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

1

Stud Health Technol Inform

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. 2024 Aug 22:316:226-227.

doi: 10.3233/SHTI240385.

[Telemonitoring of COPD Patients to Evaluate the "Rome Proposal"](#)

[Petra Jacobson](#)¹, [Leili Lind](#)^{2,3}, [Hans Lennart Persson](#)¹

Affiliations Expand

- PMID: 39176714
- DOI: [10.3233/SHTI240385](#)

Abstract

For the first time in a telemonitoring context, we apply the Rome Proposal (RP), recently adopted by GOLD 2023, to assess the severity of exacerbations (ECOPD). So far, we have analysed 387 study weeks, which include only 18 ECOPDs; 4 mild,

13 moderate and 1 severe according to the criteria from RP. There is a promising potential of telemonitoring based on the RP.

Keywords: COPD; Rome Proposal; cost-effectiveness; telemonitoring.

Supplementary info

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2

Randomized Controlled Trial

J Rehabil Med

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. 2024 Aug 22:56:jrm39953.

doi: 10.2340/jrm.v56.39953.

[Early comprehensive pulmonary rehabilitation for hospitalized patients with acute ex-acerbation of chronic obstructive pulmonary disease: a randomized controlled trial](#)

[Yuqin Zeng¹, Qian Wu¹, Yan Chen¹, Shan Cai²](#)

Affiliations Expand

- PMID: 39175447
- DOI: [10.2340/jrm.v56.39953](#)

Free article

Abstract

Objective: To investigate whether an early comprehensive pulmonary rehabilitation intervention initiated during hospital admission is safe and effective for patients with acute exacerbation of chronic obstructive pulmonary disease.

Design: Prospective randomized controlled study.

Subjects/patients: Patients with acute exacerbation of chronic obstructive pulmonary disease.

Methods: In total, 108 patients were randomized to the early comprehensive pulmonary rehabilitation and usual care groups within 48 hours. The 6-min walking distance, quality of life, breathlessness, and inspiratory muscle strength were measured on admission and discharge. Any adverse events of pulmonary rehabilitation were recorded.

Results: On discharge, the patients in the early comprehensive pulmonary rehabilitation group had a more significant improvement in the 6-min walking distance (47.5 vs 23.0, $p = 0.04$). There was no significant difference in quality of life and breathlessness between the 2 groups. In the early comprehensive pulmonary rehabilitation group, inspiratory muscle strength and peak inspiratory flow were significantly improved, and the changes were much more pronounced than in the usual care group. There were no adverse events.

Conclusion: Early comprehensive pulmonary rehabilitation is safe and effective for hospitalized patients with acute exacerbation of chronic obstructive pulmonary disease, and should be performed during the early stage of hospitalization.

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Review

Expert Rev Respir Med

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. 2024 Aug 22.

doi: 10.1080/17476348.2024.2396413. Online ahead of print.

[New methods to detect bacterial or viral infections in patients with chronic obstructive pulmonary disease](#)

[John C Hu](#)¹, [Sanjay Sethi](#)²

Affiliations Expand

- PMID: 39175157
- DOI: [10.1080/17476348.2024.2396413](#)

Abstract

Introduction: Patients with chronic obstructive pulmonary disease (COPD) are frequently colonized and infected by respiratory pathogens. Identifying these infectious etiologies is critical for understanding the microbial dynamics of COPD and for the appropriate use of antimicrobials during exacerbations.

Areas covered: Traditional methods, such as bacterial and viral cultures, have been standard in diagnosing respiratory infections. However, these methods have significant limitations, including lack of sensitivity and prolonged turnaround time. Modern molecular approaches offer rapid, sensitive, and specific detection, though they also come with their own challenges. This review explores and evaluates the clinical utility of the latest advancements in detecting bacterial and viral respiratory infections in COPD, encompassing molecular techniques, biomarkers, and emerging technologies.

Expert opinion: In the evolving landscape of COPD management, integrating molecular diagnostics and emerging technologies holds great promise. The enhanced sensitivity of molecular techniques has significantly advanced our understanding of the role of microbes in COPD. However, many of these technologies have primarily been developed for pneumonia diagnosis or research applications, and their clinical utility in managing COPD requires further evaluation.

Keywords: COPD exacerbation; Chronic obstructive pulmonary disease; biomarkers; microbiome; molecular diagnostics; multiplex PCR.

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4

Review

Respir Res

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. 2024 Aug 22;25(1):319.

doi: [10.1186/s12931-024-02913-z](https://doi.org/10.1186/s12931-024-02913-z).

[Artificial intelligence in COPD CT images: identification, staging, and quantitation](#)

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Affiliations Expand

- PMID: 39174978
- PMCID: [PMC11340084](#)
- DOI: [10.1186/s12931-024-02913-z](https://doi.org/10.1186/s12931-024-02913-z)

Abstract

Chronic obstructive pulmonary disease (COPD) stands as a significant global health challenge, with its intricate pathophysiological manifestations often demanding advanced diagnostic strategies. The recent applications of artificial intelligence (AI) within the realm of medical imaging, especially in computed tomography, present a promising avenue for transformative changes in COPD diagnosis and management. This review delves deep into the capabilities and advancements of AI, particularly focusing on machine learning and deep learning, and their applications in COPD identification, staging, and imaging phenotypes. Emphasis is laid on the AI-powered insights into emphysema, airway dynamics, and vascular structures. The challenges linked with data intricacies and the integration of AI in the clinical landscape are discussed. Lastly, the review casts a forward-looking perspective, highlighting emerging innovations in AI for COPD imaging and the potential of interdisciplinary collaborations, hinting at a future where AI doesn't just support but pioneers breakthroughs in COPD care. Through this review, we aim to provide a comprehensive understanding of the current state and future potential of AI in shaping the landscape of COPD diagnosis and management.

Keywords: Artificial intelligence; Chronic obstructive pulmonary disease; Computed tomography.

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Conflict of interest statement

The authors declare no competing interests.

- [172 references](#)
- [8 figures](#)

Supplementary info

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5

Thorax

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. 2024 Aug 22:thorax-2024-221721.

doi: 10.1136/thorax-2024-221721. Online ahead of print.

[Consensus palliative care referral criteria for people with chronic obstructive pulmonary disease](#)

[Jennifer Philip](#)^{1 2 3 4}, [Yuchieh Kathryn Chang](#)⁵, [Anna Collins](#)⁶, [Natasha Smallwood](#)^{7 8 9}, [Donald Richard Sullivan](#)¹⁰, [Barbara P Yawn](#)¹¹, [Richard Mularski](#)¹², [Magnus Ekström](#)¹³, [Ian A Yang](#)^{14 15}, [Christine F McDonald](#)¹⁶, [Masanori Mori](#)¹⁷, [Pedro Perez-Cruz](#)¹⁸, [David M G Halpin](#)¹⁹, [Shao-Yi Cheng](#)²⁰, [David Hui](#)⁵

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- PMID: 39174326
- DOI: [10.1136/thorax-2024-221721](#)

Abstract

Objective: People with advanced chronic obstructive pulmonary disease (COPD) have substantial palliative care needs, but uncertainty exists around appropriate identification of patients for palliative care referral. We conducted a Delphi study of international experts to identify consensus referral criteria for specialist outpatient palliative care for people with COPD.

Methods: Clinicians in the fields of respiratory medicine, palliative and primary care from five continents with expertise in respiratory medicine and palliative care rated 81 criteria over three Delphi rounds. Consensus was defined a priori as $\geq 70\%$ agreement. A criterion was considered 'major' if experts endorsed meeting that criterion alone justified palliative care referral.

Results: Response rates from the 57 panellists were 86% (49), 84% (48) and 91% (52) over first, second and third rounds, respectively. Panellists reached consensus on 17 major criteria for specialist outpatient palliative care referral, categorised under: (1) 'Health service use and need for advanced respiratory therapies' (six criteria, eg, need for home non-invasive ventilation); (2) 'Presence of symptoms, psychosocial and decision-making needs' (eight criteria, eg, severe (7-10 on a 10 point scale) chronic breathlessness); and (3) 'Prognostic estimate and performance status' (three criteria, eg, physician-estimated life expectancy of 6 months or less).

Conclusions: International experts evaluated 81 potential referral criteria, reaching consensus on 17 major criteria for referral to specialist outpatient palliative care for people with COPD. Evaluation of the feasibility of these criteria in practice is required to improve standardised palliative care delivery for people with COPD.

Keywords: Palliative Care; Referral and Consultation.

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Conflict of interest statement

Competing interests: None declared.

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Chest

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. 2024 Aug 20:S0012-3692(24)04900-6.

doi: 10.1016/j.chest.2024.05.051. Online ahead of print.

[The responsiveness of different exercise tests in Chronic Obstructive Pulmonary Disease: a randomised controlled trial](#)

[Theresa C Harvey-Dunstan](#)¹, [Molly M Baldwin](#)², [Ruth Tal-Singer](#)³, [Matthew Allinder](#)³, [Michael I Polkey](#)⁴, [Alan Hamilton](#)⁵, [Matthew Richardson](#)¹, [Sarah A Edwards](#)¹, [Michael C Steiner](#)², [Michael D Morgan](#)², [Sally J Singh](#)⁶; [COPD/MAP Consortium](#)

Affiliations Expand

- PMID: 39173827
- DOI: [10.1016/j.chest.2024.05.051](https://doi.org/10.1016/j.chest.2024.05.051)

Abstract

Background: Chronic obstructive pulmonary disease (COPD) is characterised by reduced exercise tolerance and improving physical performance is an important therapeutic goal. A variety of exercise tests are commonly used to assess exercise tolerance, including laboratory and field-based tests. The responsiveness of these tests to common COPD interventions is yet to be compared, but may inform test selection in clinical and research settings.

Research question: What exercise test possesses the greatest sensitivity to change pre- to post-intervention in patients with COPD?

Study design and methods: 154 patients with symptomatic COPD were recruited and randomised (2:1:1) to six weeks of long-acting muscarinic antagonist (LAMA), pulmonary rehabilitation (PR), or usual care (UC). Pre- and post-intervention, participants performed a ramp-incremental and constant work rate cycle ergometer exercise test (ICET and CWRCT), incremental and endurance shuttle walk test (ISWT and ESWT), six-minute walk test (6MWT), and a four metre gait speed test (4MGS).

Results: 103 participants (67 ± 8 y; 75 [73%] males; FEV₁: 50.6 ± 16.8 % predicted) completed the study. Significant improvements in the ICET, CWRCT, ISWT, ESWT, and 6MWT were observed following PR (p<0.05), with the greatest improvements seen in the constant work rate protocols (% change: CWRCT: 42%; ESWT: 41%).

Interpretation: The ESWT and CWRCT appeared to be the most responsive exercise test protocols to LAMA and PR. The magnitude of change was much greater after a programme of rehabilitation compared to bronchodilator therapy.

Keywords: COPD; exercise testing; outcome measure; pulmonary rehabilitation; responsiveness.

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7

Respiration

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. 2024 Aug 22.

doi: 10.1159/000540781. Online ahead of print.

[GOLD-grade specific disease characterization and phenotyping of COPD using quantitative computed tomography in the nationwide COSYCONET multicenter trial in Germany](#)

[Philip Konietzke](#), [Oliver Weinheimer](#), [Simon M F Triphan](#), [Sebastian Nauck](#), [Felix Wuennemann](#), [Marilisa Konietzke](#), [Bertram J Jobst](#), [Rudolf A Jörres](#), [Claus F Vogelmeier](#), [Claus P Heussel](#), [Hans-Ulrich Kauczor](#), [Jürgen Biederer](#), [Mark O Wielpütz](#); [COSYCONET study group](#)

- PMID: 39173593
- DOI: [10.1159/000540781](#)

Abstract

Introduction: To apply quantitative computed tomography (QCT) for GOLD-grade specific disease characterization and phenotyping of air-trapping, emphysema, and airway abnormalities in patients with chronic obstructive pulmonary disease (COPD) from a nationwide cohort study.

Methods: As part of the COSYCONET multicenter study, standardized CT in ex- and inspiration, lung function assessment (FEV1/FVC) and clinical scores (BODE index) were prospectively acquired in 525 patients (192women, 327men, aged 65.7±8.5y) at risk for COPD and at GOLD1-4. QCT parameters total lung volume (TLV), emphysema index (EI), parametric response mapping (PRM) for emphysema (PRMEmph) and functional small airway disease (PRMfSAD), total airway volume (TAV), wall percentage (WP) and total diameter (TD) were computed using automated software.

Results: TLV, EI, PRMfSAD and PRMEmph increased incrementally with each GOLD grade ($p < 0.001$). Aggregated WP5-10 of subsegmental airways was higher from GOLD1 to GOLD3 and lower again at GOLD4 ($p < 0.001$), whereas TD5-10 was significantly dilated only in GOLD4 ($p < 0.001$). 58 patients were phenotyped as 'non-airway non-emphysema type', 202 as 'airway type', 96 as 'emphysema type' and 169 as 'mixed type'. FEV1/FVC was best in 'non-airway non-emphysema type' compared to other phenotypes, while 'mixed type' had worst FEV1/FVC ($p < 0.001$). BODE index was 0.56 ± 0.72 in the 'non-airway non-emphysema type' and highest with 2.55 ± 1.77 in 'mixed type' ($p < 0.001$).

Conclusion: QCT demonstrates increasing hyperinflation and emphysema dependent on GOLD grade, while airway wall thickening increases until GOLD 3 and airway dilatation occurs in GOLD4. QCT identifies four disease phenotypes with implications for lung function and prognosis.

S. Karger AG, Basel.

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8

Ann Phys Rehabil Med

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. 2024 Aug 21;67(7):101866.

doi: 10.1016/j.rehab.2024.101866. Online ahead of print.

[Reliability of the 1-minute sit-to-stand test in chronic obstructive pulmonary disease](#)

[Hang Nguyen Thi Thu](#)¹, [Bao Le Khac](#)², [William Poncin](#)³

Affiliations Expand

- PMID: 39173551
- DOI: [10.1016/j.rehab.2024.101866](https://doi.org/10.1016/j.rehab.2024.101866)

No abstract available

Keywords: COPD; Evaluation; Exercise tolerance; Functional exercise capacity; Reliability; Sit-to-stand test.

Conflict of interest statement

Declaration of competing interest All authors declare that they have no competing interests.

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9

BMC Health Serv Res

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. 2024 Aug 21;24(1):960.

doi: 10.1186/s12913-024-11370-9.

[Patient perspectives on the Tailored intervention for Anxiety and Depression Management in COPD \(TANDEM\): a qualitative evaluation](#)

[Ratna Sohanpal¹, Kristie-Marie Mammoliti², Amy Barradell³, Moira Kelly⁴, Sian Newton⁴, Liz Steed⁴, Vari Wileman⁵, Vickie Rowland⁶, Clarisse Dibao-Dina⁷, Anna Moore⁸, Hilary Pinnock⁹, Stephanie J C Taylor⁴](#)

Affiliations Expand

- PMID: 39169308
- PMCID: [PMC11337569](#)
- DOI: [10.1186/s12913-024-11370-9](#)

Abstract

Background: Chronic obstructive pulmonary disease (COPD) is commonly associated with anxiety/depression which can affect self-management and quality of life. The TANDEM trial evaluated a cognitive behavioural approach intervention targeting COPD-related symptoms of anxiety and/or depression, comprising up to eight one-to-one sessions delivered by respiratory healthcare professionals prior to pulmonary rehabilitation (PR). The intervention showed no improvement in anxiety/depression or uptake/completion of PR. We present patient perspectives of the intervention to help understand these results.

Method: Semi-structured individual interviews, using a semi-structured topic guide informed by Sekhon's Theoretical Framework of Acceptability, were conducted with 19 patients between September 2019 and April 2020. The interviews were audio-recorded, transcribed verbatim and analysed thematically.

Results: The following could have limited the impact of the intervention: (1) The lives of patients were complex and commonly affected by competing comorbidities or other external stressors which they managed through previously adopted long-standing coping strategies. (2) Some patients were reluctant to talk about their mood despite the Facilitators' training and person centred-skills which aimed to enable patients to talk freely about mood. (3) The intervention handouts and 'home-practice' were perceived as helpful for some, but not suitable for all. (4) Many patients perceived improvements in their physical and mental health, but this was not sustained due to a mix of personal and external factors, and some did not perceive any benefits. (5) PR non-attendance/non-completion was a result of personal and PR service-related reasons. (6) Discussing COPD and mental health with the Facilitator was a novel experience. Many patients felt that TANDEM could be of benefit if it was offered earlier on/at different time points in the COPD illness journey.

Conclusion: We found the delivery of TANDEM prior to PR was not helpful for patients with advanced COPD often experiencing other comorbidities, and/or difficult personal/external events. These patients already utilised long-standing coping strategies to manage their COPD. Holistic interventions, that address the impact of COPD in relation to wider aspects of a patients' life, may be more beneficial.

Trial registration: ISRCTN Registry 59,537,391. Registration date 20 March 2017.

Keywords: Anxiety; Chronic obstructive; Depression; Psychological intervention; Pulmonary disease; Qualitative research.

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Conflict of interest statement

The authors declare no competing interests.

- [59 references](#)

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10

Observational Study

J Health Popul Nutr

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. 2024 Aug 20;43(1):128.

doi: [10.1186/s41043-024-00599-z](https://doi.org/10.1186/s41043-024-00599-z).

[Investigation of non-communicable diseases prevalence, patterns, and patient outcomes in hospitalized populations: a prospective observational study in three tertiary hospitals](#)

[Alemu Belayneh](#)¹, [Legese Chelkeba](#)^{2,3}, [Firehiwot Amare](#)¹, [Henok Fisseha](#)⁴, [Senbeta Guteta Abdissa](#)⁵, [Mirgissa Kaba](#)⁶, [Shivani A Patel](#)⁷, [Mohammed K Ali](#)⁷

Affiliations Expand

- PMID: 39164738
- PMCID: [PMC11337899](#)
- DOI: [10.1186/s41043-024-00599-z](https://doi.org/10.1186/s41043-024-00599-z)

Abstract

Background: Non-communicable diseases (NCDs) pose a significant global health challenge, constituting over 80% of mortality and morbidity. This burden is particularly pronounced in low- and middle-income countries (LMICs), including Ethiopia. Despite this, there's limited research on this issue in Africa. This study aims to investigate the prevalence, patterns, and outcomes of NCDs in hospitalized populations across three tertiary hospitals in Ethiopia.

Methods: A hospital-based cohort study (August 2022 - January 2023) included patients aged 14 and older diagnosed with cardiovascular diseases (CVDs), diabetes mellitus (DM), chronic obstructive pulmonary disease (COPD), asthma, or cancer at three Ethiopian hospitals. Data on demographics, socio-economic factors, clinical characteristics, and outcomes were collected through medical records and interviews. Logistic regression identified factors independently associated with in-hospital mortality, with $p \leq 0.05$ considered statistically significant.

Results: In the study across three tertiary hospitals involving 2,237 patients, we uncovered the impact of NCDs. About 23.4% of patients struggled with NCDs, with cardiovascular diseases (53.3%), cancer (29.6%), diabetes (6.1%), and respiratory diseases (6.5%) being the most prevalent. Notably, among those affected, women comprised a slight majority (55.1%), with the average patient age being 47.2 years. Unfortunately, 15.3% of patients with NCDs faced in-hospital mortality. Our analysis revealed predictors of mortality, including cancer diagnosis (adjusted odds ratio [AOR]:1.6, 95% CI: 1.2-1.8, $p = 0.01$), medication adherence (AOR: 0.36, 95% CI: 0.21-0.64, $p < 0.001$), concurrent infections (AOR: 0.36, 95% CI: 0.16-0.86, $p < 0.001$), chronic kidney diseases (CKD) (AOR: 0.35, 95% CI: 0.14-0.85, $p = 0.02$), and complications during hospitalization (AOR: 6.36, 95% CI: 3.45-11.71, $p < 0.001$).

Conclusion: Our study reveals a substantial prevalence of NCDs among hospitalized patients, affecting approximately one in four individuals, primarily with CVDs and cancer. Alarmingly, a significant proportion of these patients did not survive their hospitalization, emphasizing the urgent need for targeted interventions to enhance outcomes in this population.

Keywords: Clinical outcomes; Hospital admissions; Non-communicable diseases; Socio-economic disparities.

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Conflict of interest statement

The authors declare no competing interests.

- [37 references](#)
- [7 figures](#)

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. 2024 Aug 20;24(1):399.

doi: 10.1186/s12890-024-03211-6.

[Elevated inflammatory burden index increases mortality in adults with chronic inflammatory airway diseases: a nationwide cohort study](#)

[Ning Zhu](#)^{#1}, [Shanhong Lin](#)^{#2}, [Linfeng Wang](#)¹, [Xue Kong](#)¹, [Weina Huang](#)³, [Chao Cao](#)⁴

Affiliations Expand

- PMID: 39164650
- PMCID: [PMC11337749](#)
- DOI: [10.1186/s12890-024-03211-6](#)

Abstract

Objective: The objective of this study was to investigate the potential association between the inflammatory burden index (IBI) and the prevalence of chronic inflammatory airway diseases (CIAD), as well as mortality rates among individuals diagnosed with CIAD.

Methods: Participants were sourced from the National Health and Nutrition Examination Survey (NHANES) conducted between 1999 and 2010. The IBI was calculated using the formula: $IBI = C\text{-reactive protein} * \text{neutrophils} / \text{lymphocytes}$. CIAD comprised self-reported asthma, chronic bronchitis, and chronic obstructive pulmonary disease (COPD). Mortality outcomes, including all-cause and respiratory disease mortality, were determined through linked data from the National Death Index (NDI) up to December 2019.

Results: A total of 27,495 adults were included. IBI was divided into quartiles, with the lowest quartile as the reference group. After adjusting for confounding variables, a positive correlation was observed between higher IBI and increased prevalence of total CIAD (OR = 1.383 [1.215-1.575]), asthma (OR = 1.267 [1.096-1.465]), chronic bronchitis (OR = 1.568 [1.263-1.946]), and COPD (OR = 1.907 [1.311-2.774]). Over a median follow-up of 12.33 [9.92-16.00] years, there were 1221 deaths from all causes and 220 deaths from respiratory disease among 4499 patients with CIAD. Following multivariate adjustments, the fourth quartile was significantly associated with increased risk of all-cause mortality (HR = 2.227 [1.714-2.893]) and

respiratory disease mortality (HR = 2.748 [1.383-5.459]) compared to the first quartile of IBI in CIAD participants. Moreover, variable importance analysis using a random survival forest model demonstrated the significance of IBI in predicting mortality from both all-cause and respiratory diseases.

Conclusion: IBI exhibited an association with the prevalence of CIAD, with higher IBI levels correlating with elevated all-cause and respiratory disease mortality among individuals with CIAD.

Keywords: Asthma; CIAD; COPD; Chronic bronchitis; IBI; Mortality; NHANES.

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Conflict of interest statement

The authors declare no competing interests.

- [44 references](#)
- [4 figures](#)

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12

Ann Am Thorac Soc

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. 2024 Aug 20.

doi: 10.1513/AnnalsATS.202401-099OC. Online ahead of print.

[Duration and Frequency of Spirometry Needed to Accurately Reflect Annualized Change of FEV₁ in COPD](#)

[Jared D Wilkinson](#)¹, [Holly Wilhalme](#)², [Christopher B Cooper](#)³, [Igor Z Barjaktarevic](#)⁴, [Donald P Tashkin](#)⁵

Affiliations Expand

- PMID: 39163601
- DOI: [10.1513/AnnalsATS.202401-099OC](https://doi.org/10.1513/AnnalsATS.202401-099OC)

Abstract

Rationale: The slope of FEV₁ decline is commonly used to reflect the rate of disease progression for descriptive studies and therapeutic trials in COPD. Frequency and duration of spirometric testing needed to report the true slope is unknown.

Objective: To define the minimum frequency and follow-up duration needed to accurately describe the annualized rate of FEV₁ change among patients with moderate-to-very severe COPD.

Methods: We performed a post-hoc analysis of the annualized rate of FEV₁ change among 4412 subjects previously enrolled in the four-year UPLIFT trial of tiotropium versus placebo. Slope estimates were modeled for different iterations of semiannual or annual testing over a variable duration up to four years. All models were compared to a reference of semiannual spirometry for four years.

Measurements and main results: The overall rate of post-bronchodilator FEV₁ decline measured semi-annually for four years (44.6 ml; 95% CI:42.5-46.6) did not differ significantly from annual spirometry over the same period (43.7 ml; 95% CI:41.3-46.1) or semiannual spirometry over the first two years (44.3 ml; 95% CI:41.1-47.5). Agreement was consistent for two follow-up values as far as 24 months apart (43.3ml; 95% CI:39.9-46.8). Models based on less than two follow-up values or duration less than 18 months were characterized by relative underestimation of the slope.

Conclusions: In a large cohort of patients with moderate-to-very severe COPD, the annualized rate of change in FEV₁ was accurately represented by a minimum of two follow-up measurements over 18 months compared to semiannual testing over four years.

Full text links



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

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Eur J Prev Cardiol

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. 2024 Aug 23:zwae260.

doi: 10.1093/eurjpc/zwae260. Online ahead of print.

[The cold temperature associated with new-onset heart failure after incorporating dynamic status of multimorbidity: nationwide cohort, Taiwan 2012-2019](#)

[Dong-Yi Chen](#)^{1 2 3}, [Shu-Hao Chang](#)⁴, [Wen-Kuan Huang](#)^{3 5 6}, [I Chang Hsieh](#)^{1 2 3}, [Lai-Chu See](#)^{2 4 7 8}

Affiliations Expand

- PMID: 39177222
- DOI: [10.1093/eurjpc/zwae260](https://doi.org/10.1093/eurjpc/zwae260)

Abstract

Aims: Cold temperatures are known to affect heart failure (HF) hospitalizations, but the dynamic status of multi-morbidity of HF was rarely incorporated. We investigated the relationship between temperature and new-onset HF by risk strata.

Methods and results: This nationwide cohort study analysed daily data on ambient temperature, the dynamic status of risk factors (age, diabetes, chronic obstructive pulmonary disease, coronary artery disease, chronic kidney disease, hypertension, myocardial infarction, and atrial fibrillation), and new-onset HF among the Taiwan population from 2012 to 2019. Poisson regression, Austin's algorithm, and classification and regression tree (CART) were used to determine risk strata and obtain the predicted HF rate. 148 708 patients developed new-onset HF over 152.52 million person-years. Three risk strata for HF were identified: Stratum 1 was predominantly those without any comorbidity (89.9%); Stratum 2 was those aged 60-69 with 2-3 comorbidities or aged 70+ with 1-2 comorbidities (9.0%), and Stratum 3 was those aged 70+ and had four or more comorbidity (1.1%). The HF incidence rates for these three strata were 25.54, 555.27, and 2315.52 per 100 000 person-years, respectively. The R² of the Poisson regression with the three risk strata and the daily minimum temperature on the ln HF incidence rates was 77.99%. The risk of HF increased as temperatures decreased, and the slopes were 1.032, 1.040, and 1.034 for Strata 1-3, respectively. The rate ratios of HF at the winter median temperature of 17°C vs. the summer median temperature of 29°C were 1.45, 1.58, and 1.49 for Strata 1-3, respectively. Cross-validation reveals a good fit and predicted HF rates by ambient temperature for the three strata were provided.

Conclusion: Cold temperatures are associated with an increased risk of new-onset HF. Stratum 2 (aged 60-69 with 2-3 comorbidities or aged 70+ with 1-2 comorbidities) are particularly susceptible to cold-related new-onset HF.

Keywords: Ambient temperature; Daily data; Dynamic risk factors; Heart failure; Prediction.

Plain language summary

Cold temperatures are known to affect heart failure (HF) hospitalizations, but the dynamic status of multi-morbidity of HF was rarely incorporated. Three risk strata

for HF were determined for the Taiwan population from 2012 to 2019: Stratum 1 was predominantly young or without comorbidities (89.9%); Stratum 2 was those aged 60–69 with 2–3 comorbidities or aged 70+ with 1–2 comorbidities (9.0%), and Stratum 3 was those aged 70+ and had four or more risk factors (1.1%). The HF incidence rates for these three strata were 25.54, 555.27, and 2315.52 per 100 000 person-years, respectively. The rate ratios of HF at the winter median temperature of 17°C vs. the summer median temperature of 29°C were 1.45, 1.58, and 1.49 for Strata 1–3, respectively. Other than cold temperatures are associated with an increased risk of new-onset HF, Stratum 2 (those aged 60–69 with 2–3 comorbidities or aged 70+ with 1–2 comorbidities) are particularly susceptible to cold-related new-onset HF. Predicted HF rates by ambient temperature for the three strata were provided so that individuals can find their predicted HF rate based on the risk score and the current temperature and, therefore, be amenable to primary preventive efforts.

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Conflict of interest statement

Conflict of interest: The remaining authors have nothing to disclose.

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Stud Health Technol Inform

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. 2024 Aug 22:316:1763-1764.

doi: 10.3233/SHTI240772.

[Collaborative Care Interventions for Patients with Multimorbidity: Protocol for a Systematic Review and Meta-Analysis with Preliminary Results](#)

[Anne-Maj Knudsen](#)^{1,2}, [Ann-Cathrine D Dunvald](#)^{3,4}, [Stine Hangaard](#)^{1,2}, [Ole Hejlesen](#)¹, [Thomas Kronborg](#)^{1,2}

Affiliations Expand

- PMID: 39176558
- DOI: [10.3233/SHTI240772](#)

Abstract

Collaborative care interventions have been proposed as a promising strategy for the management of patients with multimorbidity. This systematic review and meta-analysis aims to assess the effectiveness of collaborative care interventions for adult patients with multimorbidity. Furthermore, a meta-regression analysis is planned to determine if certain participant or intervention characteristics can explain variance in effect.

Keywords: Collaborative Care; Multimorbidity; Quality of Life; Systematic Review.

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Nat Commun

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. 2024 Aug 21;15(1):7190.

doi: 10.1038/s41467-024-51467-7.

[Unique genetic and risk-factor profiles in clusters of major depressive disorder-related multimorbidity trajectories](#)

[Andras Gezsi](#) ^{#1}, [Sandra Van der Auwera](#) ^{#2 3}, [Hannu Mäkinen](#) ⁴, [Nora Eszlari](#) ^{5 6}, [Gabor Hullam](#) ^{1 5}, [Tamas Nagy](#) ^{1 5 6}, [Sarah Bonk](#) ², [Rubèn González-Colom](#) ⁷, [Xenia Gonda](#) ^{5 6 8}, [Linda Garvert](#) ², [Teemu Paaanen](#) ⁴, [Zsafia Gal](#) ^{5 6}, [Kevin Kirchner](#) ², [Andras Millinghoffer](#) ⁹, [Carsten O Schmidt](#) ¹⁰, [Bence Bolgar](#) ¹, [Josep Roca](#) ⁷, [Isaac Cano](#) ⁷, [Mikko Kuokkanen](#) ^{4 11 12}, [Peter Antal](#) ¹, [Gabriella Juhasz](#) ^{13 14}

Affiliations Expand

- PMID: 39168988
- PMCID: [PMC11339304](#)
- DOI: [10.1038/s41467-024-51467-7](#)

Abstract

The heterogeneity and complexity of symptom presentation, comorbidities and genetic factors pose challenges to the identification of biological mechanisms underlying complex diseases. Current approaches used to identify biological subtypes of major depressive disorder (MDD) mainly focus on clinical characteristics that cannot be linked to specific biological models. Here, we examined multimorbidities to identify MDD subtypes with distinct genetic and non-genetic factors. We leveraged dynamic Bayesian network approaches to determine a minimal set of multimorbidities relevant to MDD and identified seven clusters of disease-burden trajectories throughout the lifespan among 1.2 million participants from cohorts in the UK, Finland, and Spain. The clusters had clear protective- and risk-factor profiles as well as age-specific clinical courses mainly driven by inflammatory processes, and a comprehensive map of heritability and genetic correlations among these clusters was revealed. Our results can guide the development of personalized treatments for MDD based on the unique genetic, clinical and non-genetic risk-factor profiles of patients.

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Conflict of interest statement

The authors declare no competing interests.

- [77 references](#)
- [5 figures](#)

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Review

Adv Ther

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. 2024 Aug 20.

doi: 10.1007/s12325-024-02957-z. Online ahead of print.

[Early Identification and Management of Chronic Kidney Disease: A Narrative Review of the Crucial Role of Primary Care Practitioners](#)

[Pamela Kushner](#)¹, [Kamlesh Khunti](#)², [Ana Cebrián](#)^{3,4}, [Gary Deed](#)^{5,6}

Affiliations Expand

- PMID: 39162984
- DOI: [10.1007/s12325-024-02957-z](#)

Abstract

Early-stage (stage 1-3) chronic kidney disease (CKD) has an asymptomatic presentation such that most people with CKD are unaware of their disease status and remain undiagnosed. CKD is associated with multiple long-term conditions (MLTC), or multimorbidity, the most common of these being cardiovascular disease, hypertension, and type 2 diabetes. Primary care practitioners (PCPs) are crucial in the early identification and management of patients with CKD. For individuals at high risk of CKD, measurements of estimated glomerular filtration rate, urine albumin-creatinine ratio, and blood pressure should be obtained regularly and recorded in a timely manner. The importance of lifestyle changes in the prevention and management of CKD should also be highlighted. A recent addition to the treatment of CKD in people with and without type 2 diabetes has been the recommendation by clinical practice guidelines of a sodium-glucose co-transporter 2 (SGLT2) inhibitor alongside a renin-angiotensin-aldosterone system inhibitor as foundational therapy. SGLT2 inhibitors prevent CKD progression and reduce fatal and non-fatal kidney and cardiovascular events, hospitalization for heart failure, and all-cause mortality, and they have a favorable safety and tolerability profile. However, uptake has been slow, particularly in people with CKD without type 2

diabetes. A multifaceted approach is required to ensure that people with CKD receive optimal kidney protection. Measures to raise awareness of the importance of early identification and intervention include local/national campaigns via social media and practice-based education; clinical education programs; integration of clinical decision support tools into electronic health records; detection programs built around electronic health records; and good interdisciplinary communication. PCPs at the forefront of multidisciplinary care are best placed to implement the evidence-based clinical practice CKD guidelines for lifestyle modification and guideline-directed medical therapy.

Keywords: Chronic kidney disease; Primary care practitioners; Sodium–glucose co-transporter 2 inhibitors.

Plain language summary

Chronic kidney disease, or CKD, affects about one in ten adults worldwide. Results from many real-world studies show that early identification and treatment of CKD is crucial to prevent the disease from getting worse. However, because CKD can have no symptoms in its early stages, it is often not diagnosed. Many people with CKD are therefore unaware that they have it. People with CKD are likely to have other long-term health issues as well, including cardiovascular disease, hypertension and diabetes. Primary care practitioners are best placed to offer holistic, patient-centered care to those with CKD, and are the frontline in identifying and managing the risk factors for chronic disease. Primary care practitioners may advise people with CKD on lifestyle changes, such as diet and exercise, as well as helping them understand what treatments are available. Sodium–glucose co-transporter 2 inhibitors have shown strong kidney-protective effects in clinical trials, and recently updated clinical guidelines recommend their use as foundational therapy alongside more established treatments of CKD. These treatments should be prescribed to people with CKD whether they have diabetes or not. For people at high risk of CKD, primary care practitioners should regularly obtain and record measurements of kidney function and blood pressure. Public and primary care practitioner awareness and education, the use of clinical decision support tools, and good communication between healthcare professionals are all important to drive change in primary care and improve the early identification and management of CKD.

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- [73 references](#)

Supplementary info

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

1

Acad Emerg Med

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. 2024 Aug 23.

doi: 10.1111/acem.14997. Online ahead of print.

[Trends in dexamethasone treatment for asthma in U.S. emergency departments](#)

[Daniel J Shapiro](#)¹, [Eric R Coon](#)², [Sunitha V Kaiser](#)³, [Jacqueline Grupp-Phelan](#)¹, [Adam L Hersh](#)⁴, [Naomi S Bardach](#)³

Affiliations Expand

- PMID: 39180231
- DOI: [10.1111/acem.14997](#)

No abstract available

- [10 references](#)

Full text links



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Allergy

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. 2024 Aug 22.

doi: 10.1111/all.16286. Online ahead of print.

[Allergen immunotherapy adverse events in adults with respiratory allergies-data from ADER: An EAACI task force report](#)

[Asllani Julijana^{1,2}](#), [Mitsias Dimitrios³](#), [Konstantinou George⁴](#), [Qirko Etleva⁵](#), [Hitaj Mirela⁶](#), [Musollari Sybi⁷](#), [Christoff George⁸](#), [Novakova Silviya⁹](#), [Makris Michael¹⁰](#), [Radulovic Pevec Mira¹¹](#), [Pevec Branko¹¹](#), [Muntean Adriana^{12 13}](#), [Tomic-Spiric Vesna^{14 15}](#), [Stosovic Rajica^{14 15}](#), [Kosnik Mitja¹⁶](#), [Mungan Dilsad¹⁷](#), [Popov A Todor¹⁸](#), [Calderon Moises¹⁹](#), [Papadopoulos G Nikolaos^{3 20}](#); [ADER Study Group](#)

Collaborators, Affiliations Expand

- PMID: 39175252
- DOI: [10.1111/all.16286](#)

Abstract

Background: Registries can yield important insights on allergen immunotherapy (AIT) outcomes in daily clinical practice. However, systematic recordings of adverse events (AE) due to AIT in real-life are lacking.

Methods: The Allergen Immunotherapy Adverse Events Registry (ADER) is a prospective, multicenter registry on real-life AIT safety. Data on adults (>18 years old) with respiratory allergies receiving AIT with mites, pollens, epithelia, and/or molds were retrieved and analyzed from ADER. The frequency, characteristics and risk factors of AE were investigated. The MedDRA terminology was used to record AE.

Results: A total of 1545 individuals with a mean age of 33 ± 10 years receiving 1815 AIT courses (n = 1060 sublingual (SLIT); n = 755 subcutaneous (SCIT)) in centers from eight countries were included. Patients had allergic rhinitis (65%) or, asthma only (3.7%) or rhinitis with asthma (31.2%). Grass was the most frequent specific sensitizer (60.7%), followed by mites (45.5%), birch pollen (20.6%), epithelia (16.1%), and molds (8%). There were 296 AE recorded in 115 patients (7.4%). A higher frequency of AE occurred during up-dosing (59%) compared to maintenance. Severe reactions were rare (0.2%), all in the context of SCIT. After 6 weeks of maintenance only one moderate AE was recorded. The most frequently reported symptoms were from the respiratory system and the skin. Having asthma, doing SCIT, AIT with mugwort, cat, or birch were associated with higher risk for AE while the use of allergoids induced lower risk.

Conclusion: In real life clinical practice, AIT-associated AE occur in a minority of patients, while severe reactions are rare. The presence of asthma and use of SCIT are risk factors, while the use of modified allergens lowers the risk.

Keywords: adverse reactions; allergen immunotherapy; real-world data; risk factors; safety.

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- [33 references](#)

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Editorial

Eur Respir J

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. 2024 Aug 22;64(2):2401168.

doi: 10.1183/13993003.01168-2024. Print 2024 Aug.

[Stepping down biologics in asthma: is it time to challenge the status quo?](#)

[Sandhya Khurana](#)^{1,2}, [Steve N Georas](#)^{3,2}

Affiliations Expand

- PMID: 39174287
- DOI: [10.1183/13993003.01168-2024](#)

No abstract available

Conflict of interest statement

Conflict of interest: S. Khurana has no potential conflicts of interest to disclose. S.N. Georas reports research grants from the NIH and consulting fees from AstraZeneca, ARS Pharma, Chiesi Inc., Amarin Pharma and GH Research.

Comment on

- [Titration of anti-IL-5 biologics in severe asthma: an open-label randomised controlled trial \(the OPTIMAL study\).](#)

Soendergaard MB, Bjerrum AS, Rasmussen LM, Lock-Johansson S, Hilberg O, Hansen S, von Bulow A, Porsbjerg C. Eur Respir J. 2024 Aug 22;64(2):2400404. doi: 10.1183/13993003.00404-2024. Print 2024 Aug. PMID: 38843910 Free PMC article. Clinical Trial.

Supplementary info

Publication types, MeSH terms, Substances Expand

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BMJ Open

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. 2024 Aug 21;14(8):e079338.

doi: 10.1136/bmjopen-2023-079338.

[Multivariate time series approaches to extract predictive asthma biomarkers from prospectively patient-collected diary data: a systematic review](#)

[Franz Aaron Apritado Clemeno](#)¹, [Eleanor Quek](#)², [Matthew Richardson](#)¹, [Salman Siddiqui](#)³

Affiliations Expand

- PMID: 39174060
- PMCID: [PMC11340722](#)
- DOI: [10.1136/bmjopen-2023-079338](#)

Abstract

Objectives: Longitudinal data are common in asthma studies, to assess asthma progression in patients and identify predictors of future outcomes, including asthma exacerbations and asthma control. Different methods can quantify temporal

behaviour in prospective patient-collected diary variables to obtain predictive biomarkers of asthma outcomes. The aims of this systematic review were to evaluate methods for extracting biomarkers from longitudinally collected diary data in asthma and investigate associations between them and patient-reported outcomes (PROs) of patients with asthma.

Design: Systematic review and narrative synthesis.

Data sources: MEDLINE, EMBASE, CINAHL and the Cochrane Library were searched for studies published between January 2000 and July 2023.

Eligibility criteria: Included studies generated biomarkers from prospective patient-collected peak expiratory flow, symptom scores, reliever use and nocturnal awakenings, and evaluated their associations with asthma PROs, namely asthma exacerbations, asthma control, asthma-related quality of life and asthma severity.

Data extraction and synthesis: Two independent reviewers used standardised methods to screen and extract data from included studies. Study quality and risk of bias were assessed using the Transparent Reporting of a multivariable prediction model for Individual Prognosis Or Diagnosis (TRIPOD) and the Prediction model Risk Of Bias Assessment Tool (PROBAST), respectively.

Results: 24 full-text articles met the inclusion criteria and were included in the review. Generally, higher levels of variability in the diary variables were associated with poorer outcomes, especially increased asthma exacerbation risk, and poor asthma control. There was increasing interest in non-parametric methods to quantify complex behaviour of diary variables (6/24). TRIPOD and PROBAST highlighted a lack of consistent reporting of model performance measures and potential for model bias.

Conclusion: Prospectively patient-collected diary variables aid in generating asthma assessment tools, including surrogate endpoints, for clinical trials and predictive biomarkers of adverse outcomes, warranting remote monitoring. Studies consistently lacked robust reporting of model performance. Future research should use diary variable-derived biomarkers.

Keywords: adverse events; asthma; patient reported outcome measures; telemedicine.

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Conflict of interest statement

Competing interests: FAAC, EQ and MR do not report any conflicts of interest. SS reports grants from the UK Medical Research Council and the Engineering and Physical Sciences Research Council, and personal fees from GSK, AstraZeneca, Roche, Novartis, Chiesi, CSL Behring, Areteia Therapeutics and Owlstone Medical, outside of the submitted work.

- [57 references](#)
- [5 figures](#)

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BMJ Open

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. 2024 Aug 21;14(8):e090749.

doi: 10.1136/bmjopen-2024-090749.

[Treating severe paediatric asthma with mepolizumab or omalizumab: a protocol for the TREAT randomised non-inferiority trial](#)

[Victoria Cornelius](#)¹, [Daphne Babalis](#)^{2,3}, [William D Carroll](#)^{4,5}, [Steven Cunningham](#)⁶, [Louise Fleming](#)⁷, [Erol Gaillard](#)^{8,9}, [Atul Gupta](#)¹⁰, [Leila Janani](#)¹¹, [Erika Kennington](#)¹², [Clare Murray](#)¹³, [Prasad Nagakumar](#)^{14,15}, [Graham Roberts](#)^{16,17}, [Paul Seddon](#)¹⁸, [Ian Sinha](#)¹⁹, [Claire Streatfield](#)¹¹, [Elise Weir](#)²⁰, [Sejal Saglani](#)²¹

Affiliations Expand

- PMID: 39174059
- PMCID: [PMC11340717](#)
- DOI: [10.1136/bmjopen-2024-090749](#)

Abstract

Introduction: A minority of school-aged children with asthma have persistent poor control and experience frequent asthma attacks despite maximal prescribed maintenance therapy. These children have higher morbidity and risk of death. The first add-on biologic therapy, omalizumab, a monoclonal antibody that blocks immunoglobulin (Ig)E, was licensed for children with severe asthma in 2005. While omalizumab is an effective treatment, non-response is common. A second biologic, mepolizumab which blocks interleukin 5 and targets eosinophilic inflammation, was

licensed in 2018, but the licence was granted by extrapolation of adult clinical trial data to children. This non-inferiority (NI) trial will determine whether mepolizumab is as efficacious as omalizumab in reducing asthma attacks in children with severe therapy resistant asthma (STRA) and refractory difficult asthma (DA).

Methods and analysis: This is an ongoing multicentre 1:1 randomised NI open-label trial of mepolizumab and omalizumab. Up to 150 children and young people (CYP) aged 6-17 years with severe asthma will be recruited from specialist paediatric severe asthma centres in the UK. Prior to randomisation, children will be monitored for medication adherence for up to 16 weeks to determine STRA and refractory DA diagnoses. Current prescribing recommendations of serum IgE and blood eosinophils will not influence eligibility or enrolment. The primary outcome is the 52-week asthma attack rate. Bayesian analysis using clinician-elicited prior distributions will be used to calculate the posterior probability that mepolizumab is not inferior to omalizumab. Secondary outcomes include Composite Asthma Severity Index, Paediatric Asthma Quality of Life Questionnaire, lung function measures (forced expiratory volume in one second (FEV1), bronchodilator reversibility), fractional exhaled nitric oxide, Asthma Control Test (ACT), health outcomes EuroQol 5 Dimension (EQ-5D) and optimal serum IgE and blood eosinophil levels that may predict a response to therapy. These outcomes will be analysed in a frequentist framework using longitudinal models.

Ethics and dissemination: The study has been approved by the South Central-Berkshire Research Ethics Committee REC Number 19/SC/0634 and had Clinical Trials Authorisation from the Medicines and Healthcare Products Regulatory Agency (MHRA) (EudraCT 2019-004085-17). All parents/legal guardians will give informed consent for their child to participate in the trial, and CYP will give assent to participate. The results will be published in peer-reviewed journals, presented at international conferences and disseminated via our patient and public involvement partners.

Trial registration number: ISRCTN12109108; **EudraCT Number:** 2019-004085-17.

Keywords: Asthma; Clinical trials; Paediatric thoracic medicine; Randomized Controlled Trial; Respiratory Function Test.

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Conflict of interest statement

Competing interests: None declared.

- [24 references](#)
- [1 figure](#)

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6

Am J Respir Cell Mol Biol

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. 2024 Aug 22.

doi: 10.1165/rcmb.2024-0374ED. Online ahead of print.

[Airway Smooth Muscle Dysfunction in Asthma: Releasing the Anchor](#)

[Anthony N Gerber](#)¹

Affiliations Expand

- PMID: 39173148
- DOI: [10.1165/rcmb.2024-0374ED](https://doi.org/10.1165/rcmb.2024-0374ED)

No abstract available

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7

J Asthma

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. 2024 Aug 22:1-12.

doi: 10.1080/02770903.2024.2380510. Online ahead of print.

[Biomarker defined infective and inflammatory asthma exacerbation phenotypes in hospitalized adults: clinical impact and phenotype stability at recurrent exacerbation](#)

[Muzhda Ghanizada](#)¹, [Ajmal Jabarkhil](#)¹, [Susanne Hansen](#)¹, [Christian Woehl](#)¹, [Nanna Dyhre-Petersen](#)¹, [Asger Sverrild](#)¹, [Celeste Porsbjerg](#)¹, [Therese Lapperre](#)^{1,2,3}

Affiliations Expand

- PMID: 39169832
- DOI: [10.1080/02770903.2024.2380510](https://doi.org/10.1080/02770903.2024.2380510)

Abstract

Objective: Acute exacerbations (AEs) of asthma are heterogeneous in terms of triggers, outcomes, and treatment response. This study investigated biomarker defined infective and inflammatory AE phenotypes in hospitalized adult asthma patients, and their impact on clinical outcomes and phenotype stability at AE recurrence.

Method: Patients with asthma admitted with an AE between January 2010 and December 2011 with a 3-year follow-up were retrospectively studied. AEs were categorized into infective (CRP >10 mg/L) vs non-infective, eosinophilic (blood eosinophils $\geq 0.2 \times 10^9$ cells/L) vs non-eosinophilic, and viral (CRP >10 to <40 mg/L) vs bacterial (CRP ≥ 40 mg/L) phenotypes. Clinical impact of the index AE, the risk and time to a second AE and AE phenotype stability were analyzed using Kaplan-Meier survival curves and McNamar's test.

Result: 294 asthma patients were included: 47% had infective AE with a longer length of stay than non-infective AE (2.0 vs. 1.0 days, $p = 0.01$). The proportion of patients with eosinophilic AEs was evenly distributed across infective and non-infective AE (40% vs. 46%), although more patients with viral had eosinophilia than bacterial AE (46% vs. 26%). During follow-up, 18% had recurrent AE; with a higher risk in viral AE than bacterial AE (25% vs. 8%, $p = 0.02$). Both inflammatory and infective AE phenotype were stable at recurrent AE.

Conclusion: AE phenotyping in hospitalized asthma patients, based on CRP and blood eosinophils, revealed prolonged hospital stay in infective AEs and a higher risk of recurrent AE requiring hospitalization in viral versus bacterial AEs. Moreover, infective, and inflammatory AE phenotypes were rather stable at recurrent AE. Our results suggest a role for biomarker guided phenotyping of AEs of asthma.

Keywords: Asthma; bacterial infection; eosinophilic; hospitalization; severe acute exacerbation; viral infection.

Plain language summary

Infective and inflammatory AE phenotypes tend to recur and exhibit stable phenotypes in recurrent AE. Viral infection plays a pivotal role in AE recurrence, both in infective and non-eosinophilic phenotypes.

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8

Clin Exp Allergy

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. 2024 Aug 21.

doi: 10.1111/cea.14554. Online ahead of print.

[Cochrane Corner: Addition of Long-Acting Beta2 Agonists or Long-Acting Muscarinic Antagonists Versus Doubling the Dose of Inhaled Corticosteroids \(ICS\) in Adolescents and Adults With Uncontrolled Asthma With Medium-Dose ICS](#)

[Rachel Baigel](#)¹, [Ian Gregory](#)¹

Affiliations Expand

- PMID: 39168714
- DOI: [10.1111/cea.14554](https://doi.org/10.1111/cea.14554)

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- [8 references](#)

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9

Clin Exp Allergy

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. 2024 Aug 21.

doi: 10.1111/cea.14555. Online ahead of print.

[Effectiveness of Pulmonary Rehabilitation on Severe Asthma Outcomes: A Pre-Post Study](#)

[Émilie Margoline](#)¹, [Emeline Cailliau](#)², [Sarah Gephine](#)^{3,4}, [Stéphanie Fry](#)^{5,6}, [Olivier Le Rouzic](#)⁵, [Jean-Marie Grosbois](#)⁴, [Cécile Chenivresse](#)^{5,6}

Affiliations Expand

- PMID: 39165129
- DOI: [10.1111/cea.14555](https://doi.org/10.1111/cea.14555)

No abstract available

Keywords: Nijmegen; anxiety; asthma control; depression; exacerbations; glucocorticoid sparing; hyperventilation.

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10

Observational Study

J Health Popul Nutr

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. 2024 Aug 20;43(1):128.

doi: 10.1186/s41043-024-00599-z.

[Investigation of non-communicable diseases prevalence, patterns, and patient outcomes in hospitalized populations: a prospective observational study in three tertiary hospitals](#)

[Alemu Belayneh¹](#), [Legese Chelkeba^{2,3}](#), [Firehiwot Amare¹](#), [Henok Fisseha⁴](#), [Senbeta Guteta Abdissa⁵](#), [Mirgissa Kaba⁶](#), [Shivani A Patel⁷](#), [Mohammed K Ali⁷](#)

Affiliations Expand

- PMID: 39164738
- PMCID: [PMC11337899](#)
- DOI: [10.1186/s41043-024-00599-z](#)

Abstract

Background: Non-communicable diseases (NCDs) pose a significant global health challenge, constituting over 80% of mortality and morbidity. This burden is particularly pronounced in low- and middle-income countries (LMICs), including Ethiopia. Despite this, there's limited research on this issue in Africa. This study aims to investigate the prevalence, patterns, and outcomes of NCDs in hospitalized populations across three tertiary hospitals in Ethiopia.

Methods: A hospital-based cohort study (August 2022 - January 2023) included patients aged 14 and older diagnosed with cardiovascular diseases (CVDs), diabetes mellitus (DM), chronic obstructive pulmonary disease (COPD), asthma, or cancer at three Ethiopian hospitals. Data on demographics, socio-economic factors, clinical characteristics, and outcomes were collected through medical records and interviews. Logistic regression identified factors independently associated with in-hospital mortality, with $p \leq 0.05$ considered statistically significant.

Results: In the study across three tertiary hospitals involving 2,237 patients, we uncovered the impact of NCDs. About 23.4% of patients struggled with NCDs, with cardiovascular diseases (53.3%), cancer (29.6%), diabetes (6.1%), and respiratory diseases (6.5%) being the most prevalent. Notably, among those affected, women comprised a slight majority (55.1%), with the average patient age being 47.2 years. Unfortunately, 15.3% of patients with NCDs faced in-hospital mortality. Our analysis revealed predictors of mortality, including cancer diagnosis (adjusted odds ratio [AOR]:1.6, 95% CI: 1.2-1.8, $p = 0.01$), medication adherence (AOR: 0.36, 95% CI: 0.21-0.64, $p < 0.001$), concurrent infections (AOR: 0.36, 95% CI: 0.16-0.86, $p < 0.001$),

chronic kidney diseases (CKD) (AOR: 0.35, 95% CI: 0.14-0.85, $p = 0.02$), and complications during hospitalization (AOR: 6.36, 95% CI: 3.45-11.71, $p < 0.001$).

Conclusion: Our study reveals a substantial prevalence of NCDs among hospitalized patients, affecting approximately one in four individuals, primarily with CVDs and cancer. Alarming, a significant proportion of these patients did not survive their hospitalization, emphasizing the urgent need for targeted interventions to enhance outcomes in this population.

Keywords: Clinical outcomes; Hospital admissions; Non-communicable diseases; Socio-economic disparities.

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Conflict of interest statement

The authors declare no competing interests.

- [37 references](#)
- [7 figures](#)

Supplementary info

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11

BMC Pulm Med

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. 2024 Aug 20;24(1):399.

doi: 10.1186/s12890-024-03211-6.

[Elevated inflammatory burden index increases mortality in adults with chronic inflammatory airway diseases: a nationwide cohort study](#)

[Ning Zhu](#) ^{#1}, [Shanhong Lin](#) ^{#2}, [Linfeng Wang](#) ¹, [Xue Kong](#) ¹, [Weina Huang](#) ³, [Chao Cao](#) ⁴

Affiliations Expand

- PMID: 39164650
- PMCID: [PMC11337749](#)
- DOI: [10.1186/s12890-024-03211-6](#)

Abstract

Objective: The objective of this study was to investigate the potential association between the inflammatory burden index (IBI) and the prevalence of chronic inflammatory airway diseases (CIAD), as well as mortality rates among individuals diagnosed with CIAD.

Methods: Participants were sourced from the National Health and Nutrition Examination Survey (NHANES) conducted between 1999 and 2010. The IBI was calculated using the formula: $IBI = C\text{-reactive protein} * \text{neutrophils} / \text{lymphocytes}$. CIAD comprised self-reported asthma, chronic bronchitis, and chronic obstructive pulmonary disease (COPD). Mortality outcomes, including all-cause and respiratory disease mortality, were determined through linked data from the National Death Index (NDI) up to December 2019.

Results: A total of 27,495 adults were included. IBI was divided into quartiles, with the lowest quartile as the reference group. After adjusting for confounding variables, a positive correlation was observed between higher IBI and increased prevalence of total CIAD (OR = 1.383 [1.215-1.575]), asthma (OR = 1.267 [1.096-1.465]), chronic bronchitis (OR = 1.568 [1.263-1.946]), and COPD (OR = 1.907 [1.311-2.774]). Over a median follow-up of 12.33 [9.92-16.00] years, there were 1221 deaths from all causes and 220 deaths from respiratory disease among 4499 patients with CIAD. Following multivariate adjustments, the fourth quartile was significantly associated with increased risk of all-cause mortality (HR = 2.227 [1.714-2.893]) and respiratory disease mortality (HR = 2.748 [1.383-5.459]) compared to the first quartile of IBI in CIAD participants. Moreover, variable importance analysis using a random survival forest model demonstrated the significance of IBI in predicting mortality from both all-cause and respiratory diseases.

Conclusion: IBI exhibited an association with the prevalence of CIAD, with higher IBI levels correlating with elevated all-cause and respiratory disease mortality among individuals with CIAD.

Keywords: Asthma; CIAD; COPD; Chronic bronchitis; IBI; Mortality; NHANES.

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Conflict of interest statement

The authors declare no competing interests.

- [44 references](#)
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J Asthma

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. 2024 Aug 23:1-11.

doi: 10.1080/02770903.2024.2391446. Online ahead of print.

[Trends in polypharmacy among U.S. adults with asthma, 2001-2020](#)

[Chun-Tse Hung](#)¹, [Ding-Cheng Liu](#)², [Kuan-Ting Chou](#)¹, [Yu-Hsiu Kao](#)³

Affiliations Expand

- PMID: 39120956
- DOI: [10.1080/02770903.2024.2391446](https://doi.org/10.1080/02770903.2024.2391446)

Abstract

Objective: This study aimed to evaluate trends in polypharmacy prevalence among adults with asthma in the United States.

Methods: Data from the 2001-2020 National Health and Nutrition Examination Survey were used to estimate the weighted prevalence of polypharmacy. Joinpoint regression analysis was conducted to evaluate trends in polypharmacy. Trends were first evaluated overall and then stratified by asthma severity and asthma control. A multivariable logistic regression model was used to identify factors associated with polypharmacy.

Results: From 2001 to 2020, a stable trend in polypharmacy among U.S. adults with asthma was observed (average annual percent change [AAPC]=1.02, $p=0.71$). Trends across different asthma severity were stable (mild asthma:

AAPC=2.93, $p=0.20$; moderate asthma: AAPC=-2.22, $p=0.35$; severe asthma: AAPC=0.45, $p=0.82$). Trends in adults with good asthma control and those with poor control stayed constant (good control: AAPC=0.82, $p=0.68$; poor control: AAPC=-1.22, $p=0.82$). Several factors, including older age, females, Non-Hispanic Black, health insurance coverage, family income, number of healthcare visits, former smokers, multi-morbidities, asthma severity, and asthma control, were associated with polypharmacy.

Conclusions: Polypharmacy prevalence has remained constant among U.S. adults with asthma over the past two decades. Despite a stable overall trend, disparities in polypharmacy prevalence persist across different asthma severity and control status, underscoring the need for tailored medication management to improve asthma care.

Keywords: Asthma; National Health and Nutrition Examination Survey; joinpoint regression analysis; pharmacoepidemiology; polypharmacy; prescribing; trend.

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13

Expert Rev Respir Med

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. 2024 Aug 20:1-7.

doi: 10.1080/17476348.2024.2390987. Online ahead of print.

[Imagining the severe asthma decision trees of the future](#)

[Arnaud Bourdin](#)¹, [Phil Bardin](#)², [Pascal Chanez](#)^{3,4}

Affiliations Expand

- PMID: 39120156
- DOI: [10.1080/17476348.2024.2390987](https://doi.org/10.1080/17476348.2024.2390987)

Abstract

Introduction: There are no validated decision-making algorithms concerning severe asthma (SA) management. Future risks are crucial factors and can be derived from SA trajectories.

Areas covered: The future severe asthma-decision trees should revisit current knowledge and gaps. A focused literature search has been conducted.

Expert opinion: Asthma severity is currently defined *a priori*, thereby precluding a role for early interventions aiming to prevent outcomes such as exacerbations (systemic corticosteroids exposure) and lung function decline. Asthma 'at-risk' might represent the ultimate paradigm but merits longitudinal studies considering modern interventions. Real exacerbations, severe airway hyperresponsiveness, excessive T2-related biomarkers, noxious environments and patient behaviors, harms of OCS and high-doses inhaled corticosteroids (ICS), and low adherence-to-effectiveness ratios of ICS-containing inhalers are predictors of future risks. New tools such as imaging, genetic, and epigenetic signatures should be used. Logical and numerical artificial intelligence may be used to generate a consistent risk score. A pragmatic definition of response to treatments will allow development of a validated and applicable algorithm. Biologics have the best potential to minimize the risks, but cost remains an issue. We propose a simplified six-step algorithm for decision-making that is ultimately aiming to achieve asthma remission.

Keywords: Severe asthma; biomarkers; decision tree; imaging; prediction.

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14

Randomized Controlled Trial

Eur Respir J

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. 2024 Aug 22;64(2):2400404.

doi: 10.1183/13993003.00404-2024. Print 2024 Aug.

[Titration of anti-IL-5 biologics in severe asthma: an open-label randomised controlled trial \(the OPTIMAL study\)](#)

[Marianne Baastrup Soendergaard](#)¹, [Anne-Sofie Bjerrum](#)², [Linda Makowska Rasmussen](#)³, [Sofie Lock-Johansson](#)⁴, [Ole Hilberg](#)⁵, [Susanne Hansen](#)^{6,7}, [Anna von Bulow](#)⁶, [Celeste Porsbjerg](#)⁶

Affiliations Expand

- PMID: 38843910
- PMCID: [PMC11339407](#)
- DOI: [10.1183/13993003.00404-2024](#)

Abstract

Background: Anti-interleukin (IL)-5 biologics effectively reduce exacerbations and the need for maintenance oral corticosteroids (mOCS) in severe eosinophilic asthma. However, it is unknown how long anti-IL-5 treatment should be continued. Data from clinical trials indicate a gradual but variable loss of control after treatment cessation. In this pilot study of titration, we evaluated a dose-titration algorithm in patients who had achieved clinical control on an anti-IL-5 biologic.

Methods: In this open-label randomised controlled trial conducted over 52 weeks, patients with clinical control (no exacerbations or mOCS) on anti-IL-5 treatment were randomised to continue with unchanged intervals or have dosing intervals adjusted according to a titration algorithm that gradually extended dosing intervals and reduced them again at signs of loss of disease control. The OPTIMAL algorithm was designed to down-titrate dosing until signs of loss of control, to enable assessment of the longest dosing interval possible.

Results: Among 73 patients enrolled, 37 patients were randomised to the OPTIMAL titration arm; 78% of patients tolerated down-titration of treatment. Compared to the control arm, the OPTIMAL arm tended to have more exacerbations during the study (32% *versus* 17%; $p=0.13$). There were no severe adverse events related to titration, and lung function and symptoms scores remained stable and comparable in both study arms throughout.

Conclusion: This study serves as a proof of concept for titration of anti-IL-5 biologics in patients with severe asthma with clinical control on treatment, and the OPTIMAL algorithm provides a potential framework for individualising dosing intervals in the future.

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Conflict of interest statement

Conflict of interest: M.B. Soendergaard reports payment or honoraria for lectures, presentations, manuscript writing or educational events from GSK and AstraZeneca, and participation on a data safety monitoring board or advisory board with AstraZeneca. A-S. Bjerrum reports payment or honoraria for lectures, presentations, manuscript writing or educational events from GSK and AstraZeneca. L.M. Rasmussen reports payment or honoraria for lectures,

presentations, manuscript writing or educational events from AstraZeneca, GSK, Teva and ALK, support for attending meetings from AstraZeneca and Chiesi, and participation on a data safety monitoring board or advisory board with AstraZeneca, GSK, Teva and Sanofi. A. von Bulow reports consultancy fees from Novartis, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Novartis and GSK, and participation on a data safety monitoring board or advisory board with AstraZeneca and Novartis. C. Porsbjerg reports grants paid to their institution from AstraZeneca, GSK, Novartis, Teva, Sanofi, Chiesi and ALK, consultancy fees (paid both to institution and as personal honoraria) from AstraZeneca, GSK, Novartis, Teva, Sanofi, Chiesi and ALK, payment or honoraria for lectures, presentations, manuscript writing or educational events (paid both to institution and as personal honoraria) from AstraZeneca, GSK, Novartis, Teva, Sanofi, Chiesi and ALK, and participation on a data safety monitoring board or advisory board (fees paid both to institution and as personal honoraria) with AstraZeneca, Novartis, Teva, Sanofi and ALK. The remaining authors have no potential conflicts of interest to disclose.

Comment in

- [Stepping down biologics in asthma: is it time to challenge the status quo?](#)

Khurana S, Georas SN. *Eur Respir J*. 2024 Aug 22;64(2):2401168. doi: 10.1183/13993003.01168-2024. Print 2024 Aug. PMID: 39174287 No abstract available.

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- [5 figures](#)

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. 2024 Aug 22;31(5):480-482.

doi: 10.1136/ejhpharm-2022-003611.

[Optimisation of the quality of care for patients with severe asthma: ASfarMA project](#)

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Affiliations Expand

- PMID: 36737227
- DOI: [10.1136/ejhpharm-2022-003611](#)

Abstract

Severe asthma has an important impact on patients and healthcare resources. Recently, the new specific treatments have defined a new scenario in which person-focused care and specialist multidisciplinary teams are necessary. Our Severe Asthma Unit (SAU) started the ASfarMA project along with an external human-centered design company to understand patients' vision of their illness, treatment, and healthcare experience, and to define the ideal SAU by performing a core group session, in-depth semistructured interviews and co-creation workshop. Herein, a series of tips classified as either 'transformative solutions' or 'quick wins', according to a value versus effort matrix are presented. Successful implementation of the proposed solutions will be valuable for patients and healthcare professionals, optimising patient care and resources. These findings can also be helpful to other SAUs or other humanisation projects involving complex, chronic and multidisciplinary pathologies.

Keywords: Education, Pharmacy, Continuing; Equipment Design; PHARMACY SERVICE, HOSPITAL; PULMONARY MEDICINE; Quality of Health Care; TOTAL QUALITY MANAGEMENT.

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Conflict of interest statement

Competing interests: MMG declares payment or honoraria for lectures, presentations, speakers, bureaus, manuscript writing for educational events by AstraZeneca and GSK and payment for expert testimony by AstraZeneca. AS-G declares payment or honoraria for lectures, presentations, speakers, bureaus, manuscript writing for educational events by GSK and Sanofi, payment for expert testimony by GSK and Sanofi and support for attending meetings and/or travel by Sanofi. DA-A declares payment or honoraria for lectures, presentations, speakers, bureaus, manuscript writing for educational events by AstraZeneca, GSK, Novartis and Sanofi and payment for expert testimony by AstraZeneca, GSK and Sanofi. Other authors have no conflict of interest to declare.

Supplementary info

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

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Eur Arch Otorhinolaryngol

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. 2024 Aug 24.

doi: 10.1007/s00405-024-08893-6. Online ahead of print.

[Asthma as a risk factor and allergic rhinitis as a protective factor for COVID-19 severity: a case-control study](#)

[Martha Débora Lira Tenório^{1,2}](#), [Gabriel Valentim Dos Santos Menezes Siqueira³](#), [Gustavo Costa Caldas³](#), [Roque Pacheco de Almeida^{1,3}](#), [Amélia Ribeiro de Jesus^{1,3}](#), [Paulo Ricardo Martins-Filho^{4,5,6}](#)

Affiliations Expand

- PMID: 39180537
- DOI: [10.1007/s00405-024-08893-6](https://doi.org/10.1007/s00405-024-08893-6)

Abstract

Purpose: The COVID-19 pandemic has resulted in significant global morbidity and mortality. The disease presents a broad clinical spectrum, significantly influenced by underlying comorbidities. While certain conditions are known to exacerbate COVID-19 outcomes, the role of chronic inflammatory airway diseases such as asthma and rhinitis in influencing disease severity remains controversial. This study investigates the association between asthma and allergic rhinitis and the severity of COVID-19 outcomes in a specific geographical region prior to widespread vaccine deployment.

Methods: We conducted a case-control study with unvaccinated adult patients who had laboratory-confirmed COVID-19 by polymerase chain reaction (PCR). Cases were defined as severe or critical COVID-19 patients requiring intensive care unit (ICU) admission, and controls were non-severe patients without signs of viral pneumonia or hypoxia. We utilized the International Study of Asthma and Allergies

in Childhood (ISAAC) questionnaire to assess the presence of asthma and allergic rhinitis. The association between these chronic inflammatory airway diseases and the severity of COVID-19 was evaluated using multivariate logistic regression analysis.

Results: A total of 122 patients were analyzed, with 61 in each group. The presence of asthma (9 patients) was associated with an increased likelihood of severe COVID-19 (OR = 13.0; 95% CI 1.27-133.74), while rhinitis (39 patients) was associated with a protective effect against severe outcomes (OR = 0.36; 95% CI 0.13-0.99). No significant association was found between the frequency of asthmatic episodes or the severity of rhinitis and the severity of COVID-19 outcomes.

Conclusion: This study underscores the divergent effects of chronic inflammatory airway diseases on COVID-19 severity, with asthma associated with a higher likelihood of severe outcomes and rhinitis potentially offering protective effects. These findings enhance our understanding of the complex interactions between respiratory allergies and COVID-19, emphasizing the importance of targeted clinical management and public health strategies.

Keywords: Asthma; COVID-19; Rhinitis; SARS-CoV-2.

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J Health Psychol

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. 2024 Aug 22:13591053241272150.

doi: 10.1177/13591053241272150. Online ahead of print.

[Self-management and information needs of adults with seasonal allergic rhinitis in the Netherlands: A focus group study](#)

[Bob C Mulder](#)¹, [Marise J Kasteleyn](#)², [Lisbeth Hall](#)³, [Arnold Jh van Vliet](#)¹, [Letty A de Weger](#)²

Affiliations Expand

- PMID: 39171749
- DOI: [10.1177/13591053241272150](https://doi.org/10.1177/13591053241272150)

Free article

Abstract

This focus group study explored the needs, preferences and beliefs of adults with seasonal allergic rhinitis regarding their self-management practices, and related information use and needs. Four focus groups were held, two online and two on location. The 20 participants (11 women); $M_{age} = 39.0$ years (range: 21-56 years) were reluctant to identify themselves as patients, trivializing their complaints while avoiding being confronted too much with their condition. Participants often expressed low trust in the effectiveness of medication and the ability of healthcare to alleviate their complaints. This resulted in relatively low openness to information such as personalized pollen predictions. Findings were synthesized under three interrelated themes: 'Being ill, but not a patient: it's bad, but you learn to live with it', 'Individual search for what does or doesn't work' and 'Information needs and sources'. Implications for communication supportive of self-management practices for seasonal allergic rhinitis are discussed.

Keywords: focus groups; information needs; seasonal allergic rhinitis; self-management.

Conflict of interest statement

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

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Allergy

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. 2024 Aug 21.

doi: 10.1111/all.16265. Online ahead of print.

Evaluation of dupilumab on the disease burden in children and adolescents with atopic dermatitis: A population-based cohort study

Serena Yun-Chen Tsai¹, Jonathan M Gaffin², Elena B Hawryluk¹, Hana B Ruran^{3,4}, Lisa M Bartnikas^{4,5}, Michiko K Oyoshi^{5,6}, Lynda C Schneider^{4,5}, Wanda Phipatanakul^{4,5}, Kevin Sheng-Kai Ma^{1,7}

Affiliations Expand

- PMID: 39166365
- DOI: [10.1111/all.16265](https://doi.org/10.1111/all.16265)

Abstract

Background: Dupilumab is the first and only biologic agent approved for the treatment of atopic dermatitis (AD) in pediatric patients aged from 6 months to 17 years. The study aimed to evaluate the impact of dupilumab on the occurrence of comorbidities in pediatric patients with AD.

Methods: In this population-based cohort study, we utilized electronic health records from multiple healthcare organizations across the United States. Pediatric patients (<18 years of age) with a diagnosis of AD initiating dupilumab were propensity-score matched 1:1 to those initiating other systemic agents (azathioprine, cyclosporine, methotrexate, mycophenolate mofetil, or systemic corticosteroids). The primary outcomes were new-onset comorbidities emerging during the study period measured by the risk ratio (RR) and its confidence interval (CI). Subgroup analyses were stratified by age (0-5 years, 6-11 years, and 12-17 years), sex, and race.

Results: A total of 3575 pediatric patients with AD treated with dupilumab were matched to 3575 patients treated with other systemic agents. The dupilumab cohort was associated with a lowered risk of new-onset atopic comorbidities (including asthma [RR, 0.72; 95% CI, 0.59-0.89] and allergic rhinitis [RR, 0.62; 95% CI, 0.52-0.74]), infections (e.g., skin and soft tissue infection [RR, 0.70; 95% CI, 0.63-0.76] and respiratory tract infection [RR = 0.56; 95% CI, 0.51-0.61]), psychiatric disorders (e.g., mood disorder [RR, 0.52; 95% CI, 0.39-0.70] and anxiety [RR, 0.57; 95% CI, 0.46-0.70], sleep disturbance [RR, 0.60; 95% CI, 0.47-0.77]), neurologic and developmental disorders (e.g., attention deficit hyperactivity disorder [RR, 0.54; 95% CI, 0.38-0.75]). Furthermore, the positive effects are found to be more pronounced in younger children (aged 0-5 years) with AD.

Conclusions: Treatment with dupilumab compared to systemic agents resulted in reductions in AD-related comorbidities in pediatric patients.

Keywords: adolescents; atopic dermatitis; atopic march; biologics; children; comorbidities; dupilumab; infections; mental health; neurodevelopmental disorders.

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Sci Total Environ

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. 2024 Aug 25:940:173526.

doi: 10.1016/j.scitotenv.2024.173526. Epub 2024 May 31.

[Air pollution, genetic factors, and chronic rhinosinusitis: A prospective study in the UK Biobank](#)

[Qinfeng Zhou](#)¹, [Junxiong Ma](#)¹, [Shyam Biswal](#)², [Nicholas R Rowan](#)³, [Nyall R London](#)³, [Charles A Riley](#)⁴, [Stella E Lee](#)⁵, [Jayant M Pinto](#)⁶, [Omar G Ahmed](#)⁷, [Mintao Su](#)¹, [Zhisheng Liang](#)¹, [Runming Du](#)¹, [Murugappan Ramanathan Jr](#)⁸, [Zhenyu Zhang](#)⁹

Affiliations Expand

- PMID: 38825199
- DOI: [10.1016/j.scitotenv.2024.173526](https://doi.org/10.1016/j.scitotenv.2024.173526)

Abstract

Background: Chronic rhinosinusitis (CRS) is a prevalent upper respiratory condition that manifests in two primary subtypes: CRS with nasal polyps (CRSwNP) and CRS without nasal polyps (CRSsNP). While previous studies indicate a correlation between air pollution and CRS, the role of genetic predisposition in this relationship remains largely unexplored. We hypothesized that higher air pollution exposure

would lead to the development of CRS, and that genetic susceptibility might modify this association.

Methods: This cohort study involving 367,298 adult participants from the UK Biobank, followed from March 2006 to October 2021. Air pollution metrics were estimated at residential locations using land-use regression models. Cox proportional hazard models were employed to explore the associations between air pollution exposure and CRS, CRSwNP, and CRSsNP. A polygenic risk score (PRS) was constructed to evaluate the joint effect of air pollution and genetic predisposition on the development of CRS.

Results: We found that the risk of CRS increased under long-term exposure to PM_{2.5} [the hazard ratios (HRs) with 95 % CIs: 1.59 (1.26-2.01)], PM₁₀ [1.64 (1.26-2.12)], NO₂ [1.11 (1.04-1.17)], and NO_x [1.18 (1.12-1.25)], respectively. These effects were more pronounced among participants with CRSwNP, although the differences were not statistically significant. Additionally, we found that the risks for CRS and CRSwNP increased in a graded manner among participants with higher PRS or higher exposure to PM_{2.5}, PM₁₀, or NO_x concentrations. However, no multiplicative or additive interactions were observed.

Conclusions: Long-term exposure to air pollution increases the risk of CRS, particularly CRSwNP underscoring the need to prioritize clean air initiatives and environmental regulations.

Keywords: Air pollution; Chronic rhinosinusitis; Cohort study; Genetic predisposition; Nasal polyps.

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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

MeSH terms, SubstancesExpand

Full text links



chronic cough

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Respir Med

. 2024 Aug 22:107781. doi: 10.1016/j.rmed.2024.107781. Online ahead of print.

INVESTIGATION OF PEPSIN LEVELS IN BRONCHIAL LAVAGE IN PATIENTS WITH INTERSTITIAL LUNG DISEASE AND CHRONIC COUGH

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Affiliations Expand

PMID: 39182853 DOI: 10.1016/j.rmed.2024.107781

Abstract

Aim: Pepsin is an enzyme that helps digest protein secreted only from the gastric chief cell in an inactive state. Pepsin is a good marker for acidic gastroesophageal reflux (GER). Its presence in sputum or saliva is considered pathologic. In GER, cough is stimulated by broncho-esophageal neurogenic reflex and aspiration of gastric contents into the airways. GER is the most common cause of cough. Gastric acid reflux is also thought to play a role in Interstitial Lung Disease (ILD) etiology. In many studies, pepsin and bile acid levels in bronchial lavage were high in patients with interstitial lung disease and chronic cough. In our study, we aimed to evaluate pepsin levels in bronchial lavage in patients with ILD and chronic cough and to investigate the relationship between symptoms and reflux treatment.

Methods: Between January 2021 and February 2022, 212 patients who underwent bronchoscopy in our tertiary clinic were evaluated. These patients were divided into three groups: 52 patients with interstitial lung disease, 81 patients with chronic cough, and 79 patients who underwent bronchoscopy with a pre-diagnosis of lung cancer as the control group. Bronchial lavage obtained by bronchoscopy was analyzed for pepsin levels.

Results: Shortness of breath and cough were the most common symptoms in all three groups. Pepsin levels were 16.71 ± 8.6 ng/ml in the chronic cough group, 15.6 ± 8.9 ng/ml in the ILD group, and 10.58 ± 5.4 ng/ml in the lung cancer (control) group. Pepsin levels in the ILD and chronic cough group were statistically significantly higher than in the lung cancer group ($p:0.00$). There was no statistical difference between the ILD group and the chronic cough group regarding pepsin levels. It was found that pepsin levels were lower in the three groups who received anti-reflux treatment. There was no difference in pepsin levels between ILD subgroups.

Conclusion: Pepsin levels in bronchial lavage were higher in the ILD and chronic cough groups. This suggests that reflux may be involved in the etiology of chronic cough and ILD. Low pepsin values in patients receiving anti-reflux therapy have shown that occult reflux may occur. In our study, the high level of pepsin in bronchial lavage, especially in the chronic cough and ILD group, may be instructive in the etiology and treatment planning of the disease.

Keywords: Bronchial lavage; Chronic cough; Interstitial lung disease; Lung cancer; Pepsin.

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Conflict of interest statement

Declaration of Competing Interest: None

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Respir Investig

. 2024 Aug 24;62(6):942-950. doi: 10.1016/j.resinv.2024.08.007. Online ahead of print.

Multidisciplinary team discussion based on etiological treatment improves refractory chronic cough outcomes

Yicong Lu 1, Wanting Huang 2, Danruo Fang 1, Huijie Wang 3, Jiangying Guo 1, Na Li 1, Xuefen Wang 4, Miaoyan Chen 5, Jia Chen 6, Huaqiong Huang 7

Affiliations Expand

PMID: 39182399 DOI: 10.1016/j.resinv.2024.08.007

Abstract

Background: Refractory chronic cough (RCC) causes significant impairments in the life quality of patients. Further research into the identification of etiologies and development of the treatment schedules for RCC is needed.

Patients and methods: We established an multidisciplinary team (MDT) clinic, by integrating respiratory medicine, otorhinolaryngology, and gastroenterology departments, to investigate cough etiologies and the effectiveness of treatment. The therapeutic effect was assessed quantitatively using the Cough Visual Analog Scales (VAS), Leicester Cough Questionnaire (LCQ), and Reflux Symptoms Index (RSI) scores.

Results: In total, 213 patients attending the MDT outpatient clinic were examined, and 115 patients with RCC were included for analysis. The RCC diagnosis rate among the outpatient was 88.7%. Common causes of RCC included gastroesophageal reflux cough (63.5%), upper airway cough syndrome (UACS) (43.5%), and cough variant asthma (CVA) (14.8%). After an average treatment period of 2.17 ± 1.06 weeks (wk), 73.9% of the patients had partial cough remission, and

6.1% had complete cough remission. The cough VAS score before and after treatment was 6.11 ± 2.02 vs. 3.66 ± 2.22 ($P < 0.05$), respectively; LCQ total score before and after treatment was 10.24 ± 3.11 vs. 13.16 ± 3.59 ($P < 0.05$), respectively; and RSI score before and after treatment was 15.82 ± 7.01 vs. 10.71 ± 6.64 ($P < 0.05$), respectively.

Conclusion: The etiologies of most patients with RCC could be identified in the MDT clinic, and the cough-related symptoms of a significant number of patients with RCC improved in a short period.

Keywords: Cough variant asthma; Gastroesophageal reflux disease; MDT clinic; Refractory chronic cough; Upper airway cough syndrome.

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Conflict of interest statement

Declaration of competing interest The authors have no conflicts of interest.

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BMC Pediatr

. 2024 Aug 22;24(1):538. doi: 10.1186/s12887-024-04975-w.

24 h combined esophageal multichannel intraluminal impedance and pH monitoring in children with chronic cough

Yi Gan 1, Xiaoqin Zhou 1, Zhaoxuan Huang 1, Shan Gao 1, Guirong Wang 1, Li Gu 1, Di Zhang 1, Lingzhi Yan 1, Shanshan Shang 1, Junhua Shu 2, Danna Tu 3

Affiliations Expand

PMID: 39174910 PMCID: PMC11340197 DOI: 10.1186/s12887-024-04975-w

Abstract

Background: Chronic cough in children is closely related to gastroesophageal reflux (GER). However, this association has not been adequately studied due to a lack of diagnostic tools. Combined esophageal multichannel intraluminal

impedance and pH (MII-pH) monitoring is considered the most accurate method for evaluating the association between symptoms and reflux, but data on its use in children with chronic cough are still lacking. We aimed to assess the association between chronic cough and GER in children through MII-pH monitoring.

Methods: Children with chronic cough (> 4 weeks) who were suspected gastroesophageal reflux disease (GERD) were selected to undergo 24 h MII-pH monitoring at our hospital. Patients were divided into groups according to their age, body position, reflux index (RI) or total reflux events, and the differences between the groups were analyzed. Then the significance and value of 24 h pH and impedance monitoring in chronic cough and the relationship between chronic cough and reflux were discussed.

Results: Overall, 426 patients were included. The median age was 12 months (interquartile range: 6-39.5 months), 129 (30.3%) patients had RI > 7% detected by pH-metry, and 290 (68.1%) patients had positive diagnosis based on the impedance data. GER predominantly occurred in the upright position and mostly involved weakly acidic reflux and mixed gas-liquid reflux. There were 14.1% of children in non-acid GER group were SAP positive showing no difference in acid GER group 13.2% ($P = 0.88$), whereas patients with SAP > 95% in MII positive group (47[16.2%]) is higher than in MII negative group ($P < 0.05$).

Conclusion: Twenty four hour MII-pH monitoring is safe, well tolerated in children, but also has a higher detection rate of gastroesophageal reflux. It can find identify weakly acidic reflux, weakly alkaline reflux and reflux events with different physical properties, which can explain the relationship between GER and chronic cough more comprehensively. It provides new approach for exploring the etiology, diagnosis and treatment of children with chronic cough.

Keywords: Children; Chronic cough; Gastroesophageal reflux; Pediatrics.

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Conflict of interest statement

The authors declare no competing interests.

41 references

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Case Reports J Med Case Rep

. 2024 Aug 20;18(1):382. doi: 10.1186/s13256-024-04696-9.

Bronchiectasis combined with chronic sinusitis following Celiac disease: a case report

Ali Ghassa 1

Affiliations Expand

PMID: 39160616 PMCID: PMC11334302 DOI: 10.1186/s13256-024-04696-9

Abstract

Introduction: Celiac disease is a disease triggered by a protein called gluten. Celiac disease has intestinal and extraintestinal manifestations. Bronchiectasis is a permanent dilation of the bronchi that causes symptoms, such as cough producing a large amount of sputum, recurrent respiratory infections, and breathlessness. In addition, bronchiectasis can present in 60% of cases with chronic rhinosinusitis.

Case presentation: A 40-year-old Arab woman presented with a worsening old cough with an increased amount of sputum; the patient was diagnosed with Celiac disease 7 months prior. Investigations started with laboratory tests followed by a computed tomography scan for the head and chest, bronchoscopy, bronchoalveolar lavage, and spirometry; the final diagnosis was bronchiectasis with chronic rhinosinusitis. She was advised to commit to the gluten-free diet, in addition to the medications prescribed for her bronchiectasis and chronic rhinosinusitis.

Conclusion: Celiac disease and bronchiectasis might share an immunologic disturbance that caused both entities, so Celiac disease should be kept in mind as an etiology for pulmonary diseases.

Keywords: Bronchiectasis; Celiac disease; Chronic sinusitis.

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Conflict of interest statement

The author declares that there is no conflict of interest to be reported.

13 references 2 figures

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

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. 2024 Aug 23:22.

doi: 10.18332/tid/191782. eCollection 2024.

[Effectiveness of immediate appointment scheduling in smoking cessation clinics for patients with chronic airway diseases: Preliminary results from a randomized trial](#)

[Dilek Karadoğan](#)¹, [Tahsin Gökhan Telatar](#)², [İlknur Kaya](#)³, [Siahmet Atlı](#)⁴, [Neslihan Köse Kabil](#)⁵, [Feride Marım](#)³, [Merve Yumrukuz Şenel](#)⁶, [Aycan Yüksel](#)⁷, [Burcu Yalçın](#)⁸, [Ökkeş Gültekin](#)⁹, [Merve Erçelik](#)¹⁰, [Metin Akgün](#)¹¹

Affiliations Expand

- PMID: 39184066
- PMCID: [PMC11342682](#)

- DOI: [10.18332/tid/191782](https://doi.org/10.18332/tid/191782)

Abstract

Introduction: Patients with airway diseases who bear the burden of smoking need access to smoking cessation support. We aimed to investigate the impact of immediately scheduled appointments on access to smoking cessation clinics compared with usual care in this patient group.

Methods: This multicenter, prospective, randomized, open-label study was conducted between November 2022 and June 2023 at pulmonary outpatient clinics. The study included adult patients who were current smokers and had a diagnosis of asthma, COPD, or bronchiectasis for at least six months. Sequentially randomization was used for the allocation of patients in a 1:1 ratio to two study arms: the usual support arm (representing the current standard care procedure) and the immediate support arm (involving intensive brief cessation advice followed by the immediate arrangement of an appointment at the same clinic's smoking cessation service). After one week, both patient groups were contacted by phone to assess their quit attempts and whether they had sought assistance from smoking cessation outpatient clinics (SCCs).

Results: A total of 397 patients were enrolled in the study, with 199 allocated to the usual support arm and 198 allocated to the immediate support arm. Within the first week, 18.1% of patients in the usual support arm and 77.3% of patients in the immediate support arm sought assistance from the smoking cessation clinic ($p < 0.001$). The rate of smokers without an intention to quit was 56.7% in the usual support arm and 27.7% in the immediate support arm in the first week of follow-up. Immediate appointment scheduling was significantly associated with a 13-fold ($OR = 13.38$; 95% CI: 8.00-22.38) increase in referral rates in the multivariate logistic regression model.

Conclusions: Arranging instant appointments has increased access to SCCs by 13 times compared to the usual care, this group of patients should be given an immediate appointment to SCCs.

Keywords: COPD; access; asthma; smoking; smoking cessation.

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Conflict of interest statement

The authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none was reported.

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Respir Med

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. 2024 Aug 22:107777.

doi: 10.1016/j.rmed.2024.107777. Online ahead of print.

[Current physiotherapy practice for adults with bronchiectasis: data from the Australian Bronchiectasis Registry](#)

[Elizabeth M Webb](#)¹, [Anne E Holland](#)², [Anne B Chang](#)³, [Lucy Burr](#)⁴, [Chien-Li Holmes-Liew](#)⁵, [Paul T King](#)⁶, [Peter G Middleton](#)⁷, [Lucy Morgan](#)⁸, [Rachel M Thomson](#)⁹, [Conroy Wong](#)¹⁰, [Annemarie L Lee](#)¹¹

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- DOI: [10.1016/j.rmed.2024.107777](https://doi.org/10.1016/j.rmed.2024.107777)

Abstract

Background: Although airway clearance techniques (ACTs) and physical exercise are recommended for adults with bronchiectasis, there is little data on current practice and limited guidance predicting clinical approach.

Objective: This study aimed to describe current ACT and exercise practice recorded by patients, and identify predictors of regular ACTs, ACT modalities and exercise.

Methods: Physiotherapy-specific interventions, quality of life (Quality-of-Life Bronchiectasis questionnaire, QOL-B), demographics and disease severity were extracted from the Australian Bronchiectasis Registry. Multivariate analyses were undertaken to identify predictors of undertaking ACTs or exercise.

Results: We included 461 patients; median age of 72 years (interquartile range 64-78 years). Regular ACT use was recorded by 266 (58%) patients; the active cycle of breathing technique (n=175, 74%) was the most common technique. Regular exercise use was recorded by 213 (46%) patients, with walking the most common form of exercise. A pulmonary rehabilitation referral was made for 90 (19.5%) of patients. Regular ACT use was associated with a higher treatment burden on QOL-B (Odds ratio (OR)=0.97, 95% confidence interval (CI) 0.96 to 0.99). Regular exercise was more likely amongst patients with severe bronchiectasis compared to those with mild disease (OR=9.46, 95% CI 1.94 to 67.83) and in those with greater physical function on the QOL-B (OR=1.02, 95% CI 1.01 to 1.04).

Conclusion: Approximately half the adults in the registry report regular ACT or exercise; QOL and disease severity predict this engagement. This knowledge may

guide the tailoring of ACTs and exercise prescription to optimise physiotherapy management in adults with bronchiectasis.

Keywords: airway clearance techniques; airway clearance therapy; bronchiectasis; exercise; physical activity; physiotherapy; pulmonary rehabilitation.

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Conflict of interest statement

Declaration of Competing Interest P.G.M is principle investigator on Insmmed, AbbVie, Sanof bronchiectasis trials. R.M.T is the principle investigator for Insmmed, ZAMBON trials; Ad boards Beyond Air, AN2 trials. Nil other conflicts of interest were declared.

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. 2024 Aug 20:S2213-2600(24)00244-3.

doi: 10.1016/S2213-2600(24)00244-3. Online ahead of print.

[New thinking and a new direction in bronchiectasis](#)

[Ian D Pavord](#)¹

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No abstract available

Conflict of interest statement

I report receiving consulting fees from GSK, Sanofi Regeneron, and Astra Zeneca; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from GSK, Sanofi Regeneron, Astra Zeneca, and Circassia; and support for attending meetings and travel from Sanofi Regeneron.

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Editorial

Indian J Pediatr

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. 2024 Aug 22.

doi: 10.1007/s12098-024-05246-3. Online ahead of print.

[MRI vs. CT: Advancing the Imaging Frontier in Bronchiectasis](#)

[Sathya Srivatsav](#)¹, [Jagdish Prasad Goyal](#)²

Affiliations Expand

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- DOI: [10.1007/s12098-024-05246-3](https://doi.org/10.1007/s12098-024-05246-3)

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Acta Radiol

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. 2024 Aug 20:2841851241269918.

doi: 10.1177/02841851241269918. Online ahead of print.

[A new era of high-resolution CT diagnostics of the lung: improved image quality, detailed morphology, and reduced radiation dose with high-resolution photon-counting CT of the lungs compared to high-resolution energy-integrated CT](#)

[Marie-Louise Aurumskjöld](#)^{1,2}, [Lotta Sjunnesson](#)³, [Adrian Pistea](#)^{3,4}, [Gylfi Ásbjörnsson](#)³, [Fredrik Wellman](#)², [Gracijela Bozovic](#)^{3,4}

Affiliations Expand

- PMID: 39161325
- DOI: [10.1177/02841851241269918](https://doi.org/10.1177/02841851241269918)

Abstract

Background: High-resolution computed tomography (HRCT) is dependent on detailed morphology in diagnostic assessment of interstitial lung diseases. Photon-counting CT (PCCT) enables improved resolution while reducing radiation.

Purpose: To compare if the image quality, detailed morphology, and radiation dose in HRCT of the lung improves with PCCT compared to energy-integrated CT (EICT).

Material and methods: HRCT with PCCT in patients with body mass index (BMI) from normal to obese, previously examined with different EICT were included. They were evaluated in a five-step scale for image quality according to Quality Criteria for CT (Diagnostic Requirement of the ImPACT group-European standardization). In addition, ground-glass opacities, bronchiectasis, emphysema, nodules, and subpleural detailed morphology (≤ 1 cm from the pleural border) were evaluated by three independent thoracic and/or pediatric radiologists. Visual grading characteristics (VGC) were used for comparison of image quality and detailed

morphology and Fleiss kappa for intra-observer variability. Dose-length product (DLP) and CT dose index-volume (CTDI_{vol}) were collected to calculate effective radiation dose.

Results: HRCT with PCCT in 52 women and 48 men (mean age=67.2 ± 13.6 years; age range=27-87 years; BMI=26.9 kg/m²; range=18.6-45 kg/m²) previously examined with EICT (mean age=65.3 ± 13.6 years; age range=27-85 years; BMI=27 kg/m²; range=18.9-45 kg/m²) were included. There were significant differences in image quality for all entities in favor of PCCT. The radiation dose was reduced with PCCT by 47% in all, particularly pronounced in obese with 48.5%.

Conclusion: Image quality, detailed morphology, and radiation dose, particularly in obese patients, were significantly improved in HRCT with PCCT compared to conventional EICT. The new technique enables visualization of subpleural structures.

Keywords: High-resolution computed tomography; high resolution; photon-counting computed tomography; radiation dose.

Conflict of interest statement

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

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. 2024 Aug 20;18(1):382.

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[Bronchiectasis combined with chronic sinusitis following Celiac disease: a case report](#)

[Ali Ghassa](#)¹

Affiliations Expand

- PMID: 39160616
- PMCID: [PMC11334302](#)
- DOI: [10.1186/s13256-024-04696-9](#)

Abstract

Introduction: Celiac disease is a disease triggered by a protein called gluten. Celiac disease has intestinal and extraintestinal manifestations. Bronchiectasis is a permanent dilation of the bronchi that causes symptoms, such as cough producing a large amount of sputum, recurrent respiratory infections, and breathlessness. In addition, bronchiectasis can present in 60% of cases with chronic rhinosinusitis.

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Keywords: Bronchiectasis; Celiac disease; Chronic sinusitis.

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Conflict of interest statement

The author declares that there is no conflict of interest to be reported.

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