial domain, was only present among those with AD, while another class - resembling the metabolic syndrome - had more of a respiratory contribution to AD with further differences regarding cardiometabolic involvement.

Conclusions: Participants with AD, especially moderate-to-severe disease, are more likely to experience (nonatopic) multimorbidity and showed unique patterns of nonatopic multimorbidity with regard to orofacial and cardiometabolic diseases. Our findings highlight the importance of promoting awareness for interdisciplinary approaches to managing patients with AD. An author video to accompany this article is available online.

Plain language summary

Atopic dermatitis is a condition that causes red, itchy and inflamed skin. It is also known as eczema. It affects approximately 1 in 10 adults worldwide. Eczema can affect more than just the skin. In some cases, it can affect other organs and body systems because of inflammation throughout the whole body. In this study, we wanted to find out if people with eczema are more likely to have other long-term diseases. We also looked for specific patterns in the types of other health conditions they experience. We studied health data from more than 37,000 adults from a large group of people in the northern Netherlands. People in the study reported if they had ever been diagnosed with eczema by a doctor. We then checked if they had other diseases, like asthma, diabetes, heart disease and many more. Using a questionnaire, we asked how severe their eczema was. We found that about 9 in 100 people in the large study group had eczema. More people with the condition had at least two other diseases than people without eczema. This was even likelier for people with more severe eczema. The more diseases a person had, the stronger the link was with eczema. Finally, we found different patterns in the types of health conditions when people had eczema. We saw differences in diseases related to the mouth, as well as diseases affecting the heart and how the body handles sugar and fat. These findings suggest that people with eczema require combined care. This will involve different health specialists working together.

Supplementary info

MeSH terms, Grants and fundingExpand

chronic cough

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Thorax

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. 2026 Mar 18:thorax-2025-224292.

doi: 10.1136/thorax-2025-224292. Online ahead of print.

Comparison of Lower Airway Sampling Strategies in Children with Protracted Bacterial Bronchitis (CLASSIC-PBB): a non-randomised, internally controlled, multicentre trial

Francis J Gilchrist [1 2], Ivonne Solis-Trapala [2], Mathew Aspey [3], Zoe Baker [4], Robert Bowler [3], Macolm Brodilie [5 6], Seema Desai [7], Caroline Harris [5], Emily Hinton [8], Hermant Kulkarni [9], Simon Lea [10], Aviva Ogbolosingha [3], Ian Sinha [11], Joanne Stock [4], Will Carroll [12]; CLASSIC PBB study group

Collaborators, Affiliations Expand

- PMID: 41850774

- DOI: 10.1136/thorax-2025-224292

Free article

Abstract

Background: Protracted bacterial bronchitis (PBB) is a leading cause of paediatric chronic wet cough. Identifying the causative pathogen promotes antibiotic stewardship, but bronchoalveolar lavage taken during flexible bronchoscopy (FB-BAL) is the only validated sampling strategy. We prospectively investigated if cough swab (CS) or induced sputum (IS) was a viable alternative.

Methods: Children with PBB, referred for FB-BAL, provided a cough swab and induced sputum. Discordance in microbiological yield (failure to identify identical pathogens) between cough swab and BAL, and between induced sputum and BAL was assessed. This was performed for single-lobe (BAL1), two-lobe (BAL2) and six-lobe BAL (BAL6).

Results: 135 underwent FB-BAL, 134 produced a cough swab and 111 an induced sputum sample. 30 (22%) cough swab, 67 (60%) induced sputum and 101 (78%) BAL6 were pathogen positive. cough swab/BAL6 discordance was seen in 74% with a discordance OR (95% CI) for cough swab^{-}BAL6^{+} versus cough swab^{+}BAL6^{-} of 30.3 (9.6 to 95.8). induced sputum/BAL6 discordance was seen in 71% with a

discordance OR (95% CI) for induced sputum^{-}BAL6^{+} versus induced sputum^{+}BAL6^{-} of 4.2 (2.4 to 7.4). The ability of each sampling strategy to identify all pathogens from cough swab, induced sputum and BAL6 was: cough swab 17%, induced sputum 38%, BAL1 40%, BAL2 53% and BAL6 78%. The false negative rates were: cough swab 67%, induced sputum 27%, BAL1 33%, BAL2 16% and BAL6 9%.

Conclusions: The pathogen yield of both cough swab and induced sputum had high discordance with BAL6, meaning neither is a viable alternative to FB-BAL. However, the tolerability and relatively low false negative rate of induced sputum mean it can be part of early PBB assessment in children who do not warrant FB-BAL.

Keywords: Bacterial Infection; Bronchoscopy; Paediatric Lung Disease.

Conflict of interest statement

Competing interests: FJG is an Associate Editor for Thorax.

Full text links

Cite

2

Arch Dis Child Educ Pract Ed

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. 2026 Mar 18:edpract-2025-329397.

doi: 10.1136/archdischild-2025-329397. Online ahead of print.

Fifteen-minute consultation: Diagnosing and managing protracted bacterial bronchitis in children and young people

Anne McGough [1], Malcolm Brodlie [2 3], Sebastian Jason Gray [1], Julian P Legg [4]

Affiliations Expand

- PMID: 41850714

- DOI: 10.1136/archdischild-2025-329397

Abstract

Protracted bacterial bronchitis (PBB) is a frequent yet often underdiagnosed cause of chronic wet cough in young children, commonly mistaken for asthma or other respiratory conditions. It is characterised by a cough lasting more than 4 weeks that typically improves with an extended 4-6 week course of appropriate antibiotics, guided by allergy status and microbiological culture results where available, with co-amoxiclav being the usual first choice. PBB can progress to bronchiectasis if left untreated, with significant long-term implications for lung health. Early recognition is therefore crucial. This article outlines a practical approach to diagnosing PBB, emphasising the need to exclude other causes of persistent cough, obtain appropriate imaging and microbiological samples and consider specialist referral for non-responders to prolonged antibiotics or in recurrent cases. By promptly identifying and treating PBB, clinicians can reduce the risk of disease progression and improve long-term outcomes for paediatric patients.

Keywords: Child Health; Paediatrics; Respiratory Medicine.

Conflict of interest statement

Competing interests: None declared.

Full text links

Long-Term Prognosis of Adult Patients with Persistent Cough Post COVID-19 and Its Risk Factors: A Nationwide Prospective Study

Wen He [1], Jianyong Zhang [2], Dejun Sun [3], Fang Yi [1], Feng Wu [4], Jianwen Fei [5], Xuemei Wei [6], Wenzhi Zhan [1], Limei Geng [7], Xuejun Qin [8], Hua Xie [9], Mei Jiang [1], Chunhua Wei [10], Pusheng Xu [11], Cuiling Feng [12 13], Lingwei Wang [14], Juntao Feng [15], Yunhui Zhang [16], Liang Chen [17], Zhongmin Qiu [18], Huiyu Lu [19], Jie Zhang [20], Meihua

Chen [21], Yong Jiang [22], Suyun Li [23], Huiming Yin [24], Jia Zhu [25], Liqing Shi [26], Wei Han [27], Xiujuan Geng [28], Wei Tan [29], Lei Wang [30], Hongmei Yao [31], Tao Bian [32], Huaping Tang [27], Xiansheng Zeng [33], Bo Liu [34], Kefang Lai [35]

Affiliations Expand

- PMID: 41848877
- PMCID: PMC12999814
- DOI: 10.1007/s00408-026-00879-x

Abstract

Background: There are few data regarding the duration, long-term prognosis of persistent cough post coronavirus disease 2019 (COVID-19). The break of COVID-19 Omicron mutant infection provides an opportunity to investigate the long-term outcome of postinfectious cough and its risk factors.

Methods: In this multicenter prospective study, we recruited patients aged ≥ 18 years with cough duration ≥ 3 weeks after COVID-19 infection during early stage of 2023 in respiratory clinics, cough assessments and laboratory investigations were conducted. Patients underwent two follow-up visits at 12 weeks and 52 weeks.

Results: A total of 1650 patients were enrolled, with an average age of 42.2 ± 14.4 years and 63.3% females. According to follow-up visits, the cough duration was 12 (8,20) weeks, and chronic cough occurred in 68.4%. Cough relieved in 90.8% within 32 weeks. At baseline, sputum eosinophilia (≥ 2.5%) was found in 21.8% (46/211) patients, fractional exhaled nitric oxide level (≥ 25 ppb) elevated in 33.9% (176/519). In addition, 17.2% (73/425) of patients showed bronchial hyperresponsiveness. Cough hypersensitivity was found in 72.5% (37/55) for capsaicin and 63.2% (48/76) for adenosine triphosphate. Multivariate cox regression analysis showed that being older (P = 0.007), higher cough VAS (P < 0.001; P = 0.001), higher CET score (P < 0.001; P = 0.03), and comorbidities (P = 0.043) were associated with chronic cough.

Conclusion: In adult patients with COVID-19 Omicron infection, cough lasted for more than 8 weeks in over two thirds, and relieved within 32 weeks in majority of patients. Being older, worse cough severity, and comorbidities are the risk factors of developing chronic cough.

Clinical trials registry: ClinicalTrials.gov; No.: NCT06951321.

Keywords: COVID-19; Chronic cough; Postinfectious cough; Prognosis.

Conflict of interest statement

Declarations. Competing interests: The authors have no relevant financial or non-financial interests to disclose. Ethics Approval: This study was approved by the Ethics Review Committees of the First Affiliated Hospital of Guangzhou Medical University (NO. ES-2023-032-01). All participants signed informed consent to

participate. Consent to Participate: Informed consent was obtained from all individual participants included in the study.

- 45 references
- 2 figures

Supplementary info

Publication types, MeSH terms, Substances, Associated dataExpand

Full text links

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4

J Neurol

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. 2026 Mar 16;273(4):211.

doi: 10.1007/s00415-026-13751-y.

Targeted neurological screening for RFC1-related disease in unexplained chronic cough

Vicente Gajate-García [1], María Fenollar-Cortés [2], Juan Luis Rodríguez-Hermosa [3 4 5], Marina Lara-González [1], Clara Herrero-Forte [2], Iván Muerte-Moreno [6], Miriam Calle-Rubio [3 4 7], Alejandro Horga [8]

Affiliations Expand

- PMID: 41840142

- DOI: 10.1007/s00415-026-13751-y

Abstract

Background: Cerebellar ataxia, neuropathy, and vestibular areflexia syndrome (CANVAS) is caused by biallelic pathogenic repeat expansions in the RFC1 gene. Chronic cough can precede the neurological features of CANVAS by decades and, in some instances, may be the sole clinical manifestation. However, the prevalence of biallelic RFC1 repeat expansions among patients with unexplained chronic cough (UCC), as well as the diagnostic utility of targeted neurological screening in this setting, remains unclear.

Methods: In this 6-month pilot study, 13 consecutive patients with UCC underwent a standardized neurological evaluation and screening nerve conduction studies (NCS) during a single clinical visit. All patients were subsequently tested for RFC1 repeat expansions. Those carrying biallelic pathogenic expansions (RFC1+) were further assessed with extended NCS, electrochemical skin conductance (ESC), and thermal quantitative sensory testing (QST).

Results: Three patients (23%) were RFC1+. Clinical and demographic features did not significantly differ between RFC1+ and RFC1- groups. All RFC1+ individuals exhibited marked bilateral reduction in radial and sural sensory nerve action potential (SNAP) amplitudes. In contrast, only two RFC1- patients showed reduced sural SNAPs. QST revealed impaired cold detection thresholds with preserved warm detection in all RFC1+ cases, while ESC results were normal.

Conclusions: These findings suggest that standardized neurological and electrophysiological assessment can detect subclinical sensory neuropathy in UCC patients lacking overt neurological symptoms, thereby identifying those more likely to carry RFC1 expansions. The observed 23% prevalence supports incorporating RFC1 testing into the diagnostic approach for selected UCC patients, particularly when radial SNAP amplitudes are reduced.

Keywords: CANVAS; Chronic cough; Nerve conduction studies; RFC1; Sensory neuronopathy; Sensory neuropathy.

Conflict of interest statement

Declarations. Conflicts of interest: J.L.R.H. has received speaker or consulting fees from AstraZeneca, Bial, Boehringer Ingelheim, CSL Behring, GlaxoSmithKline, Grifols and Zambon. M.C.R. has received speaker or consulting fees from AstraZeneca, Bial, Chiesi, CSL Behring, GlaxoSmithKline, Grifols, Menarini and Zambon. A.H. has received speaker or consulting fees from Alexion, Bial and Biogen. All other authors declare that they have no conflict of interest. **Ethical approval:** The study was approved by the local Ethics Committee of the Hospital Clínico San Carlos (Madrid, Spain) and was conducted in accordance with the Declaration of Helsinki and its later amendments. **Informed consent:** Written informed consent was waived due to the retrospective nature of the study, in accordance with local ethics committee regulations.

- 20 references

Supplementary info

MeSH terms, SubstancesExpand

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Cite

5

Review

World J Methodol

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. 2026 Mar 20;16(1):108381.

doi: 10.5662/wjm.v16.i1.108381.

Excessive dynamic airway collapse: A condition behind the veil

Vivek Paudyal [1], Rubi Thapa [1], Asmita Itani [2], Munish Sharma [3], Rabindra Rayamajhi [4], Iqbal Ratnani [5], Salim Surani [6]

Affiliations Expand

- PMID: 41809150
- PMCID: PMC12968766
- DOI: 10.5662/wjm.v16.i1.108381

Abstract

Excessive dynamic airway collapse (EDAC) is characterized by weakness in the posterior membranous wall of the airway, which results in more than 50% narrowing of the central airway lumen during expiration. EDAC differs from tracheobronchomalacia, which involves the weakening of the cartilage rather than the membranous wall. EDAC poses a diagnostic challenge due to overlapping symptoms with chronic obstructive pulmonary disease and asthma, including dyspnea, cough, and wheezing. The diagnosis of EDAC relies on dynamic airway imaging techniques, including bronchoscopy, dynamic computed tomography, dynamic magnetic resonance imaging, and endobronchial ultrasound, to assess airway collapse during expiration. Pulmonary function testing helps in ruling out obstructive lung disease. Treatment includes medical management of underlying comorbidities, pulmonary rehabilitation, and, in severe cases, bronchoscopy-guided stenting of the airway or tracheobronchoplasty. This mini-review discusses pathophysiology, diagnostic challenges, and evolving treatment strategies for EDAC, highlighting the need for increased clinical awareness and targeted therapies.

Keywords: Bronchoscopy; Dynamic computed tomography; Excessive dynamic airway collapse; Obstructive pulmonary disease; Pulmonary function test; Stenting; Tracheobronchomalacia; Tracheobronchoplasty.

Conflict of interest statement

Conflict-of-interest statement: None of the authors has any conflict of interest to disclose.

- **72 references**
- **6 figures**

Supplementary info

Publication typesExpand

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6

Multicenter Study

Eur Respir J

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. 2026 Mar 19;67(3):2501435.

doi: 10.1183/13993003.01435-2025. Print 2026 Mar.

A multi-country cohort study evaluating the prevalence, risk factors, lung function and clinical outcomes of chronic bronchitis in low- and middle-income countries

Nicole M Robertson [1 2 3], Arun K Sharma [4 3], Mingling Yang [1 2], Santa K Das [5], Trishul Siddharthan [2 6], Suzanne L Pollard [1], Natalie A Rykiel [1 2], Patricia Alupo [7], Oscar Flores-Flores [2 8], Bruce Kirenga [7], Ram K Chandyo [9], Shumonta A Quaderi [10], Laxman Shrestha [4], Robert A Wise [1], John R Hurst [10], William Checkley [11 2]; and the Global Excellence in COPD outcomes (GECo) Study Investigators

Affiliations Expand

- **PMID: 41381225**

- **DOI: 10.1183/13993003.01435-2025**

Abstract

Background: Chronic bronchitis affects up to 40% of individuals with COPD, and may serve as an early predictor of the disease and development of COPD. We investigated the prevalence, risk factors and clinical outcomes associated with chronic bronchitis in three low- and middle-income countries (LMICs).

Methods: We conducted a population-based study of adults aged ≥40 years in Bhaktapur (Nepal), Lima (Peru) and Nakaseke (Uganda). Chronic bronchitis was defined as a productive cough several days per week in the past 4 weeks. Multivariable log-binomial regression identified risk factors and outcomes associated with chronic bronchitis.

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Conclusions: Chronic bronchitis is common in LMIC settings and is associated with multiple modifiable risk factors, including second-hand smoke, biomass exposure and prior respiratory disease. Addressing these factors may reduce disease burden and improve quality of life.

Conflict of interest statement

Conflict of interest: T. Siddharthan reports grants from AstraZeneca, Sanofi and GlaxoSmithKline, consultancy fees from GlaxoSmithKline, Apogee Therapeutics, Verona Pharmaceuticals and AstraZeneca, and receipt of equipment, materials, drugs, medical writing, gifts or other services from Siemens. O. Flores-Flores reports a grant from the US National Institutes of Health (K43 Global Emerging Fellow training grant). R.A. Wise reports grants from Chiesi, AstraZeneca and Sanofi, consultancy fees from the US Government CMS, participation on a data safety monitoring board or advisory board with AstraZeneca, Kamada, Bristol Myers Squibb, AbbVie, PureTech, Pulmonx and the American Lung Association, and leadership roles with the COPD Foundation and Clinical Endpoint Committees for AbbVie, Galderma, Boehringer Ingelheim, Chiesi, Biontech and AstraZeneca. J.R. Hurst reports grants from AstraZeneca, consultancy fees from AstraZeneca,

Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Sanofi-Regeneron and Takeda, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Sanofi-Regeneron and Takeda, and is an Associate Editor of the European Respiratory Journal. The remaining authors have no potential conflicts of interest to declare.

Comment in

- **Redefining chronic bronchitis: short-term symptoms or long-term burden?**

Knox-Brown B, Ma J.Eur Respir J. 2026 Mar 19;67(3):2502533. doi: 10.1183/13993003.02533-2025. Print 2026 Mar.PMID: 41856565 No abstract available.

- **Cited by 1 article**

Supplementary info

Publication types, MeSH termsExpand

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

1

Practice Guideline

Respiration

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. 2026 Mar 20:1-99.

doi: 10.1159/000551643. Online ahead of print.

Management of Adult Bronchiectasis - Consensus-based Guidelines of the German Respiratory Society

Felix C Ringshausen, Ingo Baumann, Andrés de Roux, Sabine Dettmer, Roland Diel, Monika Eichinger, Santiago Ewig, Holger Flick, Leif Hanitsch, Thomas Hillmann, Rembert Koczulla, Michael Köhler, Assen Koitschev, Christian Kugler, Thomas Nüsslein, Sebastian R Ott, Isabell Pink, Mathias Pletz, Gernot Rohde, Ludwig Sedlacek, Hortense Slevogt, Urte Sommerwerck, Sivagurunathan Sutharsan, Sönke von Weihe, Tobias Welte, Michael Wilken, Pontus Mertsch, Jessica Rademacher

- **PMID: 41861044**

- DOI: 10.1159/000551643

Abstract

Bronchiectasis is a chronic, often progressive respiratory disease characterized by irreversible dilation of the bronchi. It is etiologically heterogeneous and frequently associated with a significant symptom burden, multiple complications, and reduced quality of life. In recent years, the global prevalence of bronchiectasis has increased markedly, placing a substantial economic burden on healthcare systems. These consensus-based guidelines are the first German-language guidelines focused on the management of bronchiectasis in adults. They underscore the critical role of thoracic imaging - particularly computed tomography - in diagnosing and distinguishing bronchiectasis and highlight the importance of identifying the underlying etiology in guiding treatment decisions. The guidelines provide comprehensive recommendations for both pharmacological and non-pharmacological treatment strategies. Non-drug interventions include smoking cessation, physiotherapy, physical training, pulmonary rehabilitation, non-invasive ventilation, thoracic surgery, and lung transplantation. Pharmacological therapies emphasize the long-term use of mucolytics, bronchodilators, anti-inflammatory agents, and antibiotics. In addition, the guidelines address the management of upper airway involvement, common comorbidities, and acute exacerbations. They also cover socio-medical issues, disability rights, and the role of patient education and self-management in optimizing care. Special life stages - such as transition from pediatric to adult care, family planning, pregnancy, parenthood, and palliative care - are also considered. The overarching goal is to promote comprehensive, consensus-driven, and patient-centered care that accounts for individual risks and needs.

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"Breathlessness stops me doing everything": exploring the impact of chronic breathlessness due to advanced respiratory disease and exacerbating factors - a qualitative study

Charles C Reilly [1 2], Irene J Higginson [2], Anna Roach [2], Trudie Chalder [3], Katherine Bristowe [2]

Affiliations Expand

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Abstract

Introduction: Breathlessness is a global, transdiagnostic problem, contributing to disability, reduced quality of life and higher healthcare costs. As the global population ages and multimorbidity increases, the prevalence of breathlessness is expected to rise. Therefore, there is an urgent need to co-design new services and treatments for breathlessness. To achieve this, it is essential to understand the lived experience of breathlessness. This study aimed to explore the lived experience of chronic breathlessness, focusing on its impact and contributing factors that exacerbate breathlessness.

Methods: Semi-structured telephone interviews were conducted with adults experiencing chronic breathlessness caused by advanced malignant and nonmalignant diseases (July to November 2020). The interviews were analysed using conventional content analysis.

Results: 25 patients with advanced respiratory disease and chronic breathlessness ((COPD, 13; lung cancer, 8; interstitial lung disease, 3; and bronchiectasis, 1), 17 male, median age 70 years (range 47-86), Medical Research Council dyspnoea score 3 (2 -5)) were interviewed. Four key themes were identified: 1) the impact of breathlessness on daily activities, leading to increased dependence on others; 2) the effect of breathlessness on social interactions and personal relationships, resulting in isolation; 3) the impact of living with multiple long-term conditions and environmental factors that worsen breathlessness; and 4) cognitive, affective and behavioural responses to breathlessness.

Conclusion: Breathlessness significantly disrupts daily life, limiting independence and social engagement, with psychological and behavioural responses further restricting activity. An integrated, public health approach, collaborating with housing and environmental agencies is essential to address modifiable factors and reduce the burden on individuals and healthcare systems.

Conflict of interest statement

Conflict of interest: C.C. Reilly reports support for the present study from the National Institute for Health and Care Research (NIHR) Clinical Lectureship (ICA-CL-2018-04-ST2-001) and NIHR Advanced Clinical and Practitioner Academic Fellowship (NIHR302904) and grants from King's Together: Multi and Interdisciplinary Research Scheme and Royal Brompton Hospital – King's Health Partnership Transformation funding. I.J. Higginson reports grants from the European Commission, NIHR, UKRI, Cicely Saunders International and Marie Curie, and leadership roles with NIHR (Emeritus Senior Investigator and Funding Committee Chair), King's College Hospital NHS Foundation Trust (Honorary Clinical Consultant in Palliative Medicine) and Cicely Saunders International (Scientific Director). A. Roach has no conflicts to disclose. T. Chalder reports support for the present study from NIHR Mental Health Biomedical Research Centre at South London and Maudsley NHS Foundation Trust and King's College London. K. Bristowe reports grants from NIHR, Marie Curie, MRC and EC European Commission.

- **51 references**
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Clinical profile and in-hospital outcomes of patients hospitalised for bronchiectasis exacerbation

Francesco Bindo [1], Edoardo Simonetta [2], Andrea Gramegna [1 3], Paola Faverio [4 5], Paola Scarano [2], Veronica Polelli [2], Anna Stainer [2 6], Francesco Amati [2 6], Mattia Nigro [2 6], Angela Tramontano [2], Sara Mirijaj [3], Pietro Curci [4 5], Manuel Mancuso [7], Claudia Crimi [7 8], Fabrizio Luppi [4 5], Francesco Blasi [1 3], Stefano Aliberti [2 6]

Affiliations Expand

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Abstract

Patients hospitalised for bronchiectasis exacerbations face significant in-hospital risks. Cardiovascular disease, pulmonary hypertension and low FEV_1 % pred are key predictors of short-term complications and should guide early risk assessment. https://bit.ly/42UOpJ3.

Conflict of interest statement

Conflict of interest: F. Bindo, E. Simonetta, P. Faverio, P. Scarano, V. Polelli, A. Stainer, F. Amati, M. Nigro, A. Tramontano, S. Mirajaj, P. Curci, M. Mancuso and F. Luppi declare no conflict of interest. A. Gramegna has received honoraria from Chiesi, Vertex, and Insmed for lectures outside the submitted work. C. Crimi has received lecture fees from F&P, ResMed, Philips, Vital Aire, GSK, AstraZeneca and Sanofi; and has participated on an advisory board for Vital Aire, outside the submitted work. F. Blasi reports grants from AstraZeneca, Chiesi and Insmed; and honoraria for lectures or advisory boards from AstraZeneca, Chiesi, Boehringer Ingelheim, GSK, Guidotti, Grifols, Insmed, Menarini, Novartis, OM Pharma, Pfizer, Sanofi, Vertex and Zambon, outside the submitted work. S. Aliberti has received personal fees for consulting and lectures from Insmed (multiple branches), Zambon, AstraZeneca, Menarini, CSL Behring, Pfizer, Fondazione Internazionale Menarini, Moderna, Boehringer Ingelheim, Chiesi, MSD, Vertex, BRAHMS, Physioassist, AN2 Therapeutics, GSK and Verona Pharma; grants from GSK; and participated on advisory boards for Insmed, AstraZeneca, MSD and Verona Pharma, outside the submitted work.

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A novel quantitative method for CT assessment of bronchiectasis using AI-based airway segmentation and upper limits of normal airway caliber

Naoya Tanabe [1], Atsuyasu Sato [2], Tomoki Maetani [2], Ryo Sakamoto [3], Motonari Fukui [4], Izuru Masuda [5], Megumi Kanasaki [5], Tomohiro Handa [2 6], Susumu Sato [2 7], Satoshi Morita [8], Toyohiro Hirai [2]

Affiliations Expand

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Conflict of interest statement

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- 32 references

Supplementary info

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