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

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BioDrugs

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. 2025 Oct 4.

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Biological Therapies in Chronic Obstructive Pulmonary Disease: New Directions in Personalised Respiratory Medicine

Benjamin Mappin-Kasirer [1 2], Ian D Pavord [3 4]

Affiliations Expand

- **PMID: 41046311**

- **DOI: 10.1007/s40259-025-00744-y**

Abstract

Chronic obstructive pulmonary disease (COPD), a leading cause of global morbidity and mortality, is a complex and heterogeneous respiratory condition characterised by incompletely reversible airflow obstruction on spirometry. The aetiologies and pathological patterns of COPD are varied, which has long been viewed as a hindrance to targeted treatment. Yet inflammation is central to the diverse mechanisms of COPD pathogenesis, and type 2 inflammation has emerged as a measurable, modifiable and clinically meaningful therapeutic target in those

patients in whom it is identified. The approval of first biological therapy against type 2 inflammation in COPD builds on our understanding of immunological mechanisms in airways diseases, is informed by a decade of randomised trials and makes possible a fundamental shift in our approach to this common condition. This review will (1) assess aspects of pathological inflammation in COPD, namely type 1, 2 and 3 inflammation, and the role of epithelial alarmins; (2) examine data from randomised trials on the efficacy and safety of monoclonal antibodies against inflammatory mediators in COPD; and (3) discuss future directions for biological therapies in COPD, including new patient populations, new agents and new approaches that focus on high-risk disease and open the door to prevention.

Conflict of interest statement

Declarations. Conflicts of interest: B.M.K. reports no conflicts of interest. I.D.P. has received speaker's honoraria for speaking at sponsored meetings from Astra Zeneca, Aerocrine, Almirall, Sanofi/Regeneron, Menarini and GSK; and payments for organising educational events from AZ, GSK and Sanofi/Regeneron. He has received honoraria for attending advisory panels with Sanofi/Regeneron, Astra Zeneca, GSK, Merck, Circassia, Chiesi, Upstream Bio and Areteia. He has received sponsorship to attend international scientific meetings from GSK, Astra Zeneca and Sanofi/Regeneron. Availability of data and materials: No datasets were generated for this review article. Data discussed in this article can be found in the referenced original studies. Ethics approval: Not applicable. Consent to participate: Not applicable. Consent for publication: Not applicable. Code availability: Not applicable. Author contributions: Conceptualisation and planning of the review: B.M.K and I.D.P; writing of the first draft: B.M.K.; critical revision of the manuscript: B.M.K and I.D.P; figures and table: B.M.K and I.D.P. All authors read and approved the final manuscript.

- 105 references

Proceed to details

Cite

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Chronic Obstr Pulm Dis

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doi: 10.15326/jcopdf.2025.0629. Online ahead of print.

Tiotropium in Patients With Airflow Limitation According to the Fixed Ratio But Not the Lower Limit of Normal: A Secondary Analysis of the Tiotropium in Early-COPD Study

Kunning Zhou [1], Fan Wu [1], Zhishan Deng [1], Qi Wan [1], Suying Huang [1 2], Nanshan Zhong [1 2], Yumin Zhou [1 2], Pixin Ran [1 2]

Affiliations Expand

- PMID: 41046135

- DOI: 10.15326/jcopdf.2025.0629

Abstract

Background: Patients with airflow limitation according to the fixed ratio but not the lower limit of normal (LLN) (FR+LLN-) have a poorer respiratory prognosis and higher mortality than the normal fixed ratio. However, whether tiotropium treatment improves respiratory health outcomes in patients with FR+LLN- remains unclear.

Methods: This was a secondary analysis of the 24-month Tie-COPD study, a multicentre, randomized, double-blind clinical trial comparing tiotropium with placebo for mild-to-moderate COPD. FR+LLN- was defined as a post-bronchodilator FEV_1/FVC ratio of <0.70 but ≥LLN. The primary endpoint was the between-group difference in the change from baseline to 24 months in pre-bronchodilator FEV_1. Key secondary endpoints included the between-group difference in the annual decline in pre-bronchodilator FEV_1 and exacerbations.

Results: In the Tie-COPD study, 92 patients (12%) had FR+LLN-. Tiotropium resulted in a significantly higher pre-bronchodilator FEV_1 at 24 months (difference, 191 mL; 95% confidence interval [CI] 99, 283), with a least-squares mean (LSM) change from baseline of 47 mL (95% CI -13, 108) versus -140 mL (95% CI -215, -64) with placebo. The annual decline in the pre-bronchodilator FEV_1 was 24 mL/year with tiotropium and 89 mL/year with placebo (difference 60 mL/year; 95% CI 2, 118) from 30 days through 24 months. Tiotropium reduced total exacerbations compared with placebo (relative risk=0.50; 95% CI 0.27, 0.94).

Conclusion: This study demonstrated tiotropium treatment improved lung function, ameliorated lung function decline, and reduced exacerbations compared with placebo in patients with FR+LLN-, providing evidence-based medicine evidence for the treatment in this population.

Keywords: COPD; Tie-COPD; fixed ratio; lower limit of normal; tiotropium.

Supplementary info

Grants and fundingExpand

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3

Chronic Obstr Pulm Dis

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doi: 10.15326/jcopdf.2025.0617. Online ahead of print.

Association of Mucus Plugging and Body Mass Index in Patients With Advanced COPD GOLD 3/4 With Emphysema

Jacopo Saccomanno [1], Thomas Elgeti [2], Stephanie Spiegel [1], Eva Pappe [1], Thomas Sgarbossa [1], Antonia Petersen [2], Konrad Neumann [3], Marcus A Mall [4 5 6], Martin Witzenrath [1 7], Ralf-Harto Hübner [1]

Affiliations Expand

- PMID: 41046134

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Abstract

Background: COPD is classified by its clinical phenotypes-chronic bronchitis and emphysema. A CT-based mucus plug score (MPS) was recently identified as a biomarker to subgroup COPD patients with increased airway mucus plugs. While not necessarily linked to more pronounced symptoms or structural lung changes, mucus plugs are associated with increased mortality. Interestingly, a higher MPS seems to be associated with a lower body mass index (BMI), likewise associated with increased mortality. This study aims to characterize patients with advanced lung emphysema presenting for lung volume reduction therapy with a special focus on mucus plug occurrence.

Material and methods: This retrospective, monocentric study assessed MPS in advanced COPD (GOLD III/IV) and emphysema patients evaluated for lung volume reduction therapy at Charité-Universitätsmedizin Berlin. CT scans were analyzed for mucus plugging, and clinical data were obtained from the Lung Emphysema Registry (www.lungenemphysemregister.de).

Results: A total of 127 CT scans were assessed for MPS. About 50% had no mucus plugs (score = 0), 25% had an intermediate burden (score 1-2), and 25% had a high burden (score ≥3). Higher MPS correlated with lower BMI, more pronounced emphysema, and worse lung function, including forced expiratory volume in 1 second, vital capacity, and diffusing capacity of carbon monoxide. Residual volume, pCO_2, the 6-minute walk test, and quality-of-life parameters were unaffected. Multivariate regression analysis found a strong association between mucus plugs and BMI, showing that a decrease in BMI was associated with a higher mucus burden ($p<0.001$; coefficient of -1.584).

Interpretation: This study supports an association between high MPS and BMI in a vulnerable subgroup of advanced COPD patients. Further research is needed to

understand the pathophysiology and consequences of mucus plugs, aiming for individualized risk assessments and treatment strategies.

Keywords: COPD; body mass index; emphysema; mucus plugging.

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Review

COPD

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. 2025 Dec;22(1):2567022.

doi: 10.1080/15412555.2025.2567022. Epub 2025 Oct 2.

Lung Volume Reduction Therapies in Patients with Emphysema: A Systematic Review and Network Meta-Analysis

Liyan Bo [1], Xu He [1], Yan Chen [1], Liang Shi [1], Congcong Li [1]

Affiliations Expand

- PMID: 41037331

- DOI: 10.1080/15412555.2025.2567022

Free article

Abstract

Background: Severe emphysema, a major chronic obstructive pulmonary disease (COPD) phenotype characterized by hyperinflation, is associated with significant morbidity and mortality. Lung volume reduction (LVR) therapies, including surgical (LVRS) and bronchoscopic techniques (e.g. endobronchial valves (EBVs) and coils (ECs)), aim to reduce hyperinflation and improve outcomes, but their comparative efficacy and safety are unclear.

Methods: This network meta-analysis compared LVR therapies. We systematically evaluated LVRS, EBV, EC, intrabronchial valves (IBV), sealants (ELS), vapor ablation (BVA), or airway bypass stents (ABS) in adults with severe emphysema. The primary outcomes were early and overall mortality. The secondary outcomes included lung function (FEV1, RV reduction), exercise capacity (6MWD), quality of

life (SGRQ), and adverse events. Bayesian analysis using R/BUGSNet was used to assess their effects and rankings.

Results: Twenty-six RCTs (4418 patients) were included. No LVR therapy significantly reduced mortality compared with standard medical care (SMC) (early mortality, 1.6%; overall mortality, 10.9%; and highest rates of LVRS). Compared with SMC, LVRS and EBV significantly improved FEV1, RV reduction, and the 6MWD; LVRS consistently ranked most effectively. After excluding the impact of collateral ventilation in the subgroup analysis, EC significantly improved the SGRQ and 6MWD, and a reduction in residual volume and IBV improved the SGRQ. LVRS, EBV, and EC had significantly higher adverse event rates than SMC did.

Conclusions: While no LVR therapy improved survival over SMC, LVRS and some bronchoscopic techniques (EBV, EC) significantly enhanced lung function, exercise capacity, and quality of life in severe emphysema patients. LVRS offers the greatest efficacy benefits but carries the highest risks. Bronchoscopic options (EBV, EC) provide safer and more effective alternatives, particularly for symptoms and functional improvement. Careful patient selection on the basis of fissure status and emphysema pattern is paramount.

Keywords: Emphysema; complication; efficacy; lung volume reduction.

Plain language summary

This network meta-analysis provides a comprehensive assessment of surgical and bronchoscopic lung volume reduction therapies for severe emphysema. The key findings are as follows:Compared with standard medical care, no LVR therapy significantly reduced mortality.LVRS and EBV are the most effective interventions for improving lung function (FEV1, RV reduction), exercise capacity (6MWD), and health-related quality of life (SGRQ). LVRS offers the greatest magnitude of benefit but carries the highest degree of procedural risk.EC is an effective alternative, particularly for improving symptoms and exercise tolerance, and may be suitable for patients with homogeneous disease or incomplete fissures where valves are less effective. The IBV also showed a potential benefit in SGRQ for selected patients.Patient selection is critical. Fissure integrity is paramount for the efficacy of endobronchial valves (EBV, IBV). LVRS requires careful assessment of surgical risk and emphysema patterns.Bronchoscopic techniques (EBV, EC and IBV) present a significantly safer alternative to LVRS in terms of mortality risk, expanding treatment options for higher-risk patients.However, evidence for other bronchoscopic techniques (ELS, BVA and ABS) remains limited.

Review

COPD

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. 2025 Dec;22(1):2564743.

doi: 10.1080/15412555.2025.2564743. Epub 2025 Oct 2.

Prevalence, Risk Factors, and Antibiotic Intervention of Lower Airway *Pseudomonas aeruginosa* Colonization in Patients with Stable Chronic Obstructive Pulmonary Disease: a Systematic Review and Meta-Analysis

Yanbing Liu [1], Yan Wang [2], Jingwei Qiu [1], Tao Li [1], Lihua Zhou [1], Yunping Song [1], Ling Hu [1]

Affiliations Expand

- PMID: 41037326

- DOI: 10.1080/15412555.2025.2564743

Free article

Abstract

Background and objectives: Bacterial colonization or chronic infection occurs in the lower respiratory tract of patients with chronic obstructive pulmonary disease (COPD). Previous studies on Pseudomonas aeruginosa (PA) colonization in patients with stable COPD mainly focused on its impact on prognosis, such as leading to acute exacerbations and increased mortality. However, the prevalence of PA colonization remains unknown. Evidence-based medicine is lacking regarding the association of prior antibiotics and inhaled corticosteroids (ICSs) exposure with PA colonization, intervention with antibiotic therapy for acute exacerbations, and the effect of PA eradication. We conducted this systematic review and meta-analysis to investigate these issues and inform precise treatment and prevention.

Methods: We searched PubMed, Embase, Google Scholar, Cochrane, China National Knowledge Infrastructure (CNKI), and ClinicalTrials.gov for randomized controlled trials (RCTs) and observational studies. The primary outcome was prevalence. Secondary outcomes included previous antibiotic and ICS exposure, exacerbations after antibiotic therapy, and the eradication rate of PA with inhaled antibiotics (IAs).

Results: A total of 39 studies were included, comprising 32,753 cases. The pooled prevalence was 5.6% (95% CI 0.04-0.07). Previous exposure to antibiotics and ICSs was associated with increased PA colonization, with odds ratio (OR) values of (OR = 2.85, 95% CI 1.62-5.01) and (OR = 1.89, 95% CI 1.12-3.19), respectively.

Exacerbations decreased within the next year after azithromycin treatment (standardized mean difference [SMD] = -0.43, 95% CI -0.77 to -0.10). The eradication rate of PA with IAs was 0.52 (95% CI 0.46-0.57), and IAs reduced exacerbations in the following year (SMD = -0.87, 95% CI -1.38 to -0.35).

Conclusion: The prevalence of PA colonization in stable COPD was approximately 5.6%. Prior exposure to antibiotics and ICSs increased the risk of PA colonization. Azithromycin therapy reduced exacerbations in PA colonized COPD patients. The eradication rate of PA within one year after IA therapy was about 52%, and exacerbations decreased.

Keywords: Pseudomonas aeruginosa; Stable COPD; antibiotics; colonization; eradication; prevalence.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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Pulm Circ

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. 2025 Sep 29;15(4):e70167.

doi: 10.1002/pul2.70167. eCollection 2025 Oct.

Study Design and Rationale for The Breathe Easier With Tadalafil Therapy for Exercise-Related Dyspnea in COPD-PH (BETTER COPD-PH)

Elena DeSanti [1], Matthew Jankowich [1], Gaurav Choudhary [1], Alan Morrison [1], Zachary K Stanley [1], Eric Garshick [2], Marilyn L Moy [2], Mohleen Kang [3], Cherry Wongtrakool [3], Ruxana T Sadikot [4 5], Edward C Dempsey [6], Matthew Griffith [6], Duc M Ha [6], Christopher H Schmid [1 7], Ronald H Goldstein [2], Sharon Rounds [1]; BETTER COPD-PH Study Group

Collaborators, Affiliations Expand

- **PMID: 41036079**
- **PMCID: PMC12479374**

- DOI: 10.1002/pul2.70167

Abstract

Dyspnea, a debilitating symptom of COPD, worsens health-related quality of life (HRQL), reduces daily physical activity, increases health care utilization, and is more closely associated with survival than airflow limitation. Thus, having treatments that reduce dyspnea in COPD is important. Pulmonary hypertension (PH) is a common complication of COPD that is associated with severe dyspnea, more frequent COPD exacerbations, and increased mortality. Multiple causes of PH, including a reduction in bioavailable vasodilator nitric oxide (NO), are associated with COPD (COPD-PH). Phosphodiesterase type-5 inhibitor (PDE5i) therapy restores NO signaling and improves hemodynamics and dyspnea in patients with Group 1 Pulmonary Arterial Hypertension, but has not been proven effective in COPD-PH. In a prior study (ClinicalTrials. gov identifier: NCT01862536), we investigated effects of 12 months of oral PDE5i therapy with tadalafil on 6-min walk distance (6MWD) in a multi-center, randomized, placebo-controlled trial funded by the Department of Veterans Affairs. While tadalafil did not change 6MWD at 12 months, the treatment group experienced clinically meaningful improvements in patient-reported dyspnea and HRQL at 6 months. Because of the importance of mitigating dyspnea in COPD-PH, we developed a new study protocol examining the effect of PDE-5i therapy in COPD-PH, with a reduction in dyspnea the primary outcome. In the current study (NCT05937854), we will conduct a prospective, randomized, double-blind, multi-center clinical trial to evaluate the effects of 6 months of maximally tolerated therapy with tadalafil (target dose 40 mg/day) versus placebo on dyspnea, as measured by University of California San Diego Shortness of Breath Questionnaire.

Keywords: Chronic Obstructive Pulmonary Disease; PDE-5i; exercise; phosphodiesterase type 5 inhibitor; pulmonary hypertension.

Conflict of interest statement

The authors declare no conflicts of interest.

- 67 references
- 1 figure

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Investigation of risk factors for osteoporosis with a focus on hypertension and estimation of the causal effect of hypertension on osteoporosis using causal forest

Takuya Uematsu [1 2], Shuko Nojiri [3], Wataru Urasaki [4 5], Yuji Nishizaki [6 7 8]

Affiliations Expand

- PMID: 41034571

- DOI: 10.1038/s41440-025-02372-z

Abstract

The current study aimed to comprehensively investigate the factors that most significantly increase the likelihood of developing osteoporosis, which is of great importance for aging populations. To this end, we focus on hypertension (HT) and examine its interaction and causal effect on osteoporosis. Using an administrative claims database, a nested case-control study and time-to-event analysis were conducted focusing on Japanese individuals aged ≥65 years. The results of the nested case-control study showed that rheumatoid arthritis (RA) had the highest odds ratio (OR = 1.961, 95% CI = 1.85-2.078), followed by HT (OR = 1.722, 95% CI = 1.659-1.787). In the time-to-event analysis, RA had the highest hazard ratio (HR = 2.133, 95% CI = 1.972-2.308), followed by chronic kidney disease (CKD) (HR = 1.473, 95% CI = 1.354-1.602), chronic obstructive pulmonary disease (HR = 1.46, 95% CI = 1.323-1.611), and HT (HR = 1.269, 95% CI = 1.21-1.331). Additionally, significant interactions were observed when HT co-existed with CKD, disorders of lipoprotein metabolism and other lipidemias (DLM), and RA. Moreover, the summary causal tree results of the conditional average treatment effect (CATE) using a causal inference approach revealed that the subgroup with DLM = 0, diabetes mellitus (DM) = 0, and RA = 0 exhibited the highest estimated CATE of 0.372, suggesting a strong independent causal effect of HT on osteoporosis in this group.

Keywords: Administrative claim database; Conditional average treatment effect; Hypertension; Osteoporosis; Risk.

Conflict of interest statement

Compliance with ethical standards. Conflict of interest: The authors declare no competing interests.

- 49 references

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Lancet

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. 2025 Oct 4;406(10511):1444-1445.

doi: 10.1016/S0140-6736(25)01150-X. Epub 2025 Sep 28.

Anti-inflammatory reliever therapy for children with asthma

Vanessa M McDonald [1]

Affiliations Expand

- PMID: 41033331

- DOI: 10.1016/S0140-6736(25)01150-X

No abstract available

Conflict of interest statement

I report research grants paid to my institution from GSK, the National Health and Medical Research Council, and the Medical Research Futures Fund, received in the past 3 years. I also report honoraria for the provision of education from GSK, Boehringer Ingelheim, and the Menarini Foundation, and advisory board fees from GSK. In the past 3 years I have acted as a volunteer Board Director for the Thoracic Society of Australia and New Zealand and a writing committee member for the COPD X guidelines.

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Clin Respir J

. 2025 Oct;19(10):e70128.

doi: 10.1111/crj.70128.

The Correlation Between NLR, RDW, and Pulmonary Hypertension in Patients With Bronchiectasis and Chronic Obstructive Pulmonary Disease Overlap Syndrome

Lingling Hu [1], Zhenxin Liu [1], Jiangtao Yu [2], Zhongfei Yang [1], Daxi Feng [3]

Affiliations Expand

- PMID: 41022427
- PMCID: PMC12479108
- DOI: 10.1111/crj.70128

Abstract

Introduction: Based on the analysis of the relationship between neutrophil to lymphocyte ratio (NLR) and red blood cell distribution width (RDW) and pulmonary hypertension (PH) in patients with bronchiectasis and chronic obstructive pulmonary disease overlap syndrome (BCOS), this paper aims to explore the indexes that not only represent the severity of patients with BCOS overlapping PH but also are highly related to BCOS overlapping PH.

Methods: The clinical data of 159 patients with BCOS admitted to Qilu Hospital of Shandong University Dezhou Hospital from January 2019 to November 2024 were collected and analyzed. All the patients had complete color Doppler echocardiography at this hospital and were separated into experimental group (106 cases, BCOS with PH) and control group (53 cases, BCOS not combined with PH group), according to whether they were complicated with pulmonary hypertension or not. And then the experimental group was divided into mild, moderate and severe subgroups. The correlation of NLR, RDW with pulmonary artery systolic blood pressure (PASP) in BCOS patients was analyzed. And whether there were differences or not between NLR and RDW among experimental group, control group as well as subgroups was compared. Furthermore, receiver operating characteristic (ROC) curves were constructed to evaluate the efficacy of NLR and RDW in distinguishing between "PH-complicated" and "non-PH-complicated" statuses among BCOS patients at the cross-sectional level.

Results: First, the level of NLR and RDW in experimental group was higher than those in control group, in addition the difference was statistically significant ($p < 0.05$). Second, significant intergroup differences in NLR and RDW levels were observed among the three subgroups of the experimental group (NLR: $p < 0.001$; RDW: $p = 0.011$). Specifically, both NLR and RDW levels in the severe PH subgroup

were significantly higher than those in the mild PH subgroup (NLR: adjusted p < 0.001; RDW: adjusted p = 0.009). Additionally, NLR levels in the severe PH subgroup were higher than those in the moderate PH subgroup (adjusted p = 0.011), whereas no statistically significant difference in RDW levels was noted between the severe and moderate PH subgroups (adjusted p = 0.148). Furthermore, there were no significant differences in NLR or RDW levels between the mild and moderate PH subgroups (NLR: adjusted p = 0.196; RDW: adjusted p = 0.607). Third, the level of NLR and RDW was positively correlated with PASP (r = 0.294, 0.259; p < 0.05). Fourth, Multivariate logistic regression analysis revealed that decreased PO_2, NLR, and RDW are independent risk factors for PH development in BCOS patients (all p < 0.05). Fifth, ROC curve results showed the areas under the curve (AUC) of NLR, RDW and their combined detection in differentiating BCOS patients with and without PH were 0.628, 0.751, and 0.756 respectively. In particular, RDW performed better than NLR in differentiating with regard to discriminative ability. Furthermore, compared to RDW, the AUC of the combined detection was higher, meanwhile, its specificity was greatly enhanced than both single indicators. These results indicate that the combined detection exhibits better capability in identifying PH complicating BCOS at the cross-sectional level.

Conclusions: The level of NLR and RDW is related to the severity of pulmonary arterial pressure in patients with BCOS. The two indicators can serve as a significantly relevant factor for pulmonary hypertension complicating BCOS.

Keywords: bronchiectasis and chronic obstructive pulmonary disease overlap syndrome; neutrophil to lymphocyte ratio; pulmonary hypertension; red blood cell volume distribution width.

Conflict of interest statement

The authors declare no conflicts of interest.

- 29 references
- 1 figure

Supplementary info

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Randomized Controlled Trial

J Nurs Res

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. 2025 Oct 1;33(5):e413.

doi: 10.1097/jnr.0000000000000698.

Pulmonary Rehabilitation Exercise Package for Enhancing Health in Elderly COPD Patients With Frailty: An Experimental Study

Lin-Yu Liao [1], Huan-Hwa Chen [2], Fenju Chen [3], Shunt-Chen Yang [4]

Affiliations Expand

- PMID: 40900147

- PMCID: PMC12466175

- DOI: 10.1097/jnr.0000000000000698

Abstract

Background: Frailty may result in decreased physical functioning and worsen the prognosis of chronic diseases. Chronic obstructive pulmonary disease (COPD) is associated with an increased risk of concurrent frailty. Although pulmonary rehabilitation has demonstrated improvements in COPD outcomes, its impact on patients with frailty and COPD remains unclear.

Purpose: This study was designed to examine the effects of the pulmonary rehabilitation exercise package (PREP) on frailty, dyspnea, lower extremity muscular endurance (LEME), and walking ability (WA) in older adult COPD patients with frailty.

Methods: A single-blind experimental design was used to study 100 elderly COPD patients with frailty, randomly assigned to either the experimental or control group. The experimental group (EG) received the PREP intervention, while the control group (CG) received routine care. The Clinical Frail Scale (CFS) was used to measure frailty, the Modified Medical Research Council scale was used to measure dyspnea, LEME was measured using the 30-second chair stand test, and functional exercise capacity (i.e., walking ability or WA) was measured using the 6-minute walk distance. All measurements were taken at three time points: baseline (preintervention), 1 week postintervention, and 1 month postintervention. Between-group and within-group differences and variations in repeated measurements over time were compared using independent t tests, paired t tests, and generalized estimating equations (GEE).

Results: A total of 91 participants completed the study, with 9 participants lost to follow-up. No significant between-group differences were found at baseline in terms of characteristics, frailty, dyspnea, LEME, and WA. Applying difference-in-differences, the EG outperformed the CG in terms of dyspnea and WA at both 1-week and 1-month follow-ups, while the EG significantly outperformed the CG on all measures at the 1-month follow-up. Within-group comparisons also revealed significant improvements in the EG compared with the CG. Using GEE to examine the interaction, the EG demonstrated significantly better improvements in dyspnea, LEME, and WA than the CG at the 1-month mark.

Conclusions/implications for future practice: The results show that PREP has the potential to significantly improve health in older adults with frailty and COPD by addressing frailty, dyspnea, LEME, and WA. PREP may be implemented as a subacute health care model to manage COPD-related debilitation in hospital settings.

Keywords: COPD; frail; pulmonary rehabilitation exercise.

Conflict of interest statement

The authors declare no conflicts of interest.

- **36 references**
- **1 figure**

Supplementary info

Publication types, MeSH termsExpand

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Eur J Intern Med

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. 2025 Oct:140:106499.

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Addressing polymorbidity in chronic obstructive pulmonary disease: an opportunity to improve outcomes

David M Mannino [1]

Affiliations Expand

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- DOI: 10.1016/j.ejim.2025.106499

No abstract available

Conflict of interest statement

Declaration of competing interest DM is a consultant to Astra-Zeneca, Chiesi, Lilly, Amgen, Roche, GlaxoSmithKline, Regeneron, Genentech, Up to Date, and the COPD Foundation, and a Medical Expert for the Schlesinger Law Firm.

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Observational Study

Lancet Respir Med

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. 2025 Oct;13(10):911-920.

doi: 10.1016/S2213-2600(25)00160-2. Epub 2025 Aug 27.

Symptoms, risk of future exacerbations, and response to long-term macrolide treatment in bronchiectasis: an observational study

Oriol Sibila [1], Jamie Stobo [2], Lidia Perea [1], Yong-Hua Gao [3], Jin-Fu Xu [4], Holly Lind [2], Kateryna Viligorska [2], Arietta Spinou [5], Eva Polverino [6], Felix C Ringshausen [7], Montserrat Vendrell [8], Pierre-Régis Burgel [9], Charles S Haworth [10], Michael R Loebinger [11], Natalie Lorent [12], Raja Dhar [13], Hayoung Choi [14], Sanjay H Chotirmall [15], Anthony De Soyza [16], John R Hurst [17], Jeremy S Brown [17], Menno van der Eerden [18], Paula Kauppi [19], Emma D Johnson [2], Raul Mendez [20], Katerina Dimakou [21], Apostolos Bossios [22], Antoni Torres [1], Francesco

Blasi [23], Michal Shteinberg [24], Stuart J Elborn [25], Pieter C Goeminne [26], Stefano Aliberti [27], Lata Jayaram [28], Noel Karalus [29], Steven L Taylor [30], Megan L Martin [31], Lucy D Burr [31], Conroy Wong [32], Lotte Terpstra [33], Josje Altenburg [34], Wim Boersma [33], James D Chalmers [35]

Affiliations Expand

- PMID: 40885209

- DOI: 10.1016/S2213-2600(25)00160-2

Free article

Abstract

Background: Previous studies have suggested that daily symptoms are a marker of bronchiectasis disease activity and could therefore identify patients at increased risk of exacerbation. However, international bronchiectasis guidelines recommend long-term macrolide treatment only in patients with three or more exacerbations per year. We aimed to investigate if symptoms independently predict future exacerbations and therefore identify additional responders to long-term macrolide treatment.

Methods: We used data from the EMBARC registry, a multicentre international bronchiectasis database. Baseline symptoms were evaluated with the quality-of-life bronchiectasis questionnaire respiratory symptoms score (QoL-B-RSS), followed-up for at least 1 year, and were related to the future risk of exacerbations. We subsequently conducted a post-hoc pooled analysis of three randomised controlled trials of macrolides (ie, BLESS, BAT, and EMBRACE) in 341 participants with bronchiectasis to determine if baseline symptoms were associated with response to long-term macrolide treatment, using a negative binomial regression model.

Findings: 9466 patients from the 19 324 patients included in the EMBARC registry had available QoL-B-RSS assessment at baseline and 1-year follow-up. The median age was 68 years (IQR 58-74), 5763 (60·9%) were female, and 3703 (39·1%) were male. The median Bronchiectasis Severity Index score was 7 (4-10) and Pseudomonas aeruginosa was present in the sputum of 2041 (21·6%) patients within 12-months of baseline. Previous exacerbations (rate ratio (RR) for every additional exacerbation 1·11, 95% CI 1·10-1·12; p<0·0001) and symptoms (RR for every 10 points lower QoL-B-RSS 1·10, 1·09-1·11; p<0·0001) were identified as independent risk factors for future exacerbations. The number of exacerbations during 1-year of follow-up was similar between patients with three or more exacerbations at baseline and average symptom scores (QoL-B-RSS 60-70; RR 1·58, 95% CI 1·48-1·69) and the group with no previous exacerbations but high symptom scores (RR 1·55, 1·41-1·70). The same pattern was observed in the post-hoc analysis of randomised controlled trials, both in the macrolide and placebo groups. The number-needed-to-treat to prevent exacerbations with long-term macrolide therapy was similar for patients selected based on frequent exacerbations (1·45, 95% CI 1·08-2·24) and in those with few previous exacerbations, but high symptom scores 1·43 (1·06-2·18).

Interpretation: Our results suggest that symptoms are an independent risk factor for future exacerbations in bronchiectasis. Patients who are highly symptomatic derive a similar benefit from macrolide treatment as patients with a high baseline exacerbation frequency.

Funding: EU, European Federation of Pharmaceutical Industries and the Associations Innovative Medicines Initiative Inhaled Antibiotics in Bronchiectasis and Cystic Fibrosis Consortium, European Respiratory Society.

Conflict of interest statement

Declaration of interests EP reports grants or contracts from Grifols; consulting fees from Insmed, Pari, Electromed, Grifols, and Chiesi; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from Insmed, Pari, Electromed, Grifols, Chiesi, and GSK; support for attending meetings and/or travel from Insmed; and participation on a Data Safety Monitoring Board or Advisory Board from Insmed. FCR reports grants or contracts from the German Center for Lung Research, the German Center for Infection Research (EU and European Federation of Pharmaceutical Industries and Associations), the iABC Consortium (including Alaxia, Basilea, Novartis, and Polyphor), the Mukoviszidose Institute, Novartis, Insmed Germany, Grifols, Bayer, and InfectoPharm, to their institution; consulting fees from Parion Sciences, Boehringer Ingelheim, Insmed, and Chiesi; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from I!DE Werbeagentur GmbH, Insmed, Grifols, Universitätsklinikum Frankfurt am Main, University Hospital Hamburg, AstraZeneca, and Sanofi; participation on a Data Safety Monitoring Board or Advisory Board for Insmed, Boehringer Ingelheim, Parion Sciences, and Chiesi; a leadership or fiduciary roles in other board, society, committee, or advocacy groups as a former coordinator of the ERN-LUNG Bronchiectasis Core Network, co-chair of the German Bronchiectasis Registry PROGNOSIS, a member of the SteerCo of the European Bronchiectasis Registry EMBARC, and principal investigator of the German Center for Lung Research; and fees for clinical trial participation paid to their institution from AstraZeneca, Boehringer Ingelheim, Insmed, Novartis, Parion Sciences, Recode, Ruhr University-Bochum, the University of Dundee, and Vertex. MV reports consulting fees from Chiesi; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from Insmed and Teva; support for attending meetings and/or travel from Pari, Chiesi, and Zambon; and participation on a Data Safety Monitoring Board or Advisory Board from Insmed. P-RB reports grants or contracts from GSK and Vertex to their institution and payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from AstraZeneca, Chiesi, GSK, Insmed, MSD, Pfizer, Vertex, Viatris, and Zambon. CSH reports consulting fees from 30 Technology, Chiesi, Infex, Insmed, LifeArc, Pneumagen, Vertex, and Zambon; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from Chiesi, Insmed, Vertex, and Zambon; and payment for expert testimony from Zambon. MRL reports consulting fees from Armata, 30 Technology, AstraZeneca, Parion Sciences, Insmed, Chiesi, Zambon, Electromed, Recode, Boehringer Ingelheim, Ethris, Mannkind, and AN2 Therapeutics and payment or

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contracts from Grifols; consulting fees from Antabio, AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Grifols, Insmed, Janssen, Novartis, Pfizer, and Zambon; and leadership or fiduciary roles as Chair of the European Respiratory Society Bronchiectasis Guideline Task Force, Chief Editor of European Respiratory Journal, and Chair of EMBARC Clinical Research Collaboration. NK could not be reached to declare any competing interests. All other authors declare no competing interests.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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13

Palliat Med

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Fear of suffocation in patients hospitalized with chronic respiratory disease: Results from a flashmob trial

Kris Mooren [1], Marcel van Dijk [2], Olaf Geerse [3], Manon Wubbels [4], Yvonne Engels [4]

Affiliations Expand

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- DOI: 10.1177/02692163251363437

Abstract

Background: In patients suffering from chronic respiratory diseases, the prevalence of comorbid anxiety disorder is higher compared to controls. A specific form of anxiety in respiratory patients is fear of suffocation. This fear has been explored in qualitative studies on the experience of dyspnea in chronic obstructive pulmonary disease (COPD) and interstitial lung disease. However, its prevalence in respiratory patients is unknown.

Aim: We aimed to assess the prevalence of fear of suffocation among patients with respiratory disease.

Design: Flashmob research (prospective data collection by a large group of researchers within a short time frame). Participants were asked if they had ever been afraid of suffocation in relation to their disease, and whether they had discussed this fear with their healthcare provider.

Setting/participants: Thirty hospitals across the Netherlands included hospitalized adults diagnosed with COPD, asthma, lung cancer, or interstitial lung disease on a single day. Exclusion criteria were language barriers, impaired cognition, or if the staff deemed the interview too stressful at that time.

Results: Out of 246 eligible patients, 163 (66%) participated. Of these patients, 58% had COPD, 17% asthma, 4% interstitial lung disease, and 21% had lung cancer. Most patients had experienced fear of suffocation (57%), with the highest prevalence among those with COPD (63%) and asthma (64%). Notably, only 38% of patients who experienced this fear had discussed this with a healthcare provider.

Conclusions: This study underscores the high prevalence of fear of suffocation among patients with respiratory disease and highlights the potential value of clinician awareness.

Keywords: Dyspnea; anxiety; asphyxia.

Conflict of interest statement

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

Supplementary info

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J Psychosom Res

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Factors associated with new onset of depression and anxiety symptoms differ by sex in the COPDGene study

Kirsten Voorhies [1], Jess G Fiedorowicz [2], Abebaw M Yohannes [3], Gregory L Kinney [4], Dawn L DeMeo [5], Elizabeth A Regan [6], James D Crapo [6], Edwin K Silverman [5], Christoph Lange [7], Karin F Hoth [8], Sharon M Lutz [9]

Affiliations Expand

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Free article

Abstract

Objective: Examine clinical and demographic variables associated with new onset depression and anxiety symptoms and assess moderation by sex in COPDGene, a cohort study of current and former smokers at risk for or with chronic obstructive pulmonary disease (COPD).

Methods: In the COPDGene study, 2653 adults had the hospital anxiety (HADS-A) and depression (HADS-D) scales available at phase 2 and 3, as well as clinical and demographic variables available at 2 and non-elevated HADS at phase 2. We defined new onset depression symptoms as HADS-D elevated at phase 3 (HADS-D ≥ 8) versus no new onset as HADS-D not elevated at either phase (HADS-D < 8). New onset anxiety symptoms were defined identically using HADS-A. We used logistic regression models among all participants and stratified by sex and assessed sex interactions for variables associated with the outcome for only one sex.

Results: Among males, COPD Assessment test (CAT) score was positively associated with new onset depression ($\beta = 0.08$, $p = 1.9 \times 10^{-5}$) and anxiety ($\beta = 0.06$, $p = 1.4 \times 10^{-3}$) symptoms. Among females, the modified Medical Research Council (mMRC) dyspnea was positively associated with new onset anxiety symptoms ($\beta = 0.33$, $p = 1.4 \times 10^{-3}$). We found sex by CAT score ($\beta = -0.06$, $p = 0.02$) and sex by mMRC dyspnea ($\beta = 0.42$, $p = 5.1 \times 10^{-3}$) interactions on new onset anxiety symptoms, and sex by CAT score interaction ($\beta = -0.05$, $p = 0.04$) on new onset depression symptoms.

Conclusions: These findings highlight the importance of understanding factors that increase risk for depression and anxiety among smokers at risk for or with COPD and are moderated by sex.

Keywords: Anxiety; Depression; Hospital anxiety and depression scale (HADS); Sex.

Conflict of interest statement

Declaration of competing interest Regarding conflicts of interest, in the past three years, Edwin K. Silverman received grant support from Bayer and Northpond Laboratories and Dawn L. DeMeo received support from Bayer and the Alpha-1 Foundation. The funding sources played no role in the design of the study or the

decision to submit the manuscript for publication. No other authors reported conflicts of interest.

Supplementary info

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Review

Eur J Intern Med

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Non cardiovascular comorbidities in Heart Failure. An updated position paper from the Heart Failure Working Group of the Italian Society of Cardiology (SIC)

Michele Correale [1], Andrea Salzano [2], Lucia Tricarico [3], Antonio Cittadini [4], Giulia Crisci [5], Giuseppe Dattilo [6], Riccardo Maria Inciardi [7], Emiliano Fiori [8], Stefania Paolillo [9], Gaetano Ruocco [10], Angela Sciacqua [11], Paolo Severino [12], Valentina Mercurio [13], Piergiuseppe Agostoni [14], Francesco Barillà [15], Frank Lloyd Dini [16], Pasquale Perrone Filardi [9], Savina Nodari [7], Alberto Palazzuoli [17]; Italian Society of Cardiology (ISC) Working Group on Heart Failure

Affiliations Expand

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Abstract

Heart Failure (HF) is frequently associated with various non cardiovascular (CV) comorbidities significantly impacting HF prognosis. Indeed, the simultaneous presence of multiple diseases leads to an increased vulnerability, with frailty occurrence. This status implies poor quality of life and increased adverse events

rate in terms of hospitalization and mortality. Therefore, the most recent trials and observational studies indicate non-CV comorbidities as new targets for novel management strategies and drugs; however, there is still the need to better understand the pathophysiology of non-CV comorbidities and the possible interplay between non-CV comorbidities and HF. Additionally, metabolic, and multiple organ diseases reduce the use and the achievement of targeted doses of HF Guideline-directed medical therapy (GDMT), due to potential adverse effects, exposing patients to further clinical events. Finally, non-CV comorbidities burden demonstrated different prevalence and prognostic impact according to HF phenotypes, impacting on the disease progression. Therefore, in order to provide physicians and researchers engaged in the "fight against heart failure" an updated practice guide, the Working Group on Heart Failure of the Italian Society of Cardiology (ISC) offers a revised manifesto on the relationship between non-CV comorbidities and HF.

Keywords: COPD; Cardio-oncology; Chronic kidney disease; Diabetes; Heart failure; Hormones; Obesity; Sleep apnea.

Conflict of interest statement

Declaration of competing interest The authors declare they have no conflict of interest (in particular, the Italian Society of Cardiology (ISC) Working Group on Heart Failure has not received funding from the pharmaceutical industry).

Supplementary info

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Review

Respir Med

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Ocular manifestations in COPD patients. An underrecognized comorbidity

Maria Dettoraki [1], Kalliopi-Theoni Vandorou [2], Dionysios Tsoukalas [3], Evangelia Basagianni [1], Irini Chatziralli [1], Panagiotis Theodossiadis [1], Stelios Loukides [2], Dimitrios Toumpanakis [4]

Affiliations Expand

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Free article

Abstract

Chronic obstructive pulmonary disease (COPD) is characterized by the presence of comorbidities, such as cardiovascular diseases, that significantly impact symptoms, quality of life and prognosis. Indeed, it is shown that patients with COPD may present with diseases of aging, earlier in life, including eye disorders, such as macular degeneration and cataract. Although underrecognized, cumulative evidence over the last years suggests that COPD is associated with ocular abnormalities, mainly in the posterior segment of the eye, affecting both the microvascular network of the retina and the optic nerve, while structural abnormalities of the choroid and cornea have also been described. Thus, the aim of this review is to provide a comprehensive description of the evidence for ocular findings in patients with COPD that is an underrecognized entity and co-morbidity. A secondary aim of this review is to introduce pulmonologists to current ophthalmological techniques that may foster both clinical practice and research, especially through the assessment of the ocular microvascular network that is closely related to cardiovascular comorbidities.

Keywords: COPD; Microvascular; Optic neuropathy; Retinopathy.

Conflict of interest statement

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

Supplementary info

Publication types, MeSH termsExpand

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17

Lancet Reg Health Eur

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Cardiovascular safety of biologic therapies in patients with severe asthma: a nationwide cohort study in Belgium

Frauke Van Vaerenbergh [1], Delphine Vauterin [1], Maxim Grymonprez [1 2], Lowie E G W Vanfleteren [3 4 5], Guy Brusselle [5 6 7], Lies Lahousse [1 6]

Affiliations Expand

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Abstract

Background: In last decades, biologic therapies have been approved for severe allergic and/or eosinophilic asthma. Limited studies have investigated the effect of biologics on (acute) cardiovascular events, which have reported conflicting results. We aimed to investigate the potential cardiovascular risk of anti-immunoglobulin(Ig)-E (omalizumab) and anti-interleukin(IL)-5/IL5 receptor (IL5R) therapies (mepolizumab and benralizumab) in patients with severe asthma compared with non-biologic users.

Methods: Adult asthma patients eligible for biologics were identified in Belgian nationwide data between 2017 and 2022. Inverse probability of treatment weighted Cox regression was used to investigate cardiovascular outcomes and all-cause mortality, while controlling for age, sex, obesity, smoking, comorbidities, comedication, exacerbations, and frailty.

Findings: This cohort study consisted of 171,865 patients (mean age 64 years; 55% females) including 1826 (1.1%) anti-IgE users and 2398 (1.4%) anti-IL5/IL5R users. Anti-IgE exposure was associated with a significantly lower risk of mortality (aHR 0.48, 95% CI 0.40-0.58), congestive heart failure (aHR 0.79, 95% CI 0.65-0.95), peripheral artery disease (aHR 0.66, 95% CI 0.51-0.86), and stroke (aHR 0.54, 95% CI 0.36-0.81). Anti-IL5/IL5R use was associated with a significantly lower risk of mortality (aHR 0.35, 95% CI 0.29-0.42), congestive heart failure (aHR 0.63, 95% CI 0.52-0.76), arrythmia (aHR 0.78, 95% CI 0.68-0.90), and peripheral artery disease

(aHR 0.69, 95% CI 0.54-0.87) compared with non-biologic users. No significant differences in the risk of myocardial infarction and pulmonary embolism were observed.

Interpretation: In this nationwide observational study, biologic therapies for patients with severe asthma were associated with a significantly lower risk of all-cause mortality and specific cardiovascular diseases compared with non-biologic users.

Funding: None.

Keywords: Anti-IL5 therapy; Anti-IgE therapy; Asthma; Biological; Cardiovascular events; Monoclonal antibody; Mortality.

Conflict of interest statement

Outside this manuscript, LL has been consulted as expert for AstraZeneca, GlaxoSmithKline and Sanofi, and has given lectures sponsored by Chiesi, Johnson and Johnson, IPSA vzw and Domus Medica vzw (non-profit organizations facilitating lifelong learning for health care providers), all paid to her institution. She received support for travel from Menarini. None of which are related to the content of this work. Outside this manuscript, LV received research grants from The Family Kamprad Foundation, Svensk Lungmedicinsk Förening, the Swedish government and country council ALF grant, The Swedish Heart and Lung Foundation and AstraZeneca, all paid to his institution. LV received payments or honoraria for lectures or presentations by GSK, Astrazeneca, Boehringer, Novartis, Chiesi, Resmed, Pulmonx, Grifols, and Sanofi. GB received fees for advisory boards and lectures from AstraZeneca, Chiesi, GlaxoSmithKline, and Sanofi Regeneron. All other authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

- 34 references
- 2 figures

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18

Eur J Intern Med

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A person-centred clinical approach to the multimorbid patient with COPD

Bartolome R Celli [1], Leonardo M Fabbri [2], Abebaw M Yohannes [3], Nathaniel M Hawkins [4], Gerard J Criner [5], Jessica Bon [6], Marc Humbert [7], Christine R Jenkins [8], Leonardo Pantoni [9], Alberto Papi [10], Jennifer K Quint [11], Sanjay Sethi [12], Daiana Stolz [13], Alvar Agusti [14], Don D Sin [15]

Affiliations Expand

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Free article

Abstract

Most patients with a chronic disease are multimorbid. This is particularly important in patients with chronic obstructive pulmonary disease (COPD), who on average have five other identified comorbidities that independently impact their health and increase their mortality risk. Using a modified Delphi method, we selected the 20 most important diseases associated with COPD and clustered them into five domains: mental, respiratory, cardiovascular, metabolic and multiple organs loss of tissue. We then developed a systematic approach to characterise the impact and clinical presentation of individual diseases within each cluster, and to define the priority and timing of measurement of the potential markers of disease presence and severity. Given the absence of integrated guidelines to treat multimorbid patients, we reviewed and selected individual disease guidelines or recommendations that can be accessed for specific information related to the management of each disease. In addition, we built a multimorbidity 'Health Dashboard' that, completed by the patient or health practitioner, can help identify the presence and severity of comorbid diseases. By using a practical comprehensive approach, it is possible to identify and characterise important comorbid diseases in patients with COPD, and to implement management tools that should help improve their outcome. This expert consensus commentary summarises patient-centred recommendations to manage comorbidities in COPD patients, aiming to improve quality-of-life and reduce disease burden through a holistic approach. Prospective pragmatic trials comparing such an approach with usual care for multimorbid patients with COPD including long-term follow-up are urgently needed.

Keywords: Chronic obstructive pulmonary disease; Comorbidity; Disease management.

Conflict of interest statement

Declaration of competing interest In addition to editorial support disclosed above, the authors have the following conflicts of interest: Bartolome R. Celli received consulting fees from Chiesi for participation in this project. Outside the scope of

this manuscript, he received fees from GlaxoSmithKline and AstraZeneca for consulting, speaking at meetings and participating in advisory boards, from Menarini for consulting and speaking at meetings, from Sanofi Aventis for consulting and participating in advisory boards, from Axios for consulting, and from Chiesi and Regeneron for lectures, presentations, speakers bureaus, manuscript writing or educational events, support for attending meetings and/or travel from GlaxoSmithKline and Sanofi Aventis, and participated in a Data Safety Monitoring Board or Advisory Board for AZ Therapeutics, Sanofi Aventis, and Vertex. Leonardo M. Fabbri received consulting fees from Chiesi, GlaxoSmithKline, AstraZeneca, Novartis, and Verona Pharma, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Chiesi, GlaxoSmithKline, and Glemark, and participation in a Data Safety Monitoring Board or Advisory Board for Novartis, Chiesi and ICON. Abebaw M. Yohannes received consulting fees from Chiesi for participation in this project. He received support for attending a meeting from Theravance Bio Pharma limited, outside the scope of this manuscript. Nathaniel M. Hawkins declares a grant to his institution from AstraZeneca, consulting fees from AstraZeneca, and payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, and Novo-Nordisk. All are outside the scope of the current manuscript. Gerard J. Criner received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares grants or contracts to his institution from ALung Technologies Inc, American College of Radiology, American Lung Association, AstraZeneca, BioScale Inc, Boehringer Ingelheim, Breath Therapeutics Inc, COPD Foundation, Coridea/Zidan, Dr. Karen Burns/St. Michael's Hospital, Fisher & Paykel, Galapagos NV, GlaxoSmithKline, Lungpacer Medical Inc, NHLBI, Nuvaira Inc, PCORI, Pulmonary Fibrosis Foundation, Pulmonx, Philips Respironics Inc, Respivant Sciences, Spiration Inc, Steward St Elizabeth's Medical Center of Boston Inc, Veracyte Inc, Bellerophon Therapeutics, Regeneron, Clear Creek Bio Inc, Corvus Pharmaceuticals Inc, Eli Lilly and Company, Gilead Sciences, Incyte Corporation, Janssen Vaccines & Prevention B.V., Daniel Benjamin, Hoffmann-La Roche, Merck Sharp & Dohme Corp., Swedish Orphan Biovitrum, Aevi Genomic Medicine, LLC, a Cerecor company, Massachusetts General Hospital, Pfizer, and CalciMedica Inc, and consulting fees from Aerwave Medical Inc, Amgen, AstraZeneca, Bayer AG, Boehringer Ingelheim Pharmaceutical, BTG International, Broncus Medical, Chiesi Farmaceutici, CSA Medical, Eolo Medical, Fisher & Paykel, Gala Therapeutics, GlaxoSmithKline, Helios Medical, Hospicom Inc, Intuitive Surgical Inc, Merck, Medscape, LLC, Medtronic, Mereo Biopharma, NGM Biopharmaceuticals, Novartis Pharma AG, Olympus, PneumRx, Patara Pharma, Prometic BioTherapeutics, Philips Respironics, Pulmonx, Regeneron Healthcare Solutions Inc, Respicant Sciences, ResMed, Sanofi US Services Inc, The Implementation Group, Verona Pharmaceuticals, and WebMD. Jessica Bon received consulting fees from Chiesi for participation in this project. She also declares consulting fees from Verona Pharma, GlaxoSmithKline, Genentech, ProPharma Group, Regeneron, and Sanofi, all outside the scope of the current manuscript. Marc Humbert declares grants to his institution from Gossamer and Merck, consulting fees from 35 Pharma, Aerovate, AOP Orphan, Chiesi, Ferrer, Gossamer, Janssen, Keros, Liquidia, Merck, Morphic, Novartis, Respira, Roivant, and United Therapeutics, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Janssen and Merck, and participation on a data safety monitoring board or advisory board for 35 Pharma, Aerovate, Janssen, Keros, Merck, Novartis, and United

Therapeutics. All are outside the scope of the current manuscript. Christine R. Jenkins declares grants to her institution from AstraZeneca and Sanofi, consulting fees from AstraZeneca, GlaxoSmithKline, and Chiesi, payment or honoraria for lectures or educational events from AstraZeneca, GlaxoSmithKline, Sanofi, Novartis, and Chiesi, support for attending meetings and/or travel (only when an invited speaker) from AstraZeneca and GlaxoSmithKline, participation on advisory boards for AstraZeneca, GlaxoSmithKline, Chiesi, Sanofi, and Novartis, and an unpaid leadership or fiduciary role for the Lung Foundation Australia and the Asbestos and Dust Diseases Research Institute. All are outside the scope of the current manuscript. Leonardo Pantoni received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares consulting fees from Amicus and PIAM, outside the scope of the current manuscript. Alberto Papi receiving consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares payments to his institution from Chiesi, AstraZeneca, GlaxoSmithKline and Sanofi, consulting fees from Chiesi, AstraZeneca, GlaxoSmithKline, Sanofi, Avillion, Moderna, and Roche, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Chiesi, AstraZeneca, GlaxoSmithKline, Menarini, Zambon, Mundipharma, Sanofi, Iqvia, Avillion, Sanofi, Regeneron, Zambon, and participation on advisory boards for Chiesi, AstraZeneca, GlaxoSmithKline, Sanofi, Iqvia, Avillion, and Moderna. Jennifer K. Quint received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, she declares grants to her institution from the Medical Research Council, NIHR, Health Data Research, GlaxoSmithKline, Boehringer Ingelheim, AstraZeneca, Insmed, and Sanofi, and consulting fees from GlaxoSmithKline, Chiesi, and AstraZeneca. Sanjay Sethi received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares research grants to his institution from Chiesi, AstraZeneca, and Sanofi-Regeneron, royalties or licenses from Wolters Kluwer Health, consulting fees from AstraZeneca, Boehringer Ingelheim, Chiesi, and GlaxoSmithKline, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, and GlaxoSmithKline, and participation on a data safety monitoring board for Nuvaira, Boehringer Ingelheim, and Pulmonx. Daiana Stolz declares payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from AstraZeneca, Berline-Chemie/Menarini, Boehringer Ingelheim, Chiesi, CSL Behring, Curetis AG, GlaxoSmithKline, Merck, MSD, Novartis, Sanofi, Vifor, and Roche, participation on a data safety monitoring board or advisory board for AstraZeneca, Berline-Chemie/Menarini, Boehringer Ingelheim, Chiesi, CSL Behring, Curetis AG, GlaxoSmithKline, Merck, MSD, Roche, Novartis, Sanofi, OM Pharma and Vifor, and that she is a current unpaid GOLD representative for Switzerland. All are outside the scope of the current manuscript. Alvar Agusti received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he reports grants to his institution from AstraZeneca, GlaxoSmithKline, and Menarini, received consulting fees from GlaxoSmithKline, AstraZeneca, Chiesi, Menarini, Zambon, MSD, and Sanofifor lectures. He also declares an unpaid position as the Chairman of the Board of Directors of GOLD. Don D. Sin received an investigator-initiated grant from Nextone paid to UBC, and honoraria for giving talks on COPD from AstraZeneca, GlaxoSmithKline, and Boehringer Ingelheim, and declares that he was chair of a data safety monitoring board for a NHLBI-sponsored trial and is Deputy Editor of the European Respiratory Journal. All are outside the scope of the current manuscript.

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Observational Study

J Am Med Dir Assoc

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. 2025 Oct;26(10):105792.

doi: 10.1016/j.jamda.2025.105792. Epub 2025 Aug 21.

Physical Fitness, Biological Aging, and Healthy Longevity

Ziyuan Chen [1], Paul James Collings [1], Mengyao Wang [1], Qiaoxin Shi [1], Shan Luo [1], Shiu Lun Au Yeung [1], Soren Brage [2], Tomas Gonzales [2], Youngwon Kim [3]

Affiliations Expand

- PMID: 40789340

- DOI: 10.1016/j.jamda.2025.105792

Abstract

Objectives: Physical fitness, particularly cardiorespiratory fitness (CRF) and muscle strength, is associated with reduced disease risk. However, its combined association with biological aging in promoting healthy longevity remains unanswered. We investigated whether cardiorespiratory fitness (CRF) and muscle strength could modify the prospective associations between accelerated biological aging and premature termination of healthy longevity.

Design: Prospective observational study.

Setting and participants: This study included 46,481 UK Biobank participants.

Methods: CRF was estimated via individualized submaximal bike protocols and muscle strength was measured using hand dynamometers. Biological aging was

quantified using PhenoAge based on 9 blood biomarkers and chronological age. Age acceleration (PhenoAgeAccel) was derived from regressing PhenoAge on chronological age. Termination of healthy longevity was defined as the first occurrence of 8 health-deteriorating events (cancer, myocardial infarction, diabetes mellitus, chronic obstructive pulmonary disease, stroke, dementia, congestive heart failure, and death).

Results: High CRF and muscle strength were each associated with a 10% [hazard ratio (HR), 0.90; 95% confidence interval (CI), 0.86-0.94] and 13% (HR, 0.86; 95% CI, 0.84-0.91) reduction in the health span termination risk compared with their bottom tertile counterparts, after adjusting for confounders. Additive interaction was found between PhenoAgeAccel and both CRF (P = .042) and muscle strength (P = .005), with multiplicative interaction found only with muscle strength (P = .026), suggesting that the largest risk elevation occurred in those with low CRF/muscle strength. Joint analysis showed (1) heightened risk of health span termination associated with accelerated biological aging was partially attenuated by high CRF and muscle strength, and (2) accelerated biological aging exhibited the highest risk in individuals with low fitness.

Conclusions and implications: Enhanced CRF and muscle strength could offset the risk of premature health span termination associated with accelerated biological aging. Our findings suggest that biological aging rates should be considered in personalized fitness interventions to optimize health span. Public health strategies should prioritize cardiorespiratory and muscular fitness to mitigate aging-related health risks.

Keywords: Healthy longevity; biological aging; cardiorespiratory fitness; muscle strength; physical fitness.

Conflict of interest statement

Disclosure The authors declare no conflicts of interest.

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Randomized Controlled Trial

Physiother Res Int

. 2025 Oct;30(4):e70097.

doi: 10.1002/pri.70097.

Effect of Home-Based Pulmonary Rehabilitation Management on Bone Mineral Density and Function for Stable Chronic Obstructive Pulmonary Disease Patients With Osteoporosis: A Randomized Controlled Trial

Kexin Wang [1 2 3], Shan Yang [4], Ling Ren [1 2 3], Chenggi He [1 2 3], Chengsen Jia [1 2 3]

Affiliations Expand

- PMID: 40765137

- DOI: 10.1002/pri.70097

Abstract

Purpose: This study aimed to examine the effect of home-based pulmonary rehabilitation (PR) on bone mineral density (BMD), lung function, dyspnea, and walking ability for stable Chronic Obstructive Pulmonary Disease (COPD) patients with OP (osteoporosis).

Methods: The required sample size was 27 per group, adjusted to 32 per group to account for a 15% dropout rate, ensuring 90% power. This is a 6-month randomized, single-blind, controlled trial. COPD patients with OP were randomly divided into the home-based PR and control groups. Patients in the control group received the program of health education and drug treatment. Patients in the home-based PR group received additional home-based PR programs. The primary outcome was the bone mineral density (BMD) at the lumbar spine. The secondary outcomes included BMD at the femoral neck, lung function (FEV_1% and FEV_1/FVC), the modified Medical Research Council (mMRC), COPD assessment test (CAT), Borg dyspnea scale (Borg), and Six-minute walk distance test (6MWT). All outcomes were assessed at 3 and 6 months.

Results: After 6 months, 29 patients in the home-based PR group and 28 in the control group completed the trial. The BMD of the lumbar spine and femoral neck in the home-based PR group was significantly higher than that in the control group (0.758 ± 0.048 vs. 0.728 ± 0.057, $p = 0.031$, 0.670 ± 0.024 vs. 0.658 ± 0.019, $p = 0.039$, respectively). There was no significant difference in FEV_1% and FEV_1/FVC between the groups. The mMRC, CAT, and Borg of the home-based PR group were significantly lower than those of the control group at 3 and 6 months ($p < 0.05$). The 6MWT of the home-based PR group was significantly higher than that of the control group at 3 and 6 months ($p < 0.05$).

Conclusions: Home-based PR improved BMD, dyspnea, symptoms, function, and daily living ability but not lung function in COPD patients with OP.

Keywords: bone mineral density; chronic obstructive pulmonary disease; home-based pulmonary rehabilitation; osteoporosis.

- **50 references**

Supplementary info

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Comparative Study

Respir Med

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. 2025 Oct:247:108292.

doi: 10.1016/j.rmed.2025.108292. Epub 2025 Aug 7.

Comparing major COPD triple therapy trials using a structured multi-criteria decision analysis: A deep dive into patient populations and outcomes

Mario Cazzola [1], Mauro Maniscalco [2], Vincenzo Patella [3], Luigino Calzetta [4], Maria Gabriella Matera [5], Paola Rogliani [6]

Affiliations Expand

- **PMID: 40759267**

- **DOI: 10.1016/j.rmed.2025.108292**

Free article

Abstract

Background: Triple inhaled therapy (ICS/LABA/LAMA) is widely recommended for managing COPD in patients with persistent symptoms or frequent exacerbations.

However, variability in trial designs, populations, and pharmacologic formulations complicates direct comparison between regimens.

Objective: To evaluate the comparative performance of three triple therapies, FF/VI/UMEC, BUD/FOR/GLY, and BDP/FOR/GLY, using a multidimensional comparative decision analysis (MCDA) across key clinical domains.

Methods: Data from pivotal trials (IMPACT, FULFIL, TRINITY, TRIBUTE, TRILOGY, ETHOS, and KRONOS) were synthesized using an MCDA framework encompassing lung function, symptom control, and exacerbations. Mortality, safety, and device usability were also assessed. Analyses considered variations in enrolled populations, prior ICS use, and inhaler characteristics.

Results: FF/VI/UMEC showed consistent efficacy across multiple domains and populations, particularly in patients at high risk of exacerbations. BUD/FOR/GLY was associated with reductions in exacerbations and mortality, particularly in patients previously treated with LABA/LAMA. BDP/FOR/GLY may be suitable for ICS-maintained patients. Trials like FULFIL and KRONOS showed symptom and lung function gains even in non-exacerbators, although ICS use in this group always warrants caution due to pneumonia risk.

Limitations: Findings are based on indirect comparisons across heterogeneous trials. Relative changes from dual therapy comparators were evaluated, and pharmacological and device-related differences between each triple therapy and the comparators may have influenced outcomes.

Conclusions: Among the therapies evaluated, FF/VI/UMEC achieved the highest composite MCDA score. However, optimal COPD management requires personalized treatment to be prescribed based on factors such as exacerbation history, previous ICS use, inhaler preference and adherence. This may involve evaluating the use of an alternative triple therapy and emphasizes the importance of aligning the choice of triple therapy with the individual's clinical profile and treatment goals.

Conflict of interest statement

Declaration of competing interest We have no relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript. This includes employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties. Furthermore, we declare that this manuscript was not funded/sponsored, and no writing assistance was utilized in its production.

- Cited by 1 article

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Review

Respir Med

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doi: 10.1016/j.rmed.2025.108282. Epub 2025 Jul 31.

Exercise-based pulmonary rehabilitation for individuals with chronic obstructive pulmonary disease: What is the potential role of biomarkers? A narrative review

Claudio Candia [1], Salvatore Fuschillo [2], Pasquale Ambrosino [3], Andrea Motta [4], Nicolino Ambrosino [5], Mauro Maniscalco [6]

Affiliations Expand

- PMID: 40752631

- DOI: 10.1016/j.rmed.2025.108282

Abstract

Chronic obstructive pulmonary disease (COPD) is a prevalent, complex, and heterogeneous respiratory condition characterized by cough, dyspnea, exercise intolerance, and persistent airflow limitation. Despite its common features, COPD encompasses a variety of phenotypes-including airflow obstruction, emphysema, chronic bronchitis, asthma-COPD overlap (ACO), and frequent exacerbations-each driven by distinct pathophysiological mechanisms. Over the past three decades, pulmonary rehabilitation (PR) including exercise training has emerged as a cornerstone non-pharmacological intervention for COPD management. However, individual responses to exercise training are highly variable. This variability may stem from both patient-related factors-such as disease severity, comorbid conditions, and motivational levels-and program-related aspects, including session frequency, exercise intensity, and program duration. Consequently, there is a pressing need for reliable predictive and monitoring biomarkers that can identify people most likely to benefit from PR, and guide personalization of treatment protocols regarding intensity and duration. Such biomarkers are essential not only for improving clinical outcomes but also for optimizing the use of limited healthcare

resources. Despite their potential, the association between biomarkers and PR outcomes remains underexplored. In this narrative review, we aim to synthesize current evidence on the role of specific biomarkers in predicting and evaluating the effectiveness of PR in individuals with COPD.

Keywords: Biomarkers; COPD; Disability; Exercise; Outcome; Rehabilitation.

Conflict of interest statement

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

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Respir Med

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. 2025 Oct:247:108280.

doi: 10.1016/j.rmed.2025.108280. Epub 2025 Jul 29.

Parametric estimation of age-, sex-, and spirometry grade-specific mortality in a cohort of COPD patients from Germany: Results from COSYCONET

Tobias Niedermaier [1], Peter Alter [2], Rudolf Jörres [3], Claus Vogelmeier [4], Rolf Holle [5]

Affiliations Expand

- PMID: 40744284

- DOI: 10.1016/j.rmed.2025.108280

Free article

Abstract

Background: Chronic obstructive pulmonary disease (COPD) substantially contributes to morbidity and mortality worldwide. We aimed at estimating Global Initiative for Chronic Obstructive Lung Disease (GOLD) spirometric grade-specific mortality in COPD for Germany, using data from a large-scale cohort of patients with COPD.

Methods: Using COSYCONET data, a cohort of 2741 patients diagnosed with COPD was followed over up to 9 years. We estimated mortality rates for GOLD grades 1 to 4 and stratified into age and sex groups. An exponential survival model was used to estimate mortality after checking model assumptions. Additionally, a Cox proportional hazards model was estimated as plausibility check for the exponential model.

Results: A total of 345 deaths were observed during the follow-up period. The data fitted well to an exponential survival model when the first year of follow-up was excluded, suggesting a "healthy participant effect". GOLD grade was a strong predictor of mortality, with hazard ratios of 1.6, 3.2, and 8.8 for GOLD 2-4 compared to GOLD 1. Hazard ratios of the Cox model were similar (1.7, 3.4, and 10.0 for grades 2-4 compared to grade 1). At a given grade, mortality strongly increased with age. 1-year mortality ranged from 0.5 % (GOLD 1, <55 years, females) to 54.9 % (GOLD 4, 80+ years, males). Mortality was lower among females by approximately 25 %.

Conclusion: Based on our findings, mortality in COPD depends on GOLD grade, age, sex and smoking status. Parametric estimation allowed to estimate 1-year mortality for each combination of COPD grade and age group, including uncertainty estimates.

Keywords: COPD; Markov model parameters; PRISm; Parametric survival.

Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Claus Vogelmeier reports financial support was provided by German Federal Ministry of Education and Research (BMBF). Claus Vogelmeier reports a relationship with German Ministry of Education and Science (BMBF), AstraZeneca, Boehringer Ingelheim, Grifols, GlaxoSmithKline, and Novartis that includes: funding grants. Claus Vogelmeier reports a relationship with Aerogen, AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Novartis, and Nuvaira that includes: consulting or advisory. Claus Vogelmeier reports a relationship with Aerogen, AstraZeneca, Boehringer Ingelheim. that includes: speaking and lecture fees. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Am J Respir Crit Care Med

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. 2025 Oct;211(10):1794-1801.

doi: 10.1164/rccm.202501-0247OC.

Visual and Quantitative Interstitial Lung Abnormality Progression in COPDGene

Rachel K Putman [1], Jonathan A Rose [1], Ruben San José Estepar [2], Ann-Marcia C Tukpah [1], Claire C Cutting [1], Takuya Hino [2 3], Akinori Hata [4], Mizuki Nishino [2 3], Stephen M Humphries [5], David A Lynch [5], Edwin K Silverman [6], Michael H Cho [1 6], Ivan O Rosas [7], George R Washko [1], Hiroto Hatabu [2 3], Raúl San José Estepar [2], Gary M Hunninghake [1 3]

Affiliations Expand

- PMID: 40720797

- DOI: 10.1164/rccm.202501-0247OC

Abstract

Rationale: Interstitial lung abnormalities (ILAs) are visually identified changes on chest computed tomography (CT) scans that may represent early or mild pulmonary fibrosis. Quantitative interstitial abnormalities (QIAs) measure potential parenchymal lung injury on chest CT scans using an automated algorithm. It is not known if combining these visual and quantitative assessments improves prediction of imaging progression. Objectives: To assess the utility of quantitative imaging to predict imaging progression of ILAs and adverse clinical outcomes in a cohort of smokers. Methods: ILA presence, subtypes, and progression, as well as QIAs, were assessed on chest CT scans from participants ~5 years apart in the COPDGene (Genetic Epidemiology of COPD) study. Multivariable logistic regression assessed associations with ILA progression, and Cox proportional hazards assessed the relationship between ILA progression and mortality. Measurements and Main Results: A total of 4,373 participants had serial CT scans, and 544 (12%) had ILAs on at least one; of those, 391 (72%) had imaging visual progression, and 153 (28%) did not. Specific imaging features were associated progression (e.g., traction bronchiectasis; odds ratio, 3.1; 95% confidence interval [CI], 1.3-7.3; *P* = 0.003). Among those with ILAs, baseline quantitative measures (QIAs and FVC) were not associated with progression; however, visual imaging progression was associated with increased longitudinal change of QIAs (mean difference, 6.5%; 95% CI, 4.9-8.1%; *P* < 0.0001). In ILAs, QIA increase was associated with an increased rate of

mortality independent of FVC decline (hazard ratio, 1.05; 95% CI, 1.01-1.09; *P* = 0.009). Conclusions: Baseline quantitative measures (QIAs and FVC) were not associated with visual ILA progression; however, longitudinal change in QIAs was correlated with imaging progression and adverse clinical outcomes.

Keywords: interstitial lung abnormalities; interstitial lung disease; pulmonary fibrosis.

Comment in

- Oh to Be Watched Over by Machines of Loving Grace: Promise and Pitfalls of Quantitative Computed Tomography in Early Interstitial Lung Disease Detection.

Jacob J, Podolanczuk AJ.Am J Respir Crit Care Med. 2025 Oct;211(10):1736-1737. doi: 10.1164/rccm.202508-1946ED.PMID: 40845303 No abstract available.

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25

Review

Expert Rev Respir Med

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. 2025 Oct;19(10):1063-1079.

doi: 10.1080/17476348.2025.2526775. Epub 2025 Jul 9.

Research progress in early states of chronic obstructive pulmonary disease: a narrative review on PRISm, pre-COPD, young COPD and mild COPD

Yuepeng Li [1 2], Xiaolong Tang [3], Rui Zhang [2 4], Yi Lei [2 4], Denian Wang [5], Zhoufeng Wang [1 2 6], Weimin Li [1 2 6 7]

Affiliations Expand

- PMID: 40624819

- DOI: 10.1080/17476348.2025.2526775

Abstract

Introduction: Chronic obstructive pulmonary disease (COPD) represents a significant global health burden. This review addresses the critical need for early identification and intervention by investigating the current research landscape in the early stages of the disease.

Areas covered: This review synthesizes the literature on the definitions, epidemiology, diagnostic approaches, prognosis, and management strategies for early COPD states, including preserved ratio impaired spirometry (PRISm), pre-COPD, young COPD, and mild COPD. A comprehensive literature search was conducted in PubMed and Web of Science up to October 2024.

Expert opinion: Experts believe that while conceptualizing early COPD offers transformative potential, progress is hampered by ambiguous diagnostic criteria and limitations in biomarkers. Future efforts should prioritize precision prevention through deep phenotyping and technological integration, acknowledging the risk of disparities.

Keywords: Chronic obstructive pulmonary disease; PRISm; Pre-COPD; mild COPD; young COPD.

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Eur J Intern Med

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. 2025 Oct:140:106389.

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Efficacy and safety of beta-blockers in patients with comorbid chronic obstructive pulmonary disease and cardiovascular disease

Tejuss Kakarla [1], Yash Vardhan Trivedi [2], Parth Munjal [3], Avi Kumar [4], Rohit Jain [5]

Affiliations Expand

- PMID: 40544070

- DOI: 10.1016/j.ejim.2025.06.018

No abstract available

Keywords: Cardioselective beta-blockers; Cardiovascular disease (CVD); Chronic obstructive pulmonary disease (COPD); Inflammation; Major adverse cardiac events; pulmonary function tests.

Conflict of interest statement

Declaration of competing interest All authors declare that they have no conflict of interests, affiliations with or involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this manuscript.

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Review

Expert Rev Respir Med

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. 2025 Oct;19(10):1081-1092.

doi: 10.1080/17476348.2025.2522754. Epub 2025 Jun 25.

Effect of fixed-dose tiotropium/olodaterol combined therapy on exercise-related outcome measures in individuals with chronic obstructive pulmonary disease: a systematic review and meta-analysis

Sanaa A Alsubheen [1], Myanca Rodrigues [1 2], Kristian Thorlund [1]

Affiliations Expand

- PMID: 40530954

- DOI: 10.1080/17476348.2025.2522754

Abstract

Introduction/objectives: This systematic review aimed to summarize the evidence on the effect of the fixed-dose combination of tiotropium/olodaterol (Tio/Olo 5/5 µg FDC) on exercise-related outcome measures.

Methods: We included randomized clinical trials (RCTs) from four databases that investigated the effectiveness of Tio/Olo 5/5 µg FDC on exercise tolerance, breathlessness, lung function, and physical activity from inception to October 2024.

Results: Findings from eight RCTs indicated that Tio/Olo 5/5 µg FDC was superior to Tio 5 µg or placebo for the following outcomes: exercise tolerance [Tio 5 µg: 3 RCTs, mean difference (MD) = 16.6 m, 95% CI: 5.2-28.1, $p < 0.001$], exercise endurance time [Placebo: 2 RCTs, SMD = 0.29, 95% CI: 0.19-0.39, $p = p < 0.001$], inspiratory capacity [Tio 5 µg: 3 RCTs, MD = 0.13 L, 95% CI: 0.07-0.19, $p < 0.001$], and forced expiratory volume in 1 second (FEV_1) [Tio 5 µg: 4 RCTs, MD = 0.12 L, 95% CI: 0.11-0.14, $p < 0.001$; Placebo: 2 RCTs, MD = 0.33 L, 95% CI: 0.3-0.35, $p < 0.001$], with no effect on physical activity levels.

Conclusion: Tio/Olo 5/5 µg FDC compared to Tio 5 µg or placebo may improve exercise tolerance and lung function, but not physical activity levels in COPD.

Protocol registration: The systematic review protocol is registered on PROSPERO (International Prospective Register of Systematic Reviews): number CRD42024598553.

Keywords: Breathlessness; chronic obstructive pulmonary disease; exercise tolerance; olodaterol; physical activity; pulmonary function; tiotropium.

Supplementary info

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Observational Study

Nitric Oxide

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. 2025 Oct:158:62-66.

doi: 10.1016/j.niox.2025.06.003. Epub 2025 Jun 11.

Appearances can be deceiving: differences in FeNO values among COPD and severe asthmatic patients stratified according to peripheral eosinophilic count

Claudio Candia [1], Silvestro Ennio D'Anna [2], Maria D'Amato [3], Francesco Cappello [4], Andrea Motta [5], Mauro Maniscalco [6]

Affiliations Expand

- PMID: 40513768

- DOI: 10.1016/j.niox.2025.06.003

Abstract

Eosinophilic COPD (eCOPD) and eosinophilic severe asthma (eSA) appear to share relevant clinical features, including responsiveness to steroids and higher exacerbation rates. However, data on the expression of T2-high inflammation biomarkers and, in particular comparison of fractional exhaled nitric oxide (FeNO) levels between the two diseases is lacking. The aim of the current retrospective observational study was to investigate whether FeNO values might differ between eCOPD and eSA patients. Sixty patients with SA and 40 with COPD were enrolled. They were divided in four groups: eosinophilic COPD (eCOPD) and eosinophilic severe asthma (eSA), if the blood eosinophil count (BEC) was ≥300 cells/μL; non-eosinophilic COPD (neCOPD) and non-eosinophilic severe asthma (neSA) if the BEC was <100 cells/μL. FeNO values, lung function and demographic data were compared between the groups. Overall, COPD patients were older, with a higher prevalence of males and had more impaired lung function than asthmatic patients. When comparing FeNO levels among the four groups, a significant difference was found between eCOPD and eSA patients (p = 0.001), as well as eCOPD and neCOPD patients (p = 0.021). Finally, neCOPD patients showed significantly lower FeNO values in comparison with neSA patients (p = 0.005). Such results were confirmed after adjusting for age, sex, and smoking history. Our preliminary results hint at the possibility that, despite an apparently similar eosinophilic phenotype, eCOPD patients might present with different FeNO values in comparison with eSA patients, possibly reflecting different underlying disease mechanisms.

Keywords: Biomarker; COPD; Disability; Eosinophil; Exhaled nitric oxide; FeNO; Occupational medicine; Outcome; Precision medicine; Severe asthma.

Conflict of interest statement

Declaration of competing interest M.M. reports grants for his institution from AstraZeneca and GlaxoSmithKline, and payments or honoraria for presentations or

educational events from GlaxoSmithKline, Chiesi, and Damor Farmaceutici. All these are outside the scope of this manuscript. All the other Authors declair no conflicts of interest.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links

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Cite

29

J Asthma

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. 2025 Oct;62(10):1690-1697.

doi: 10.1080/02770903.2025.2513053. Epub 2025 Jun 4.

Single-inhaler triple therapy improves small airway dysfunction in moderate to severe asthma and asthma-COPD overlap: a retrospective cohort study

Yumi Fujita [1], Toshihiro Shirai [1], Taisuke Akamatsu [1], Shogo Sakurai [1]

Affiliations Expand

- **PMID: 40433997**

- **DOI: 10.1080/02770903.2025.2513053**

Abstract

Background: Medium- or high-dose fluticasone furoate (FF)/vilanterol (VI)/umeclidinium (UMEC) is associated with an improvement in forced expiratory volume in one second (FEV1), a marker of large airway dysfunction. However, the effect of FF/VI/UMEC on small airway dysfunction (SAD) remains unknown.

Objective: To clarify the effect of FF/VI/UMEC on SAD in moderate to severe asthma and asthma-chronic obstructive pulmonary disease overlap (ACO) in a retrospective cohort study.

Methods: Subjects included 18 moderate to severe asthma and ACO patients who switched from inhaled corticosteroid/long-acting-β2 agonist (ICS/LABA) to FF/VI/UMEC. Asthma Control Test (ACT), Asthma Control Questionnaire (ACQ),

blood eosinophil counts, total IgE, fractional exhaled nitric oxide, spirometry, and oscillometry were measured and compared before and after FF/VI/UMEC treatment.

Results: Markers of SAD, including forced vital capacity (FVC), forced expiratory flow at 25-75% of FVC, respiratory system reactance at 5 Hz (X5), resonant frequency, and low-frequency reactance area (AX), improved significantly after the induction of SITT, in addition to ACT, ACQ, FEV1, and FEV1/FVC. Improvements in FEV1, X5, and AX correlated with improvements in ACT, and improvements in FEV1 and FEV1/FVC correlated with improvements in ACQ.

Conclusion: FF/VI/UMEC improved SAD, and its improvement was correlated with improved asthma control in moderate to severe asthma and ACO patients.

Keywords: Asthma; asthma-COPD overlap; oscillometry; single-inhaler triple therapy; small airway dysfunction.

Supplementary info

MeSH terms, SubstancesExpand

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Cite

30

Ann Am Thorac Soc

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. 2025 Oct;22(10):1493-1503.

doi: 10.1513/AnnalsATS.202408-882OC.

The Epidemiology of Combined Pulmonary Fibrosis and Emphysema among Mid-Atlantic Veterans

Daniel M Guidot [1 2], Danielle Seaman [3], Roy A Pleasants [4 5], Joel C Boggan [6 7], Armando Bedoya [8 2], Aparna C Swaminathan [8 2 9], Matthew L Maciejewski [10 11], Bhavika Kaul [12 13 14], Robert M Tighe [8 2]

Affiliations Expand

- **PMID: 40388887**

- **DOI: 10.1513/AnnalsATS.202408-882OC**

Abstract

Rationale: Combined pulmonary fibrosis and emphysema (CPFE) is a unique phenotype with important prognosis and management implications in patients with idiopathic pulmonary fibrosis (CPFE-IPF) and other forms of fibrotic interstitial lung disease (CPFE-fILD). However, the epidemiology of CPFE is not well characterized, creating a barrier to clinical research needed to advance our understanding and management. Objectives: To investigate the incidence, prevalence, and long-term outcomes of CPFE among a regional cohort of veterans. Methods: We retrospectively reviewed records for veterans in the Veterans Affairs Mid-Atlantic Health Care Network (includes North Carolina and Virginia) with International Classification of Disease, Ninth Revision, codes for pulmonary fibrosis between January 1, 2008, and December 31, 2015. We stratified pulmonary fibrosis into IPF and fILD using diagnostic codes and chart review. We reviewed computed tomography reports and classified cases as having CPFE according to documented emphysema; a thoracic radiologist overread a subset of scans for validation. We calculated annual incidence and prevalence of CPFE and compared characteristics between veterans with CPFE and veterans with fibrosis without emphysema using chi-square tests, Mann-Whitney *U* tests, and paired *t* tests. We used Kaplan-Meier and Cox models to determine overall survival from diagnosis. Results: We identified 2,414 veterans with fILD. Among 1,880 veterans with IPF, 734 (39.0%) had CPFE-IPF; among 534 veterans with fILD, 194 (36.3%) had CPFE-fILD. Agreement between computed tomography reports and thoracic radiologist review was high (kappa = 0.78). Annual CPFE prevalence ranged from 71 to 100 per 100,000 veterans, and incidence ranged from 16 to 39 per 100,000 veterans. CPFE was associated with male sex, lower body mass index, greater tobacco history, higher forced vital capacity, reduced forced expiratory volume in 1 second/forced vital capacity ratio, reduced diffusing capacity of the lung for carbon monoxide, and increased oxygen use. CPFE was associated with increased mortality in unadjusted models. However, after adjustment for age, sex, and body mass index, CPFE was not associated with survival for CPFE-IPF versus IPF without emphysema (hazard ratio, 1.13; 95% confidence interval, 0.96-1.33) as well as CPFE-fILD versus fILD without emphysema (hazard ratio, 1.16, 95% confidence interval, 0.82-1.63). Conclusions: CPFE has a high incidence and prevalence among veterans with IPF and fILD and has a distinct phenotype with diagnostic and therapeutic implications. Further studies investigating diagnosis, treatment considerations, and long-term impacts in CPFE are merited.

Keywords: chronic obstructive lung disease; epidemiology; idiopathic pulmonary fibrosis; interstitial lung disease; pulmonary emphysema.

Comment in

- **More Than a Code: Getting the Epidemiology of Fibrotic Interstitial Lung Disease Right.**

Meng Q, Dempsey TM.Ann Am Thorac Soc. 2025 Oct;22(10):1463-1464. doi: 10.1513/AnnalsATS.202508-858ED.PMID: 40854091 No abstract available.

Supplementary info

MeSH terms, Grants and fundingExpand

31

Review

Arch Phys Med Rehabil

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. 2025 Oct;106(10):1594-1602.

doi: 10.1016/j.apmr.2025.05.001. Epub 2025 May 7.

Optimal Exercise Modalities and Doses for Alleviating Dyspnea Symptoms and Enhancing Exercise Capacity in Patients With Chronic Obstructive Pulmonary Disease: A Network and Dose-Response Meta-analysis

Jingyi Xie [1], Jindong Guo [2], Bin Wang [3]

Affiliations Expand

- PMID: 40345474

- DOI: 10.1016/j.apmr.2025.05.001

Abstract

Objective: To investigate the optimal exercise modalities and doses for alleviating dyspnea and enhancing exercise capacity in patients with chronic obstructive pulmonary disease (COPD).

Data sources: PubMed, Cochrane, Embase, and Web of Science were searched until June 2024.

Study selection: Randomized controlled trials on dyspnea and exercise capacity in patients with COPD were included.

Data extraction: Exercises were compared using a network and dose-response meta-analysis. Two authors independently extracted the data and assessed bias risk.

Data synthesis: The study included 46 randomized controlled trials (2363 participants). Continuous aerobic training (mean difference [MD]=55.2; 95% credible interval [CrI], 28.1-84.5; Grading of Recommendations Assessment, Development and Evaluation [GRADE]: Low), interval training (MD=84.5; 95% CrI, 24.6-145; GRADE: Low), Qigong (MD=33.3; 95% CrI, 10.4-58.1; GRADE: Low), and resistance training (MD=41.5; 95% CrI, 7.27-77.7; GRADE: Low) improved 6-minute walk distance (6MWD). Qigong (MD=-8.20; 95% CrI, -15.6 to -1.50; GRADE: Low) and yoga (MD=-28.3; 95% CrI, -48.1 to -8.61; GRADE: Low) showed significant improvements in St. George's Respiratory Questionnaire (SGRQ). Resistance training (MD=12.1; 95% CrI, 4.62-18.7; GRADE: Low) correlated positively with forced expiratory volume in 1 second (FEV1), while Qigong correlated positively with forced vital capacity (FVC) (MD=0.378; 95% confidence interval, 0.087-0.620; GRADE: Low). Interval training, yoga, resistance training, and Qigong ranked the highest in 6MWD, SGRQ, FEV1, and FVC. The dose-response curve revealed an increasing trend in the effect of exercise intensity on enhancing 6MWD with intensified exercise levels. Regarding SGRQ scores, the optimal effect was observed at an exercise intensity of 620 metabolic equivalent of task (MET)-min/wk (MD=-7.07, 95% CrI, -12.23 to -1.87). The optimal exercise intensity was 350 MET-min/wk for FEV1 (MD=0.44, 95% CrI, 0.09-0.80) and FVC (MD=0.44, 95% CrI, 0.09-0.80).

Conclusions: Low quality evidence shows that interval training, yoga, resistance training, and Qigong effectively improved dyspnea and exercise capacity in patients with COPD. Optimal exercise doses vary across outcomes, necessitating personalized adjustments based on health status.

Keywords: Chronic obstructive pulmonary disease; Exercise; Network meta-analysis; Rehabilitation.

Supplementary info

Publication types, MeSH termsExpand

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Cite

32

Editorial

Am J Respir Cell Mol Biol

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. 2025 Oct;73(4):487-488.

doi: 10.1165/rcmb.2025-0235ED.

A Breath of Fresh Insight: Targeting CXCR4 in Early Chronic Obstructive Pulmonary Disease

Rebecca E Bignold [1], Jill R Johnson [1]

Affiliations Expand

- PMID: 40315390

- DOI: 10.1165/rcmb.2025-0235ED

No abstract available

Comment on

- CXCR4 Blockade Alleviates Pulmonary and Cardiac Outcomes in Early Chronic Obstructive Pulmonary Disease.

Dupin I, Henrot P, Maurat E, Abohalaka R, Chaigne S, El Hamrani D, Eyraud E, Prevel R, Esteves P, Campagnac M, Dubreuil M, Cardouat G, Bouchet C, Ousova O, Dupuy JW, Trian T, Thumerel M, Bégueret H, Girodet PO, Marthan R, Zysman M, Freund-Michel V, Berger P.Am J Respir Cell Mol Biol. 2025 Oct;73(4):530-544. doi: 10.1165/rcmb.2024-0303OC.PMID: 40198797

Supplementary info

Publication types, Grants and fundingExpand

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33

Am J Respir Cell Mol Biol

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. 2025 Oct;73(4):530-544.

doi: 10.1165/rcmb.2024-0303OC.

CXCR4 Blockade Alleviates Pulmonary and Cardiac Outcomes in Early Chronic Obstructive Pulmonary Disease

Isabelle Dupin [1 2], Pauline Henrot [1 3], Elise Maurat [1], Reshed Abohalaka [1 4], Sébastien Chaigne [1], Dounia El Hamrani [1], Edmée Eyraud [1], Renaud Prevel [1 5], Pauline

Esteves [1], Maryline Campagnac [1], Marielle Dubreuil [1], Guillaume Cardouat [1], Clément Bouchet [1], Olga Ousova [1], Jean-William Dupuy [1 6], Thomas Trian [1], Matthieu Thumerel [1 7], Hugues Bégueret [1 8], Pierre-Olivier Girodet [1 9], Roger Marthan [1 3], Maeva Zysman [1 10], Véronique Freund-Michel [1], Patrick Berger [1 3]

Affiliations Expand

- PMID: 40198797

- DOI: 10.1165/rcmb.2024-0303OC

Abstract

Chronic obstructive pulmonary disease (COPD) is a prevalent respiratory disease lacking effective treatment. Focusing on early COPD should help to discover disease modifying therapies. We examined the role of the CXCL12/CXCR4 axis in early COPD using human samples and murine models. Blood samples and lung tissues from both individuals with early COPD and controls were analyzed for CXCL12 and CXCR4 levels. To generate an early-like COPD model, 10-week-old male C57BL/6J mice were exposed to cigarette smoke for 10 weeks and intranasal instillations of polyinosinic-polycytidylic acid (poly(I:C)) for the last 5 weeks to mimic exacerbations. The number of cells expressing CXCR4 was increased in the blood of individuals with COPD, as well as in the blood of exposed mice. Lung CXCL12 expression was higher in both patients with early COPD and exposed mice. Exposed mice presented mild airflow obstruction, peribronchial fibrosis, and right heart thickening. The density of fibrocyte-like cells expressing CXCR4 increased in the bronchial submucosa of these mice. Conditional inactivation of CXCR4, as well as pharmacological inhibition of CXCR4 with plerixafor injections, improved lung function, reduced inflammation, and protected against cigarette smoke and poly(I:C)-induced airway and cardiac remodeling. $CXCR4^{-/-}$-treated and plerixafor-treated mice also had fewer CXCR4-expressing circulating cells and a lower density of peribronchial fibrocyte-like cells. We demonstrate that targeting CXCR4 has beneficial effects in an animal model mimicking early COPD. Although these preclinical findings are encouraging, further research is needed to explore the potential for transferring these insights into clinical applications, including drug repurposing.

Keywords: COPD pathology; cytokine biology; macrophage biology.

Comment in

- A Breath of Fresh Insight: Targeting CXCR4 in Early Chronic Obstructive Pulmonary Disease.

Bignold RE, Johnson JR.Am J Respir Cell Mol Biol. 2025 Oct;73(4):487-488. doi: 10.1165/rcmb.2025-0235ED.PMID: 40315390 No abstract available.

Supplementary info

MeSH terms, Substances, Grants and fundingExpand

Full text links

34

Multicenter Study

J Atheroscler Thromb

. 2025 Oct 1;32(10):1235-1250.

doi: 10.5551/jat.65451. Epub 2025 Apr 2.

Sex Differences Regarding the Risk of Incident Venous Thromboembolism in Hospitalized Patients with an Acute Exacerbation of Chronic Obstructive Pulmonary Disease

Jiaqi Pu [1], Qun Yi [1,2], Yuanming Luo [3], Hailong Wei [4], Huiqing Ge [5], Huiguo Liu [6], Jianchu Zhang [7], Xianhua Li [8], Pinhua Pan [9], XiuFang Xie [8], Menggiu Yi [10], Lina Cheng [10], Hui Zhou [11], Jiarui Zhang [1], Lige Peng [1], Jiaxin Zeng [1], Xueqing Chen [1], Haixia Zhou [1]; MAGNET AECOPD Registry Investigators

Affiliations Expand

- PMID: 40175131

- DOI: 10.5551/jat.65451

Free article

Abstract

Aims: Sex differences in the risk of venous thromboembolism (VTE) among patients with an acute exacerbation of chronic obstructive pulmonary disease (AECOPD) have so far only been sparsely described. This study aimed to investigate the differences in the risk of VTE events between male and female AECOPD patients and to determine whether any specific risk factors for VTE vary between the sexes.

Methods: We prospectively enrolled patients hospitalized for AECOPD from ten medical centers in China. The primary outcome was the occurrence of VTE. Univariate and multivariate logistic regression analyses were conducted to determine whether sex was an independent risk factor for VTE and also to identify any sex-specific risk factors.

Results: In total, 13,664 patients were included. VTE occurred in 5.5% of females and 3.3% of males (P＜0.001). A multivariate logistic regression analysis identified female sex as an independent risk factor for VTE in patients with AECOPD (odds ratio [OR] = 1.439, 95% confidence interval [CI] = 1.177-1.759, P＜0.001) after adjusting for confounding factors. Common risk factors for both sexes included age, chronic heart failure, severe lung disease, stroke, a recent surgical history, a history of VTE, and respiratory failure. Additional risk factors unique to males were sepsis (OR = 9.514, 95% CI = 4.513-20.056, P＜0.001), varicose veins (OR = 6.170, 95% CI = 3.237-11.763, P＜0.001), and rheumatological disorders (OR = 2.677, 95% CI = 1.184-6.052, P = 0.018). No sex-specific risk factors were identified for females.

Conclusion: Female sex was found to be an independent risk factor for VTE and some sex-specific risk factors exist among inpatients with AECOPD. These findings highlight the importance of considering sex and sex-related factors when assessing the VTE risk in AECOPD patients.

Keywords: Acute exacerbation of chronic obstructive pulmonary disease; Risk factors; Sex differences; Venous thromboembolism.

Supplementary info

Publication types, MeSH termsExpand

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

1

Review

J Eval Clin Pract

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. 2025 Oct;31(7):e70283.

doi: 10.1111/jep.70283.

Silent Dangers in Elderly Pharmacotherapy: The Interplay of Polypharmacy, Multimorbidity, and Drug Interactions

N N Ngcobo [1]

Affiliations Expand

- **PMID: 41025835**

- PMCID: PMC12482850

- DOI: 10.1111/jep.70283

Abstract

Background: Pharmacological therapy in older persons is inherently complex due to the interplay of age-related physiological changes, multimorbidity, and polypharmacy. These factors increase the vulnerability of elderly patients to drug interactions and adverse drug reactions.

Aim: This review aims to examine the mechanisms, causes, and consequences of drug interactions in older persons, and to highlight strategies to optimise pharmacological therapy in this population.

Methods: A narrative review of current literature was conducted, focusing on studies that address age-related pharmacological changes, multimorbidity, polypharmacy, and drug-drug interactions in elderly patients.

Results: Findings from the literature indicate that drug interactions represent one of the most preventable medical errors in older persons' pharmacotherapy. The global scale of this problem highlights the need for increased awareness and collaborative approaches among healthcare providers.

Conclusion: Improving the quality of pharmacotherapy in older adults requires a concerted effort to prevent drug interactions, optimise prescribing practices, and ensure patient safety. Collaborative interventions can reduce adverse drug events and enhance therapeutic outcomes in elderly care.

Keywords: elderly persons; multimorbidity; pharmacological interactions; pharmacotherapy; polypharmacy.

Conflict of interest statement

The author declares no conflict of interest.

- 129 references

Supplementary info

Publication types, MeSH termsExpand

Full text links

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2

Review

Drugs Aging

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. 2025 Oct;42(10):933-943.

doi: 10.1007/s40266-025-01243-z. Epub 2025 Sep 4.

Polypill Strategies for Cardiovascular Prevention in Older Adults: Evidence, Opportunities, and Implementation Challenges

Ryan Cheikhali [1], Victoria Maksymiuk [1], Sara Elattar [1], Amro Aglan [2], Wilbert Aronow [3]

Affiliations Expand

- PMID: 40906327

- DOI: 10.1007/s40266-025-01243-z

Abstract

Cardiovascular disease remains the leading cause of morbidity and mortality among older adults, who often face unique challenges in preventive care due to multimorbidity, frailty, and polypharmacy. The polypill, a fixed-dose combination of multiple cardiovascular medications, has emerged as a promising strategy to improve adherence, simplify treatment, and reduce the burden of major cardiovascular events. This review aims to synthesize current evidence supporting polypill use in both primary and secondary prevention, with a particular focus on older populations. Landmark clinical trials such as TIPS, HOPE-3, PolyIran, and SECURE have demonstrated favorable outcomes related to blood pressure and lipid reduction, medication adherence, and cardiovascular event prevention. In addition, real-world data suggest improved cost-effectiveness and feasibility across diverse healthcare settings. Despite these benefits, implementation remains limited by barriers including inflexible dosing, provider hesitancy, variable guideline endorsements, and regulatory challenges. Special considerations in geriatric populations such as heightened sensitivity to adverse drug reactions and the need for individualized care further underscores the importance of thoughtful integration into practice. As the global population ages, strategic adoption of polypill-based prevention can help address health disparities, streamline cardiovascular care, and improve outcomes in older adults worldwide.

Conflict of interest statement

Declarations. Funding: No external funding was used in the preparation of this manuscript. Conflict of interest: Ryan Cheikhali MD, Victoria Maksymiuk MD, Sara Elattar MBBCh, Amro Aglan MD, and Wilbert Aronow MD declare that they have no potential conflicts of interest that might be relevant to the contents of this manuscript. Wilbert Aronow MD is an Editorial Board member of Drugs & Aging. Wilbert Aronow MD was not involved in the selection of peer reviewers for the manuscript nor any of the subsequent editorial decisions. Authors' contributions: Ryan Cheikhali MD—conceptualization, supervision, writing, reviewing and editing. Victoria Maksymiuk MD—writing. Sara Elattar MBBCh—writing. Amro Aglan MD—conceptualization, supervision, reviewing and editing. Wilbert Aronow MD—supervision. Data availability statement: Data sharing is not applicable to this article as no datasets were generated for this manuscript. Ethics approval: Not applicable. Code availability: Not applicable. Consent to participate: Not applicable. Consent for publication: Not applicable.

- **44 references**

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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Cite

3

J Psychosom Res

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. 2025 Oct:197:112368.

doi: 10.1016/j.jpsychores.2025.112368. Epub 2025 Aug 23.

Psychiatric multimorbidity in heart failure

Kenneth E Freedland [1], Judith A Skala [2], Brian C Steinmeyer [2], Robert M Carney [2], Michael W Rich [3]

Affiliations Expand

- **PMID: 40865247**

- **DOI: 10.1016/j.jpsychores.2025.112368**

Abstract

Objective: There have been numerous studies of specific psychiatric comorbidities such as major depression in patients with heart disease, but there have been relatively few studies of psychiatric multimorbidity in these patients. The purpose of this cross-sectional study was to investigate the prevalence and correlates of psychiatric multimorbidity in patients with heart failure (HF).

Methods: Patients who had been hospitalized with HF were enrolled in this cross-sectional study within 30 days of hospital discharge and interviewed within two weeks after enrollment. Participants completed the NetSCID-5 diagnostic interview, a social determinants of health (SDOH) interview, and perceived stress and health-related quality of life questionnaires.

Results: A total of 362 patients completed the interview. The maximum possible lifetime comorbidity count was 11 but the observed maximum was 8; the mean (SD) count was 1.48 (1.63). A total of 135 (37 %) patients had no history of any psychiatric disorder, 97 (27 %) had a lifetime history of a single disorder, and 130 (36 %) had ≥2 lifetime disorders. Higher numbers of psychiatric disorders were associated with younger age, more exposure to SDOH, higher perceived stress, and chronic obstructive pulmonary disease.

Conclusion: Psychiatric multimorbidity is prevalent in patients with HF and is associated with worse medical and social health status. New studies of the consequences or treatment of specific psychiatric comorbidities in patients with heart disease should take psychiatric multimorbidity into account, and further research on psychiatric multimorbidity per se is needed.

Keywords: Comorbidity; Heart failure; Mental disorders; Multimorbidity; Psychological; Quality of life; Social determinants of health; Stress.

Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Kenneth E. Freedland reports financial support was provided by National Heart Lung and Blood Institute and by The Foundation for Barnes-Jewish Hospital. I have reviewed manuscripts for Journal of Psychosomatic Research but I do not serve on the editorial board. The other 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 termsExpand

Full text links

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Cite

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Multicenter Study

Adv Ther

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. 2025 Oct;42(10):5148-5163.

doi: 10.1007/s12325-025-03333-1. Epub 2025 Aug 19.

Epidemiology Landscape and Impact of Overweight and Obesity in Adults: Multi-country Results from the IMPACT-O Study

Esther Artime [1], Erik Spaepen [2], Sarah Zimner-Rapuch [3], Anastasia Lampropoulou [3], Atif Adam [4], Xiaoyu Lin [4], Mengyuan Shang [4], Sarah Seager [4], Carel W Le Roux [5], Dror Dicker [6 7]

Affiliations Expand

- PMID: 40828349

- PMCID: PMC12474581

- DOI: 10.1007/s12325-025-03333-1

Abstract

Introduction: To estimate the recording rates and impact of overweight/obesity across selected countries in Europe and Asia-Pacific.

Methods: IMPACT-O was a retrospective cohort study of electronic medical records and claims databases from France, Germany, Italy, Spain, the UK, Australia, and Japan. Recording levels and the number of adults with overweight/obesity [based on diagnostic codes and/or body mass index (BMI)] during 2018-2022 were estimated. BMI thresholds/categories and obesity-related complications (ORCs) were described for adults with ≥ 1 BMI record of ≥ 25.0 kg/m^2 and ≥ 12 months observation before the index date.

Results: The number of active subjects across databases ranged from 1,203,674 to 22,413,902. BMI was recorded for 4.8-38.9% of active patients. The number of adults with overweight/obesity ranged from 3.5% in Australia to 24.9% in the UK. The percentage of individuals with BMI > 25 to < 30 kg/m^2 ranged from 43.6% in Spain to 77.9% in Japan; the percentage with BMI ≥ 30.0 kg/m^2 ranged from 22.1% in Japan to 54.8% in Spain. Among those with overweight/obesity, the percentage with diagnosis codes in their records ranged from 2.9% in France to 50.1% in Germany. Most (59.6-85.0%) individuals had ≥ 1 ORC; 35.9-65.8% had multimorbidity. The most

frequently recorded ORCs were hypertension, dyslipidemia, depression, and type 2 diabetes.

Conclusion: Only a small proportion of people with overweight/obesity are formally diagnosed in healthcare databases. Most present with ≥ 1 ORC, commonly hypertension, dyslipidemia, depression, and type 2 diabetes.

Keywords: Cardiovascular disease; Databases; Epidemiology; Obesity; Overweight.

Plain language summary

This study evaluated databases from seven countries (France, Germany, Italy, Spain, the UK, Australia, and Japan) to understand how individuals with overweight or obesity are recognized and recorded, and what health issues they face. The study looked at data from 2018 through 2022, focusing on adults who had at least one body mass index (BMI) measurement of 25 kg/m^2 or higher and a year of medical history on file. The study found that BMI was recorded for only 5–39% of patients, depending on the country. Among those with a BMI record, the proportion of adults classified with overweight or obesity varied from 3.5% in Australia to 25% in the UK. Of these, the majority were overweight (BMI between 25 and 30 kg/m^2), with proportions ranging from 44% in Spain to 78% in Japan. The rest had a BMI of 30 kg/m^2 or higher, from 22% in Japan to 55% in Spain. Only a small proportion of people with overweight/obesity had a coded diagnosis in their healthcare records. Most people (between 60% and 85%) with overweight or obesity also had at least one related health complication, and many had two or more complications. The most common problems were high blood pressure, high cholesterol levels, depression, and type 2 diabetes. Diagnosing obesity is the first step towards effective treatment, as under-recording of obesity in databases may lead to an underestimation of its impact, lower quality of care, and missed opportunities to provide early and effective medical support for obesity management.

Conflict of interest statement

Declarations. Conflict of Interest: Esther Artime and Sarah Zimner-Rapuch are employees and minor shareholders of Lilly and Company. Anastasia Lampropoulou was an employee and minor shareholder of Eli Lilly and Company at the time the work was conducted and is a current employee and minor shareholder of Novartis. Erik Spaepen is an external consultant of Eli Lilly and Company. Carel Le Roux has received consulting fees for advisory board participation from Eli Lilly, NovoNordisk, Johnson & Johnson, Boehringer Ingelheim, GI Dynamics, Herbalife, Altimmune, Irish Life Health, Roche and AstraZeneca; speaker fees from NovoNordisk, Herbalife, Johnson & Johnson, Eli Lilly, Boehringer Ingelheim, Rhythm Pharmaceuticals and Currax Pharmaceuticals; support for travel to/attending meetings from NovoNordisk, Herbalife, Johnson & Johnson, Eli Lilly and Boehringer Ingelheim; institutional grants from the Irish Research Council, Health Research Board, Science Foundation Ireland, and Anabio; and holds stock or stock options in Keyron and Beyond BMI. Dror Dicker has received royalties or licenses, consulting fees, speaker fees, and support for travel to/attending meetings from NovoNordisk, Eli Lilly and Boehringer Ingelheim; institutional grants from NovoNordisk and Eli Lilly; and institutional provision of goods (equipment, materials, drugs, etc.)/services from NovoNordisk. He has participated in advisory

boards for NovoNordisk, Eli Lilly and Boehringer Ingelheim. Atif Adam, Xiaoyu Lin, Mengyuan Shang, and Sarah Seager have no conflict of interest to declare. Ethical Approval: All analyses performed in this study were conducted in accordance with Data Use Agreement terms as specified by the data owners. For the databases for France, Germany, Italy, the UK, Australia, and Japan, there was no Institutional Review Board applicable to the usage and dissemination of the results of this study or required registration of the protocol with additional ethics oversight. For the database for Spain LPD, the Ethics Committee of the Hospital Clinic de Barcelona (Spain) reviewed and approved the protocol.

- 56 references
- 3 figures

Supplementary info

Publication types, MeSH termsExpand

Full text links

Proceed to details

Cite

5

J Am Med Dir Assoc

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. 2025 Oct;26(10):105800.

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Adverse Events in Older Hospitalized Patients With Cognitive Impairment

Bo Schouten [1], Fleur C W Visser [2], Marlise E A van Eersel [3], Hanneke Merten [1], Barbara C van Munster [4], Cordula Wagner [5]

Affiliations Expand

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Free article

Abstract

Objectives: As an increasing number of hospitalized inpatients are older and frail, cognitive impairment is becoming more common. Cognitive impairment may increase susceptibility to adverse events (AEs). This study aimed to identify the prevalence of AEs, potentially preventable AEs, and deaths in patients with and without cognitive impairment and the nature, causes, and prevention strategies.

Design: We analyzed data from 1959 records of a nationwide retrospective record review study of hospitalized older deceased patients.

Setting and participants: The cognitive impairment group included those with documented International Classification of Diseases, 10th Revision codes for delirium, dementia, mild cognitive impairment, and unspecified cognitive impairment.

Methods: Records were reviewed in 2 stages to assess AEs, their preventability, nature, causes, and prevention strategies.

Results: Of the 1959 included older patients, 428 patients (21.8%) were cognitively impaired. The Charlson comorbidity index was scored ≥5 in ≥90% of all patients. AE prevalence was 13.1% in patients without cognitive impairment vs 17.0% in cognitively impaired patients (P = .071). Potentially preventable AE prevalence was 4.0% in patients without cognitive impairment vs 5.1% in cognitively impaired patients (P = .369), and potentially preventable death prevalence was 3.3% vs 2.7%, respectively (P = .458). Cognitively impaired patients registered as delirium experienced more AEs than those with dementia. The nature of AEs in cognitively impaired patients was most often related to "other clinical management," that is, nursing clinical activities, nursing, and paramedical care. Organizational causes were more common in patients with cognitive impairment. Most AEs with a human cause were deemed potentially preventable in both groups. The recommended prevention strategies mainly included reflection and evaluation.

Conclusion and implications: This study shows no significant difference in AE prevalence between patients with documented cognitive impairment and those without; however, we did find differences in the nature and causes of AEs. Future research is needed to better understand the relationship among frailty, multimorbidity, cognitive impairment, and patient safety risks.

Keywords: CI; Dementia; cognitive dysfunction.

Conflict of interest statement

Disclosure The authors declare no conflicts of interest.

Supplementary info

MeSH termsExpand

Full text links

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Cite

6

Eur J Intern Med

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. 2025 Oct:140:106424.

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A person-centred clinical approach to the multimorbid patient with COPD

Bartolome R Celli [1], Leonardo M Fabbri [2], Abebaw M Yohannes [3], Nathaniel M Hawkins [4], Gerard J Criner [5], Jessica Bon [6], Marc Humbert [7], Christine R Jenkins [8], Leonardo Pantoni [9], Alberto Papi [10], Jennifer K Quint [11], Sanjay Sethi [12], Daiana Stolz [13], Alvar Agusti [14], Don D Sin [15]

Affiliations Expand

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Free article

Abstract

Most patients with a chronic disease are multimorbid. This is particularly important in patients with chronic obstructive pulmonary disease (COPD), who on average have five other identified comorbidities that independently impact their health and increase their mortality risk. Using a modified Delphi method, we selected the 20 most important diseases associated with COPD and clustered them into five domains: mental, respiratory, cardiovascular, metabolic and multiple organs loss of tissue. We then developed a systematic approach to characterise the impact and clinical presentation of individual diseases within each cluster, and to define the priority and timing of measurement of the potential markers of disease presence and severity. Given the absence of integrated guidelines to treat multimorbid patients, we reviewed and selected individual disease guidelines or recommendations that can be accessed for specific information related to the management of each disease. In addition, we built a multimorbidity 'Health Dashboard' that, completed by the patient or health practitioner, can help identify the presence and severity of comorbid diseases. By using a practical comprehensive approach, it is possible to identify and characterise important comorbid diseases in patients with COPD, and to implement management tools that should help improve their outcome. This expert consensus commentary summarises patient-centred recommendations to manage comorbidities in COPD patients, aiming to improve quality-of-life and reduce disease burden through a holistic approach. Prospective pragmatic trials comparing such an approach with

usual care for multimorbid patients with COPD including long-term follow-up are urgently needed.

Keywords: Chronic obstructive pulmonary disease; Comorbidity; Disease management.

Conflict of interest statement

Declaration of competing interest In addition to editorial support disclosed above, the authors have the following conflicts of interest: Bartolome R. Celli received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he received fees from GlaxoSmithKline and AstraZeneca for consulting, speaking at meetings and participating in advisory boards, from Menarini for consulting and speaking at meetings, from Sanofi Aventis for consulting and participating in advisory boards, from Axios for consulting, and from Chiesi and Regeneron for lectures, presentations, speakers bureaus, manuscript writing or educational events, support for attending meetings and/or travel from GlaxoSmithKline and Sanofi Aventis, and participated in a Data Safety Monitoring Board or Advisory Board for AZ Therapeutics, Sanofi Aventis, and Vertex. Leonardo M. Fabbri received consulting fees from Chiesi, GlaxoSmithKline, AstraZeneca, Novartis, and Verona Pharma, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Chiesi, GlaxoSmithKline, and Glemark, and participation in a Data Safety Monitoring Board or Advisory Board for Novartis, Chiesi and ICON. Abebaw M. Yohannes received consulting fees from Chiesi for participation in this project. He received support for attending a meeting from Theravance Bio Pharma limited, outside the scope of this manuscript. Nathaniel M. Hawkins declares a grant to his institution from AstraZeneca, consulting fees from AstraZeneca, and payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, and Novo-Nordisk. All are outside the scope of the current manuscript. Gerard J. Criner received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares grants or contracts to his institution from ALung Technologies Inc, American College of Radiology, American Lung Association, AstraZeneca, BioScale Inc, Boehringer Ingelheim, Breath Therapeutics Inc, COPD Foundation, Coridea/Zidan, Dr. Karen Burns/St. Michael's Hospital, Fisher & Paykel, Galapagos NV, GlaxoSmithKline, Lungpacer Medical Inc, NHLBI, Nuvaira Inc, PCORI, Pulmonary Fibrosis Foundation, Pulmonx, Philips Respironics Inc, Respivant Sciences, Spiration Inc, Steward St Elizabeth's Medical Center of Boston Inc, Veracyte Inc, Bellerophon Therapeutics, Regeneron, Clear Creek Bio Inc, Corvus Pharmaceuticals Inc, Eli Lilly and Company, Gilead Sciences, Incyte Corporation, Janssen Vaccines & Prevention B.V., Daniel Benjamin, Hoffmann-La Roche, Merck Sharp & Dohme Corp., Swedish Orphan Biovitrum, Aevi Genomic Medicine, LLC, a Cerecor company, Massachusetts General Hospital, Pfizer, and CalciMedica Inc, and consulting fees from Aerwave Medical Inc, Amgen, AstraZeneca, Bayer AG, Boehringer Ingelheim Pharmaceutical, BTG International, Broncus Medical, Chiesi Farmaceutici, CSA Medical, Eolo Medical, Fisher & Paykel, Gala Therapeutics, GlaxoSmithKline, Helios Medical, Hospicom Inc, Intuitive Surgical Inc, Merck, Medscape, LLC, Medtronic, Mereo Biopharma, NGM Biopharmaceuticals, Novartis Pharma AG, Olympus, PneumRx, Patara Pharma, Prometic BioTherapeutics, Philips

Respironics, Pulmonx, Regeneron Healthcare Solutions Inc, Respicant Sciences, ResMed, Sanofi US Services Inc, The Implementation Group, Verona Pharmaceuticals, and WebMD. Jessica Bon received consulting fees from Chiesi for participation in this project. She also declares consulting fees from Verona Pharma, GlaxoSmithKline, Genentech, ProPharma Group, Regeneron, and Sanofi, all outside the scope of the current manuscript. Marc Humbert declares grants to his institution from Gossamer and Merck, consulting fees from 35 Pharma, Aerovate, AOP Orphan, Chiesi, Ferrer, Gossamer, Janssen, Keros, Liquidia, Merck, Morphic, Novartis, Respira, Roivant, and United Therapeutics, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Janssen and Merck, and participation on a data safety monitoring board or advisory board for 35 Pharma, Aerovate, Janssen, Keros, Merck, Novartis, and United Therapeutics. All are outside the scope of the current manuscript. Christine R. Jenkins declares grants to her institution from AstraZeneca and Sanofi, consulting fees from AstraZeneca, GlaxoSmithKline, and Chiesi, payment or honoraria for lectures or educational events from AstraZeneca, GlaxoSmithKline, Sanofi, Novartis, and Chiesi, support for attending meetings and/or travel (only when an invited speaker) from AstraZeneca and GlaxoSmithKline, participation on advisory boards for AstraZeneca, GlaxoSmithKline, Chiesi, Sanofi, and Novartis, and an unpaid leadership or fiduciary role for the Lung Foundation Australia and the Asbestos and Dust Diseases Research Institute. All are outside the scope of the current manuscript. Leonardo Pantoni received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares consulting fees from Amicus and PlAM, outside the scope of the current manuscript. Alberto Papi receiving consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares payments to his institution from Chiesi, AstraZeneca, GlaxoSmithKline and Sanofi, consulting fees from Chiesi, AstraZeneca, GlaxoSmithKline, Sanofi, Avillion, Moderna, and Roche, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Chiesi, AstraZeneca, GlaxoSmithKline, Menarini, Zambon, Mundipharma, Sanofi, Iqvia, Avillion, Sanofi, Regeneron, Zambon, and participation on advisory boards for Chiesi, AstraZeneca, GlaxoSmithKline, Sanofi, Iqvia, Avillion, and Moderna. Jennifer K. Quint received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, she declares grants to her institution from the Medical Research Council, NIHR, Health Data Research, GlaxoSmithKline, Boehringer Ingelheim, AstraZeneca, Insmed, and Sanofi, and consulting fees from GlaxoSmithKline, Chiesi, and AstraZeneca. Sanjay Sethi received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares research grants to his institution from Chiesi, AstraZeneca, and Sanofi-Regeneron, royalties or licenses from Wolters Kluwer Health, consulting fees from AstraZeneca, Boehringer Ingelheim, Chiesi, and GlaxoSmithKline, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, and GlaxoSmithKline, and participation on a data safety monitoring board for Nuvaira, Boehringer Ingelheim, and Pulmonx. Daiana Stolz declares payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from AstraZeneca, Berline-Chemie/Menarini, Boehringer Ingelheim, Chiesi, CSL Behring, Curetis AG, GlaxoSmithKline, Merck, MSD, Novartis, Sanofi, Vifor, and Roche, participation on a data safety monitoring board or advisory board for AstraZeneca, Berline-Chemie/Menarini, Boehringer Ingelheim, Chiesi, CSL Behring, Curetis AG, GlaxoSmithKline, Merck, MSD, Roche,

Novartis, Sanofi, OM Pharma and Vifor, and that she is a current unpaid GOLD representative for Switzerland. All are outside the scope of the current manuscript. Alvar Agusti received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he reports grants to his institution from AstraZeneca, GlaxoSmithKline, and Menarini, received consulting fees from GlaxoSmithKline, AstraZeneca, Chiesi, Menarini, Zambon, MSD, and Sanofifor lectures. He also declares an unpaid position as the Chairman of the Board of Directors of GOLD. Don D. Sin received an investigator-initiated grant from Nextone paid to UBC, and honoraria for giving talks on COPD from AstraZeneca, GlaxoSmithKline, and Boehringer Ingelheim, and declares that he was chair of a data safety monitoring board for a NHLBI-sponsored trial and is Deputy Editor of the European Respiratory Journal. All are outside the scope of the current manuscript.

Supplementary info

MeSH termsExpand

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Maturitas

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Spirometric patterns associated with the progression of cardiometabolic diseases in middle-aged and older adults: A prospective cohort study

Nana Wang [1], Xuezhong Shi [1], Tianrun Wang [2], Xiaocan Jia [1], Zhixing Fan [3], Chaojun Yang [1], Yuping Wang [1], Jingwen Fan [1], Chenyu Zhao [1], Yali Niu [1], Yongli Yang [4]

Affiliations Expand

- PMID: 40782677

- DOI: 10.1016/j.maturitas.2025.108689

Abstract

Objective: To explore the associations between spirometric patterns and cardiometabolic diseases progression in middle-aged and older adults, and examine the mediating effects of levels of C-reactive protein and score on the atherogenic index of plasma.

Methods: Based on 320,795 participants from the UK Biobank, five spirometric patterns were defined using baseline measurements of forced expiratory volume in one second and forced vital capacity. The cardiometabolic diseases included type 2 diabetes, coronary heart disease, and stroke. Multistate model and mediation analysis were used for statistical analyses.

Results: During a median follow-up of 13.68 years, 37,053 participants developed at least one cardiometabolic disease, 3746 developed cardiometabolic multimorbidity, and 22,204 died. In the transition from baseline to first cardiometabolic diagnosis, the hazard ratios (95 % confidence intervals) compared with normal lung function were 1.14 (1.11, 1.17) for airflow obstruction, 1.17 (1.10, 1.23) for preserved ratio impaired spirometry alone, 1.21 (1.10, 1.32) for restrictive spirometric pattern alone, and 1.38 (1.33, 1.43) for the combined preserved ratio impaired spirometry with restrictive spirometric pattern. Combined preserved ratio impaired spirometry with restrictive spirometric pattern was also associated with a higher risk of progressing from first cardiometabolic disease to multimorbidity (hazard ratio: 1.21; 95 % confidence interval: 1.10, 1.33). The levels of C-reactive protein and score on the atherogenic index of plasma mediated 6.56 % to 15.74 % of the associations between spirometric patterns and cardiometabolic diseases.

Conclusions: Spirometric patterns exhibit differential effects throughout the progression of cardiometabolic diseases, and C-reactive protein and atherogenic index of plasma play a partial role in mediating these effects.

Keywords: Cardiometabolic diseases; Mediation analyses; Multistate model; Preserved ratio impaired spirometry; Restrictive spirometric pattern.

Conflict of interest statement

Declaration of competing interest The authors declare that they have no competing interest.

Supplementary info

MeSH terms, SubstancesExpand

Full text links

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Multicenter Study

Public Health

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Developing a list of chronic conditions using a Delphi method to study multimorbidity in primary care

Alexandre Malmartel [1], Juliette Pinot [2], Marie Ecollan [3], Nicolas De Chanaud [3], Jean-Claude Schwartz [3], Stéphanie Sidorkiewicz [4], Céline Buffel Du Vaure [4]

Affiliations Expand

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- **DOI: 10.1016/j.puhe.2025.105850**

Free article

Abstract

Objective: To develop a French-language list of chronic conditions to enable more detailed analyses of multimorbid patients in primary care in subsequent studies.

Study design: Delphi study followed by a multicentre cross-sectional study in French general practices.

Methods: The list development required a three-step procedure: 1) The development of a preliminary version of the list based on the International Classification of Primary Care-2 (ICPC-2): an expert panel of general practitioners participated in two Delphi rounds to assess the relevance of the items as "chronic conditions". 2) Testing the list with outpatients consecutively included in general practices. 3) A final Delphi round accounting for the results of the outpatient list experimentation.

Results: From the 726 items of the ICPC-2, 383 items were submitted to 12 experts. In the first Delphi round, 126 items were accepted and 81 excluded. During the second, 2 additional items were retained and 86 excluded. Then, the experts selected 22 supplementary items from the 88 remaining, and a preliminary list of 124 items has been established after grouping similar items. During the test phase, 16 physicians and 306 patients rated 98 items as "already listed", 58 as "unlisted" and 19 as "unsuitable". During the final Delphi round, the experts selected 11 more items among the unlisted and finalized the list at 135 items.

Conclusion: This list of 135 chronic conditions has been developed with a valid methodology. It is useable by physicians and will allow a more accurate study of multimorbidity in primary care.

Keywords: Chronic disease; Family practice; Multimorbidity; Surveys and questionnaires.

Supplementary info

Publication types, MeSH termsExpand

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Arch Gerontol Geriatr

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The impacts of multimorbidity trajectories and patterns on functional limitations over time in middle-aged and older adults

Yan Wu [1], Xiao Niu [2], Bosen Lv [1], Xiaohui Li [3], Weijing Wang [1], Wenjing Feng [4], Haiping Duan [5], Yili Wu [6]

Affiliations Expand

- **PMID: 40472743**

- **DOI: 10.1016/j.archger.2025.105919**

Abstract

Background: Although multimorbidity is a risk factor for functional limitations, few studies have simultaneously examined the impacts of multimorbidity trajectories and patterns on long-term functional limitations change. We aim to identify multimorbidity trajectories and patterns and explore their relationships with functional limitations in middle-aged and older adults.

Methods: This study included 6302 participants aged ≥50 from the English Longitudinal Study of Ageing survey 2008-2021. Group-based trajectory model was conducted to identify multimorbidity trajectories from 22 chronic conditions (2008-2014). Exploratory factor analysis was employed to assess multimorbidity pattern using data collected in 2014. The impacts of multimorbidity trajectories and patterns on the change in functional limitations across the subsequent 7 years (2014-2021) were examined through generalized estimating equation models.

Results: This study identified four multimorbidity trajectories: low-maintaining, new-increasing, moderate-increasing, and high-maintaining trajectory and four multimorbidity patterns: multi-system, cardiovascular, vision impairment, and metabolic-skeletal patterns. Across all multimorbidity trajectories and patterns, functional limitations showed sustained increases over time, with levels consistently higher than reference groups (all $P < 0.001$). There were significant interactions of multimorbidity trajectories and patterns with time, particularly for high-maintaining trajectory (T6:$\beta = -0.218$, $P = 0.007$; T7:$\beta = -0.271$, $P = 0.004$), multi-system pattern (T6:$\beta = -0.323$, $P = 0.001$; T7:$\beta = -0.593$, $P < 0.001$), and metabolic-skeletal pattern (T6:$\beta = -0.313$, $P < 0.001$; T7:$\beta = -0.481$, $P < 0.001$), indicating the high-maintaining multimorbidity trajectory, multi-system and metabolic skeletal patterns accelerated the progression of functional limitations.

Conclusions: Implement targeted preventive interventions and personalized health management strategies for high-risk multimorbidity patients to delay disability onset.

Keywords: Functional limitations; Generalized estimating equation model; Longitudinal study; Multimorbidity; Pattern; Trajectory.

Conflict of interest statement

Declaration of competing interest No potential conflict of interest was reported by the authors.

Supplementary info

MeSH termsExpand

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Cite

10

Int J Med Inform

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Digital applications to support self-management of multimorbidity: A scoping review

Lucy Smith [1], Glenn Simpson [1], Sian Holt [1], Hajira Dambha-Miller [2]

Affiliations Expand

- PMID: 40424867

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Free article

Abstract

Introduction: Multimorbidity, defined as the co-occurrence of two or more long-term conditions, is increasing rapidly and poses challenges for healthcare systems. Advances in digital technologies offer solutions by facilitating personalised, scalable care interventions that empower individuals to manage their conditions more effectively. These applications have potential to improve access to care, enhance patient engagement, and support tailored approaches to self-management.

Objectives: This scoping review aims to synthesise current evidence on the use of digital applications for self-management in adults with multimorbidity.

Methods: A scoping review was conducted, systematically searching PubMed, Web of Science, OVID, CINAHL, EMBASE, and additional manual searches. Boolean operators and targeted key terms were employed to retrieve relevant studies from database inception to 16th January 2024.

Results: The search yielded 1,974 articles, of which 31 met the inclusion criteria. Digital applications for self-management in multimorbidity demonstrated high acceptability and varying efficacy. Key benefits included improved communication, symptom tracking, and autonomy. Barriers included privacy concerns, additional patient burden, and engagement challenges. Socio-demographics, self-efficacy, and digital literacy influenced both barriers and facilitators to tool usage. Theoretical models underpinning digital applications were limited. Older adults and the working-age population were rarely included.

Conclusion: The current evidence base does not fully address the needs of older adults with low digital literacy or working-age populations with multimorbidity. Our model highlights the importance of broader contextual mechanisms in digital tool adoption. Future research should prioritise theory-driven tool development tailored to disease clusters and aligned with sociodemographic profiles, health risks, and social care needs. Addressing these gaps could improve self-management and health outcomes for high-risk populations.

Keywords: Digital applications; Multimorbidity; Scoping review; Self-management.

Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Dr Glenn W Simpson reports equipment, drugs, or supplies was provided by University of Southampton. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

- Cited by 1 article

Supplementary info

Publication types, MeSH termsExpand

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Cite

11

Clin Gerontol

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. 2025 Oct-Dec;48(5):1223-1234.

doi: 10.1080/07317115.2025.2487673. Epub 2025 Apr 9.

Adverse Childhood Events, Personality Disorders, and Multimorbidity in Older Adults: Exploring the Connections

Semmy Op den Camp [1 2], Julie Schulkens [2 3], Sebastiaan van Alphen [2 4], Ellen Gielkens [2 4], Silvan Licher [5 6], Therèse van Amelsvoort [2 3], Sjacko Sobczak [1 2 7]

Affiliations Expand

- **PMID: 40202034**

- **DOI: 10.1080/07317115.2025.2487673**

Free article

Abstract

Objectives: We investigated the association between adverse childhood events, personality disorders and multimorbidity in older adults.

Methods: This is a cross-sectional analysis in a population of older adults including 40 people with a personality disorder and 75 healthy controls. The Childhood Traumatic Events Scale was used to assess adverse childhood events. Multimorbidity was defined as the presence of 2 or more predetermined chronic somatic and psychiatric disorders. Logistic regression analysis was used to assess the association between adverse childhood events, personality disorders and multimorbidity.

Results: No significant association was found between adverse childhood events and multimorbidity (OR = 1.03, 95% CI = 0.96-1.09). The presence of a personality disorder was significantly associated with multimorbidity (OR = 12.95, 95% CI = 4.28-39.14).

Conclusions: Overall, we did not find an association between adverse childhood events and multimorbidity in older adults. Multimorbidity was more prevalent in subjects with personality disorders compared to healthy controls.

Clinical implications: The findings suggest that personality disorders are associated with both mental and physical health challenges, underscoring the importance of integrated care approaches to address both aspects in clinical practice.

Keywords: Adverse childhood events; multimorbidity; older adults; personality disorders; somatic disorders.

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Haematologica

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. 2025 Oct 1;110(10):2548-2549.

doi: 10.3324/haematol.2025.287356. Epub 2025 Feb 6.

Comment on: Multimorbidity, comorbidity, frailty, and venous thromboembolism

Maria I Zervou [1], George N Goulielmos [2]

Affiliations Expand

- PMID: 39911113

- PMCID: PMC12485345

- DOI: 10.3324/haematol.2025.287356

No abstract available

- Cited by 1 article
- 9 references

Full text links

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13

Evid Based Nurs

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. 2025 Oct 3;28(4):171.

doi: 10.1136/ebnurs-2024-104029.

Failure to rescue: optimising nursing assessment and surveillance has the potential to improve outcomes for deteriorating patients with multimorbidity

Elizabeth Elder [1 2 3], Rachel Muir [4 2 5]

Affiliations Expand

- PMID: 38969483

- DOI: 10.1136/ebnurs-2024-104029

No abstract available

Keywords: Education; Evidence-Based Nursing; Nursing; Nursing Assessment; Nursing Staff.

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

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Case Reports

JACC Case Rep

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. 2025 Oct 1;30(30):105308.

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Hypereosinophilic Syndrome Presenting as Coronary Artery Spasm and ST-Segment Elevation Myocardial Infarction

Matthew P Czaja [1], Yogamaya Mantha [2], Mark L Canales [2], Robert J Chilton [3]

Affiliations Expand

- PMID: 41043936

- DOI: 10.1016/j.jaccas.2025.105308

Abstract

Background: Hypereosinophilic syndrome (HES) is characterized by high absolute eosinophil count and multiorgan damage. Energy drink consumption (EDC) is associated with adverse cardiovascular events, including coronary artery spasm (CAS).

Case summary: A 31-year-old man with asthma and excessive EDC presented with chest pain, hypotension, and inferior ST-segment elevation myocardial infarction with elevated troponin to 1,081 ng/L. Given persistent CAS refractory to coronary vasodilators, he underwent balloon angioplasty of the right coronary artery and first diagonal branch. Despite initial improvement, his absolute eosinophil count and systemic symptoms worsened. Gastrointestinal, pulmonary, and bone marrow biopsies demonstrated eosinophilic infiltration. He achieved remission with corticosteroids.

Discussion: ST-segment elevation myocardial infarction from CAS is a rare cardiac manifestation of HES. The multidisciplinary management requires pharmacologic and interventional therapies to reduce inflammation and prevent cardiovascular sequelae.

Take-home message: This case highlights the importance of early recognition and treatment HES in patients with unexplained myocardial infarction, particularly when associated with EDC and the absence of atherosclerotic risk factors.

Keywords: acute coronary syndrome; blood tests; necrosis.

Conflict of interest statement

Funding Support and Author Disclosures The authors have reported that they have no relationships relevant to the contents of this paper to disclose.

Supplementary info

Publication typesExpand

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Cite

2

Lancet

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. 2025 Oct 4;406(10511):1444-1445.

doi: 10.1016/S0140-6736(25)01150-X. Epub 2025 Sep 28.

Anti-inflammatory reliever therapy for children with asthma

Vanessa M McDonald [1]

Affiliations Expand

- **PMID: 41033331**
- **DOI: 10.1016/S0140-6736(25)01150-X**

No abstract available

Conflict of interest statement

I report research grants paid to my institution from GSK, the National Health and Medical Research Council, and the Medical Research Futures Fund, received in the past 3 years. I also report honoraria for the provision of education from GSK, Boehringer Ingelheim, and the Menarini Foundation, and advisory board fees from GSK. In the past 3 years I have acted as a volunteer Board Director for the Thoracic Society of Australia and New Zealand and a writing committee member for the COPD X guidelines.

Full text links

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Cite

3

Randomized Controlled Trial

Lancet

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doi: 10.1016/S0140-6736(25)00861-X. Epub 2025 Sep 28.

Budesonide-formoterol versus salbutamol as reliever therapy in children with mild asthma (CARE): a 52-week, open-label, multicentre, superiority, randomised controlled trial

Lee Hatter [1], Mark Holliday [2], Karen Oldfield [2], Ciléin Kearns [2], Tasmin Barry [3], Melissa Black [2], Pepa Bruce [2], Atalie Colman [2], Emily Dickinson [2], Allie Eathorne [2], Matire Harwood [4], Thomas Hills [2], Rebekah Lamb [2], Kyley Kerse [2], Srinidhi Krishnamoorthy [2], John Martindale [2], Alex Semprini [3], Nick Shortt [2], David McNamara [5], Catherine A Byrnes [6], Stuart R Dalziel [6], Andrew Bush [7], Mark Weatherall [8], Richard Beasley [9]; CARE study team

Collaborators, Affiliations Expand

- PMID: 41033330

- DOI: 10.1016/S0140-6736(25)00861-X

Abstract

Background: Combination inhaled corticosteroid-formoterol reliever monotherapy reduces the rate of asthma attacks compared to short-acting β_2-agonist (SABA) reliever monotherapy in adults. Its comparative efficacy in children has not been established.

Methods: CARE was a 52-week, open-label, parallel-group, multicentre, superiority, randomised controlled trial in children aged 5-15 years with asthma using SABA reliever monotherapy at 15 clinical trials sites in New Zealand. Participants were randomly assigned (1:1) to either budesonide 50 µg-formoterol 3 µg, two actuations as needed, or salbutamol 100 µg, two actuations as needed. The primary outcome

was asthma attacks as rate per participant per year. This trial was registered with the Australian New Zealand Clinical Trials Registry, ACTRN12620001091998.

Findings: From Jan 28, 2021, to June 23, 2023, we assessed 382 participants for eligibility. We randomly assigned 360 (94%) participants to treatment (179 [50%] to the budesonide-formoterol group and 181 [50%] to the salbutamol group). The annualised rate of asthma attacks was lower in the budesonide-formoterol group than in the salbutamol group-cluster-adjusted rates 0·23 versus 0·41 per participant per year (relative rate 0·55 [95% CI 0·35-0·86]; p=0·012). The number of participants with at least one adverse event was 162 (91%) in the budesonide-formoterol group and 167 (92%) in the salbutamol group (odds ratio 0·79 [95% CI 0·35-1·79]).

Interpretation: In children aged 5-15 years with mild asthma, budesonide-formoterol reliever monotherapy is superior to salbutamol for preventing asthma attacks, with a similar safety profile.

Funding: Health Research Council of New Zealand, Cure Kids New Zealand, and the Barbara Basham Medical Charitable Trust (managed by Perpetual Guardian).

Conflict of interest statement

Declaration of interests RB has received personal fees from AstraZeneca, Avillion, and Teva, and institutional research funding from AstraZeneca (including the ongoing START CARE and INFORM studies), Teva, Health Research Council of New Zealand, CureKidz NZ, and the Barbara Basham Trust proudly managed by Perpetual Guardian. All other authors declare no competing interests.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links

. 2025 Oct 1.

doi: 10.1001/jama.2025.14449. Online ahead of print.

Management of Severe Refractory Asthma

Juan Carlos Cardet [1], Sergio E Chiarella [2], Michelle L Hernandez [3]

Affiliations Expand

- PMID: 41032334

- DOI: 10.1001/jama.2025.14449

No abstract available

Plain language summary

This JAMA Insights explores the management of severe refractory asthma, including medications, access to specialists, and managing environmental triggers.

Full text links

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Cite

5

Allergy

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. 2025 Oct 1.

doi: 10.1111/all.70085. Online ahead of print.

Long-Term, Real-World Effectiveness of Allergen Immunotherapy in Children and Adolescents With Allergic Rhinitis and Asthma

Christian Woehlk [1 2], Thomas Stranzl [2], Marco Contoli [3], Nick Freemantle [4], Andreas Kallsoy Slaettanes [2], Julie Rask Larsen [2], Celeste Porsbjerg [1], Benedikt Fritzsching [5]

Affiliations Expand

- PMID: 41031547

- DOI: 10.1111/all.70085

Abstract

Background: Respiratory allergies often begin in childhood and can progress over time, leading to increased disease burden. Allergen immunotherapy (AIT) is the only causal treatment for allergic respiratory diseases with disease-modifying potential. While randomised trials support its efficacy in controlling allergic rhinitis (AR) and asthma symptoms, long-term real-world data in children remain limited.

Methods: This paediatric study (n = 11,036) was conducted within the pre-defined framework of the REACT study, based on protocol-specified objectives. Children (< 18 years) with physician-diagnosed AR, with or without pre-existing asthma, were included. AIT-treated patients were matched 1:1 to non-AIT controls. Effectiveness was assessed over 9 years by comparing AR and asthma medication prescriptions, using a public database covering all reimbursable AIT products. Relative differences were calculated across the full observation period.

Results: AIT-treated children (mean age 11.4 years; 62.1% male) exhibited greater reductions in AR medication use than controls (additional 9% reduction beyond 61% in controls). In children with asthma, AIT was associated with additional reductions in asthma medication use (-21% beyond -48% in controls), severe exacerbations (-21% beyond -36%), and new oral corticosteroid prescriptions (-33% beyond -41%). Age stratification revealed more pronounced AR medication reductions in younger children (0-11 years) than in adolescents (12-17 years).

Conclusion: This large-scale, real-world study supports the long-term effectiveness of AIT in children with AR, with or without asthma. The findings reflect improved disease control and suggest a disease-modifying effect of AIT. Early intervention, particularly in younger children, may help mitigate the progression of allergic disease.

Keywords: allergen immunotherapy; allergic rhinitis; asthma; children; prevention; real-world evidence.

- **38 references**

Supplementary info

Grants and fundingExpand

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WILEY Full Text Article

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Cite

6

Review

Pediatr Allergy Immunol

. 2025 Oct;36(10):e70207.

doi: 10.1111/pai.70207.

Leveraging artificial intelligence for the management of preschool wheeze: A narrative review

Anglin Dent [1 2 3], Mohammad Kaviul Khan [3], Padmaja Subbarao [3 4 5]

Affiliations Expand

- PMID: 41030172
- PMCID: PMC12485587
- DOI: 10.1111/pai.70207

Abstract

Management of preschool wheeze is notoriously challenging given heterogeneous clinical trajectories and underlying biological mechanisms dictating therapeutic response. Data-driven approaches have highlighted the value of identifying individual wheeze phenotypes and underlying biomarkers to support a personalized management approach; however, these advancements have yet to be translated into clinical management. Here, we discuss key opportunities for Artificial Intelligence and Machine Learning to support personalized approaches to wheeze management through vast pattern-recognition capabilities. Advancements in the development of tools for objective symptom evaluation, remote symptom monitoring, and prediction of clinical trajectories are summarized. Key considerations for the responsible and successful deployment of such promising technologies in real-world clinical settings are emphasized, including prevention of algorithmic biases, promotion of prediction transparency, and establishing standards for patient data privacy and equitable access to novel technologies.

Keywords: artificial intelligence; asthma; personalized medicine; preschool; wheeze.

Conflict of interest statement

The authors declare no commercial or financial conflicts of interest.

- 105 references

Supplementary info

Publication types, MeSH termsExpand

Full text links

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Cite

7

Clin Transl Allergy

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. 2025 Oct;15(10):e70101.

doi: 10.1002/clt2.70101.

Digital Monitoring of Symptoms and Lung Function During Birch Pollen Season in Pediatric Patients

Tiina Helena Tanninen [1], Paula Hannele Reiterä [2], Annika Saarto [3], Janne Burman [1], Anna Susanna Pelkonen [1], Mika Juhani Mäkelä [1]

Affiliations Expand

- **PMID: 41024417**
- **PMCID: PMC12479713**
- **DOI: 10.1002/clt2.70101**

Abstract

Background: Mobile health (mHealth) applications for asthma and allergic rhinitis (AR) may guide patients in following medication use, symptoms, and lung function supporting self-management.

Objective: The primary study objective was to investigate the objective effect of birch pollen on asthma and AR symptoms and medicine use in pediatric patients with varying levels of birch-specific immunoglobulin E (IgE) during the 2022 birch pollen season using digital tools. The secondary objectives were to determine the effect of birch pollen on Asthma Control Test scores, and to record the subjective benefits in self-management while using the application.

Methods: Altogether, 48 pediatric participants were categorized into three groups based on their birch-specific IgE levels. Participants continued their existing asthma

control therapy. For allergic rhinitis and conjunctivitis, antihistamines, intranasal corticosteroids (INCS) or a combination of INCS and intranasal antihistamines, and cromoglicates or local antihistamines were prescribed. The study involved daily asthma and allergic rhinitis symptom and medication reporting via the mHealth application (KAMU Health, Finland) combined with microspirometry during the birch pollen season in Helsinki, Finland.

Results: The patients preferred oral AR treatment. However, the low birch pollen levels may have contributed to moderate adherence to AR treatment. A low birch pollen load does not significantly impair lung function in young patients receiving anti-asthmatic treatment regularly. The majority of patients perceived this digital approach as beneficial, irrespective of their level of birch-specific sensitization.

Conclusion: Digital tools support asthma and AR care by enabling disease monitoring, patient engagement, and provide real-world insights for clinicians.

Keywords: allergic rhinitis; asthma; lung function; mHealth; pediatric.

Conflict of interest statement

The authors declare no conflicts of interest.

- 9 references
- 1 figure

Supplementary info

Grants and fundingExpand

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Cite

8

Am J Nurs

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. 2025 Oct 1;125(10):50.

doi: 10.1097/AJN.0000000000000170a. Epub 2025 Sep 25.

As-needed albuterol and budesonide combined therapy is safe and effective for mild asthma

Karen Rosenberg

- PMID: 40993871

- DOI: 10.1097/AJN.0000000000000170a

Abstract

ACCORDING TO THIS STUDY.

- 1 reference

Supplementary info

MeSH terms, SubstancesExpand

Full text links

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Cite

9

Respirology

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. 2025 Oct;30(10):923-925.

doi: 10.1111/resp.70121. Epub 2025 Sep 21.

World Lung Day 2025-Healthy Lungs, Healthy Life

Kwun M Fong [1], David C L Lam [2], Yoshinori Hasegawa [3], Suga Konno [4], Chul-Gyu Yoo [5]

Affiliations Expand

- PMID: 40977074

- PMCID: PMC12486334

- DOI: 10.1111/resp.70121

No abstract available

Keywords: COPD; asthma; lung cancer; respiratory infections; tuberculosis.

Conflict of interest statement

The authors declare no conflicts of interest.

- **6 references**
- **1 figure**

Full text links

WILEY Full Text Article

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Cite

10

Review

Sleep Med Rev

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. 2025 Oct:83:102146.

doi: 10.1016/j.smrv.2025.102146. Epub 2025 Aug 7.

Asthma and obstructive sleep apnea: A complex but treatable relationship

Ignasi Español [1], Ebymar Arismendi [2], Pilar Martínez-Olondris [2], Concepción Ruiz [1], Cristina Embid [1], Jennifer Garcia [1], Alvar Agustí [3], Mireia Dalmases [4]

Affiliations Expand

- **PMID: 40848540**

- **DOI: 10.1016/j.smrv.2025.102146**

Abstract

Asthma and obstructive sleep apnea are complex diseases that significantly impact the health-related quality of life and overall health status of patients. Recent evidence points towards an increased prevalence of obstructive sleep apnea in asthmatic patients, especially in those with severe and uncontrolled asthma, potentially leading to worse asthma control with increased symptoms, diminished

health status and more frequent exacerbations. The mechanisms underlying this association are not fully elucidated. However, because obstructive sleep apnea is treatable, screening for sleep disorders should be considered in patients with severe asthma and uncontrolled disease. The efficacy and implications of treatment with continuous positive airway pressure to improve asthma control remain unclear, although there are some promising results showing improved asthma outcomes. Further research is needed to enlighten the relationship between asthma and obstructive sleep apnea, and to better define the role of continuous positive airway pressure therapy in improving asthma control and outcomes in comorbid patients with asthma and obstructive sleep apnea. Here we review the state-of-the-art in this field.

Keywords: Asthma; Asthma exacerbations; Continuous positive airway pressure (CPAP); Lung function; Obstructive sleep apnea (OSA).

Conflict of interest statement

Declaration of interest The authors declare not to have any conflicts of interest that may be considered to influence directly or indirectly the content of the manuscript.

Supplementary info

Publication types, MeSH termsExpand

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Cite

11

Respir Med

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. 2025 Oct:247:108315.

doi: 10.1016/j.rmed.2025.108315. Epub 2025 Aug 20.

Impact of dupilumab on oscillometry and spirometry derived ratios in severe refractory asthma

Robert Greig [1], Philipp Suter [1], Rory Chan [1], Brian Lipworth [2]

Affiliations Expand

- PMID: 40846048

- **DOI: 10.1016/j.rmed.2025.108315**

Free article

Abstract

Impulse oscillometry (IOS) - a physiological effort independent technique - is used to evaluate small airways dysfunction in asthma. The absolute values produced from IOS can be challenging to understand thus, we previously proposed using oscillometry derived ratios to aid interpretation. Patients with abnormal baseline R5-R20/R5 ratio were identified and analysed if there was a significant response in their ratios pre and post treatment on dupilumab. There were significant improvements in both R5-R20/R5 and X5/AX as well as the spirometry derived ratios FEV_1/FVC and FEF_{25-75}/FVC. The type 2 biomarkers (eosinophils and FeNO) and asthma control score also showed significant improvements, although they were not significantly correlated with the oscillometry ratios. Standardised response means showed good sensitivity for both oscillometry derived ratios and spirometry derived ratios in detecting response to treatment. Based on these observations, oscillometry derived ratios may be a viable and easier to interpret alternative to using absolute values for the evaluation of small airways response to biologic therapy in a real-life clinic setting.

Keywords: Asthma; Dupilumab; Oscillometry derived ratios; Spirometry.

Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interestsRobert Greig reports a relationship with AstraZeneca that includes: speaking and lecture fees. Philipp Suter reports a relationship with AstraZeneca that includes: speaking and lecture fees. Philipp Suter reports a relationship with GSK that includes: speaking and lecture fees. Philipp Suter reports a relationship with Lung league Fribourg that includes: funding grants and speaking and lecture fees. Philipp Suter reports a relationship with Swiss Lung Foundation that includes: funding grants. Rory Chan reports a relationship with AstraZeneca that includes: speaking and lecture fees. Rory Chan reports a relationship with Vitalograph Ltd that includes: consulting or advisory. Rory Chan reports a relationship with Thorasys that includes: speaking and lecture fees. Brian J Lipworth reports a relationship with AstraZeneca that includes: consulting or advisory, funding grants, speaking and lecture fees, and travel reimbursement. Brian J Lipworth reports a relationship with Sanofi that includes: consulting or advisory and speaking and lecture fees. Brian J Lipworth reports a relationship with NIOX Group Plc that includes: consulting or advisory and speaking and lecture fees. Brian J Lipworth reports a relationship with Chiesi that includes: consulting or advisory, funding grants, speaking and lecture fees, and travel reimbursement. Brian J Lipworth reports a relationship with Lupin Pharmaceuticals, Inc. That includes: consulting or advisory. Brian J Lipworth reports a relationship with Glenmark Pharmaceuticals Limited that includes: consulting or advisory and speaking and lecture fees. Brian J Lipworth reports a relationship with Sandoz Inc that includes: consulting or

advisory. The son of Dr Brian J Lipworth is presently an employee of AstraZeneca. If there are other authors, they 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

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Cite

12

Lancet Reg Health Eur

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. 2025 Aug 6:57:101420.

doi: 10.1016/j.lanepe.2025.101420. eCollection 2025 Oct.

Cardiovascular safety of biologic therapies in patients with severe asthma: a nationwide cohort study in Belgium

Frauke Van Vaerenbergh [1], Delphine Vauterin [1], Maxim Grymonprez [1 2], Lowie E G W Vanfleteren [3 4 5], Guy Brusselle [5 6 7], Lies Lahousse [1 6]

Affiliations Expand

- PMID: 40823190
- PMCID: PMC12355080
- DOI: 10.1016/j.lanepe.2025.101420

Abstract

Background: In last decades, biologic therapies have been approved for severe allergic and/or eosinophilic asthma. Limited studies have investigated the effect of biologics on (acute) cardiovascular events, which have reported conflicting results. We aimed to investigate the potential cardiovascular risk of anti-immunoglobulin(Ig)-E (omalizumab) and anti-interleukin(IL)-5/IL5 receptor (IL5R)

therapies (mepolizumab and benralizumab) in patients with severe asthma compared with non-biologic users.

Methods: Adult asthma patients eligible for biologics were identified in Belgian nationwide data between 2017 and 2022. Inverse probability of treatment weighted Cox regression was used to investigate cardiovascular outcomes and all-cause mortality, while controlling for age, sex, obesity, smoking, comorbidities, comedication, exacerbations, and frailty.

Findings: This cohort study consisted of 171,865 patients (mean age 64 years; 55% females) including 1826 (1.1%) anti-IgE users and 2398 (1.4%) anti-IL5/IL5R users. Anti-IgE exposure was associated with a significantly lower risk of mortality (aHR 0.48, 95% CI 0.40-0.58), congestive heart failure (aHR 0.79, 95% CI 0.65-0.95), peripheral artery disease (aHR 0.66, 95% CI 0.51-0.86), and stroke (aHR 0.54, 95% CI 0.36-0.81). Anti-IL5/IL5R use was associated with a significantly lower risk of mortality (aHR 0.35, 95% CI 0.29-0.42), congestive heart failure (aHR 0.63, 95% CI 0.52-0.76), arrythmia (aHR 0.78, 95% CI 0.68-0.90), and peripheral artery disease (aHR 0.69, 95% CI 0.54-0.87) compared with non-biologic users. No significant differences in the risk of myocardial infarction and pulmonary embolism were observed.

Interpretation: In this nationwide observational study, biologic therapies for patients with severe asthma were associated with a significantly lower risk of all-cause mortality and specific cardiovascular diseases compared with non-biologic users.

Funding: None.

Keywords: Anti-IL5 therapy; Anti-IgE therapy; Asthma; Biological; Cardiovascular events; Monoclonal antibody; Mortality.

Conflict of interest statement

Outside this manuscript, LL has been consulted as expert for AstraZeneca, GlaxoSmithKline and Sanofi, and has given lectures sponsored by Chiesi, Johnson and Johnson, IPSA vzw and Domus Medica vzw (non-profit organizations facilitating lifelong learning for health care providers), all paid to her institution. She received support for travel from Menarini. None of which are related to the content of this work. Outside this manuscript, LV received research grants from The Family Kamprad Foundation, Svensk Lungmedicinsk Förening, the Swedish government and country council ALF grant, The Swedish Heart and Lung Foundation and AstraZeneca, all paid to his institution. LV received payments or honoraria for lectures or presentations by GSK, Astrazeneca, Boehringer, Novartis, Chiesi, Resmed, Pulmonx, Grifols, and Sanofi. GB received fees for advisory boards and lectures from AstraZeneca, Chiesi, GlaxoSmithKline, and Sanofi Regeneron. All other authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

- **34 references**
- **2 figures**

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Cite

13

Respir Med

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. 2025 Oct:247:108299.

doi: 10.1016/j.rmed.2025.108299. Epub 2025 Aug 6.

Effect of indoor environmental interventions in the home on asthma in children and adolescents: A systematic review

Nina Viskum Hogaard [1], Torben Sigsgaard [2], Lone Agertoft [3], Susanne Halken [3], Sune Rubak [4]

Affiliations Expand

- PMID: 40774466

- DOI: 10.1016/j.rmed.2025.108299

Free article

Abstract

Background: Asthma is the most frequent chronic respiratory disease in childhood. Children spend much time indoors and are therefore exposed to many indoor allergens and pollutants for several hours during day and night. Many different measures have been investigated in an attempt to reduce the different indoor asthma triggers. The objective of this review was to evaluate the effect on asthma in children and adolescents of home environmental interventions.

Methods: A systematic review was conducted by searching five electronic databases and including randomised controlled trials studying the effect of environmental interventions, not aimed at tobacco smoke and smoke alone, on childhood allergic asthma. Data were extracted using a predefined template and quality of the evidence assessed using Cochrane risk-of-bias tool and the GRADE approach.

Results: We identified 13,124 studies and included 54 of which 24 intervened on house dust mites, 3 on pet allergen, 4 on pest allergen, 17 on indoor air quality and

6 were multifaceted interventions. There was a high degree of heterogeneity, and only three studies of high quality. A significant effect was found in two high quality studies on mattress covers, four (1 high, 1 moderate, 2 very low quality) studies on nocturnal, temperature-controlled laminar airflow and low evidence for effect of multifaceted interventions. Apart from this no clear effects of other interventions were found.

Conclusion: Multifaceted interventions, nocturnal laminar air flow and mitigating HDM exposure by mite-impermeable mattress covers are promising interventions. Future studies should use relevant asthma outcome measures and a rigorous study design based on experience from former studies.

Conflict of interest statement

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

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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Cite

14

Clinical Trial

Respir Med

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. 2025 Oct:247:108293.

doi: 10.1016/j.rmed.2025.108293. Epub 2025 Aug 5.

Efficacy and safety of novel fixed dose combination of vilanterol, glycopyrronium, and fluticasone furoate dry powder inhaler: A phase 3, randomized, non-inferiority trial compared with fixed dose combination of indacaterol, glycopyrronium, and mometasone furoate dry powder inhaler in Indian asthma patients

Chintan Patel [1], Vaishal Sheth [2], Ravi Koppula [3], Avadhesh Kumar [4], Amit S Bhate [5], Diptikant Sahoo [6], Manish Kumar Jain [7], Asish Mondal [8], Deven Parmar [9], Kevinkumar Kansagra [9], Rahul Shrivastava [9], Hardik Pathak [10]

Affiliations Expand

- PMID: 40759266

- DOI: 10.1016/j.rmed.2025.108293

Abstract

Background: For managing persistent asthma, M/s. Zydus Healthcare Limited has developed a novel fixed dose combination (FDC) of vilanterol 25 µg, glycopyrronium 50 µg, and fluticasone furoate 200 µg (VIL-GLY-FF) in dry powder inhaler (DPI) formulation.

Methods: This phase 3, multicenter, parallel group, open-label study randomized (1:1) patients not controlled with medium or high-dose inhaled corticosteroid in either the test (VIL-GLY-FF DPI) or reference (approved FDC DPI of indacaterol 150 µg, GLY 50 µg, and mometasone furoate 160 µg [IND-GLY-MF]) group. FDCs were administered by inhaling one capsule via Respihaler device once-daily for 12 weeks. The primary endpoint was the change in trough forced expiratory volume in 1 s (FEV1) at week 12 from baseline. Secondary outcomes included the comparison of trough forced vital capacity (FVC), post-bronchodilator FEV1 and FVC, and asthma control test score between the two groups.

Findings: All 256 enrolled patients completed the study. The least square mean (standard error) change in trough FEV1 at week 12 from baseline was 392.77 (31.33) ml and 364.34 (31.33) ml for the test and reference groups (p = 0.522), respectively. The lower limit of 95 % confidence interval for the difference between two groups for the mean change in trough FEV1 at week 12 from baseline was -58.83 ml, well-above the predefined non-inferiority margin (-150 ml). Other secondary endpoints and safety were comparable between the two groups.

Interpretation: VIL-GLY-FF DPI was found non-inferior to IND-GLY-MF DPI in improving trough FEV1 response. The test FDC was well-tolerated in Indian patients with persistent asthma.

Clinical trial registration number: CTRI/2024/02/063046 (Clinical Trial Registry - India).

Keywords: Asthma; Fluticasone furoate; Glycopyrronium; Non-inferiority; Phase 3; Randomized; Vilanterol; dry powder inhaler.

Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:Kevinkumar Kansagra, Deven Parmar, Rahul Shrivastava, and Hardik Pathak are employees of Zydus Lifesciences Ltd., Ahmedabad, India. All other

authors have no conflict of interests to declare. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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Respir Med

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. 2025 Oct:247:108288.

doi: 10.1016/j.rmed.2025.108288. Epub 2025 Aug 5.

Association between asthma and advanced cardiovascular-kidney-metabolic syndrome in U.S. adults, a cross-sectional study from NHANES 2011-2023

Dingyuan Tu [1], Shuhui Ju [2], Yu Xue [3], Weijuan Xie [3], Cong Wu [1], Chaoqun Ma [4], Qiang Xu [5]

Affiliations Expand

- PMID: 40752629

- DOI: 10.1016/j.rmed.2025.108288

Abstract

Background: In 2023, the American Heart Association presented a new condition, cardiovascular-kidney-metabolic (CKM) syndrome, recognized for its multistage and multisystem nature. Given that inflammatory condition can enhance the risk for CKM syndrome and asthma is a disease characterized by chronic airway inflammation, asthma could potentially increase the progression through CKM syndrome stages. The aim of the present study was to investigate the association between asthma and advanced CKM syndrome.

Methods: This cross-sectional study used data on U.S. adults from the National Health and Nutrition Examination Survey 2011-2023. Participants were categorized into five CKM stages (0-4) according to the clinical severity of CKM syndrome. CKM

syndrome was defined as stage 1 or above, with advanced stages being stage 3 or 4. Self-administered questionnaires were used to collect information on asthma. Multivariable weighted logistic regression models were used to analyze the relationship between asthma and the prevalence of advanced CKM syndrome.

Results: A total of 22,394 CKM syndrome patients were included in the final analysis, of which 3610 were categorized into advanced CKM syndrome, while the remaining 18,784 were not. After adjusting confounding covariates, asthma was associated with advanced CKM syndrome (odds ratio, 1.86; 95 % confidence interval, 1.59-2.18; p < 0.0001). Further subgroup and sensitivity analyses showed consistent results.

Conclusions: In this cross-sectional study, asthma was positively associated with advanced CKM syndrome in the U.S. adult population. These findings highlight the significance of considering asthma as a risk-enhancing factor for advanced CKM syndrome stages prevention.

Keywords: Asthma; Cardiovascular-kidney-metabolic syndrome; National health and nutrition examination survey.

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 termsExpand

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16

Ann Allergy Asthma Immunol

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. 2025 Oct;135(4):448-449.

doi: 10.1016/j.anai.2025.07.024. Epub 2025 Jul 26.

Type 2 biomarkers and airway hyper-responsiveness disconnect in patients with uncontrolled severe asthma taking benralizumab or dupilumab

Robert Greig [1], Rory Chan [1], Brian Lipworth [2]

Affiliations Expand

- PMID: 40721206

- DOI: 10.1016/j.anai.2025.07.024

Free article

No abstract available

Conflict of interest statement

Disclosures Dr Greig reports receiving personal fees (talks) from AstraZeneca. Dr Chan reports receiving personal fees (talks) and support attending ERS from AstraZeneca; personal fees (consulting) from Vitalograph; and personal fees (talks) from Thorasys. Dr Lipworth reports receiving nonfinancial support (equipment) from GlaxoSmithKline; grants, personal fees (consulting, talks, and advisory board), and other support (attending ATS and ERS) from AstraZeneca; personal fees (talks and consulting) from Sanofi; personal fees (consulting, talks, and advisory board) from Circassia in relation to the submitted work; grants, personal fees (consulting, talks, and advisory board), and other support (attending ERS) from Teva; personal fees (talks and consulting), grants, and other support (attending ERS and BTS) from Chiesi; personal fees (consulting) from Lupin; personal fees (consulting) from Glenmark; personal fees (consulting) from Dr Reddy; personal fees (consulting) from Sandoz; grants, personal fees (consulting, talks, and advisory board), and other support (attending BTS) from Boehringer Ingelheim; grants and personal fees (advisory board and talks) from Mylan outside of the submitted work; and the son of BJL is presently an employee of AstraZeneca.

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Multicenter Study

Rev Mal Respir

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. 2025 Oct;42(8):387-393.

doi: 10.1016/j.rmr.2025.06.006. Epub 2025 Jul 24.

[Emergency room visits for asthma and the reported outcomes: The PASS survey by the CRISALIS network]

[Article in French]

A Didier [1], C Camus [2], A Lemeur [3], L Bieler [4], C Rudzky [5], C Barnig [6], A Dussaucy [7], A Beurnier [8], J-M Nguyen Quang [9], F-X Blanc [10], A Kenzi [11], P Bonniaud [12], N Baptiste [13], A Bourdin [14], M Sebbane [15], P Chanez [16], L Pahus [16], G Devouassoux [17], V Labeye [18], N Khayath [19], C Raherison-Semjen [20], C Saint Raymond [21], C Taillé [22], D A Ghazali [23], V Boulay [24], A Souab [25], P Delpire [26], C-H Verdière [27], H Fouquet [28], V Gazaille [29], C Maurer [30], L Petit [31], L Portel [32], A Girard [33], A Proust [34], C Rochefort-Morel [35], A-L Le Lan-Schnell [36], L Guilleminault [37]

Affiliations Expand

- PMID: 40713267

- DOI: 10.1016/j.rmr.2025.06.006

Abstract

Introduction: An emergency room visit for asthma is a warning sign of a breakdown in care. The objectives of the PASS project (Safe Severe Asthma Pathway) were to establish an inventory of asthma emergency room stays and to identify the existing strengths and areas for improvement in the patient care pathway.

Methods: One-year emergency room visits for asthma were collected from the medical information departments of 21 healthcare establishments. Hospitalizations were distinguished from outpatient visits. A qualitative study was carried out by interviewing the involved parties.

Results: Close to 3000 (2883) patients were admitted to emergency departments in 2018. Among them, 1350 (47%) were hospitalized in a ward, including 530 (39%) in pulmonology, 170 (13%) in intensive care or resuscitation, and 650 (48%) in other departments. Recognized as important by all 21 centers, six patient pathway quality criteria and are either already in place, planned or in the process of being set up.

Conclusion and perspectives: Asthma remains responsible for numerous hospitalizations in emergency units. However, only a small number of the identified quality criteria are actually applied in the centers. Further studies should help to pinpoint the actions needed to apply these criteria on a nationwide scale.

Keywords: Asthma; Asthme; Care pathway; Emergency medicine; Hospitalisations; Hospitalizations; Médecine d'urgence; Parcours de soins.

Conflict of interest statement

Déclaration de liens d'intérêts La coordination du Réseau CRISALIS/F-CRIN (AD, CC, LG) déclare avoir reçu un soutien financier du laboratoire GSK pour l'aide à la rédaction de la publication des résultats. CR déclare avoir reçu un soutien financier

du laboratoire GSK pour la réalisation de l'enquête terrain. Les autres auteurs déclarent ne pas avoir de liens d'intérêts.

Supplementary info

Publication types, MeSH termsExpand

Proceed to details

Cite

18

Rhinology

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. 2025 Oct 1;63(5):584-590.

doi: 10.4193/Rhin24.378.

Establishing validity of a novel patient-centered and directly measurable definition of acute exacerbation of chronic rhinosinusitis

F A Houssein [1], A R Sedaghat [1], K M Phillips [1]

Affiliations Expand

- PMID: 40674772

- DOI: 10.4193/Rhin24.378

Abstract

BACKGROUND A patient-centered and directly measurable definition for acute exacerbation of chronic rhinosinusitis (AECRS) has been developed as "a flare up of symptoms beyond day-to-day variation, lasting at least 3 days, and to which a distinct negative impact on a patient's quality of life (QOL) or functionality can be attributed". Our aim is to understand how this definition correlates with previously used metrics.

Methodology: Cross-sectional study of chronic rhinosinusitis (CRS) patients. The number of AECRS (using this novel definition), courses of CRS-related systemic antibiotics and corticosteroids taken for these AECRS, and number of asthma exacerbations in the past 6 months was queried. Disease-specific quality of life was measured using the 22-item Sinonasal Outcome Test.

Results: A total of 237 CRS patients were enrolled. In the 6-month period prior to study enrollment, the mean number of AECRS was 4.2 while the mean number of systemic antibiotics or corticosteroids taken for these AECRS was 1.6 reflecting patients received rescue medication for 33% of AECRS. The number of AECRS was

weakly correlated with number of systemic rescue medications and SNOT-22 score. For asthmatic CRS patients, numbers of AECRS and asthma exacerbations were correlated. Finally, comorbidities were associated with higher AECRS frequency by 29% in migraine and 41% in active tobacco users.

Conclusions: We achieved our aim by showing the AECRS definition correlates with systemic rescue medication usage, disease-specific QOL and asthma exacerbations. Our results demonstrate that indirect measures of AECRS may not capture all AECRS. Furthermore, comorbid migraine and tobacco use are associated with AECRS frequency.

Supplementary info

MeSH terms, SubstancesExpand

Full text links

Proceed to details

Cite

19

Sleep Med

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. 2025 Oct:134:106668.

doi: 10.1016/j.sleep.2025.106668. Epub 2025 Jul 7.

Nocturnal oximetry profile in hospitalized children with asthma exacerbation upon hospital discharge

Panagiota Panagiotou [1], Anastasios-Panagiotis Chantzaras [2], Theodoros N Sergentanis [3], Aggeliki Moudaki [4], Athanasios Michos [5], Christina Kanaka-Gantenbein [6], Athanasios G Kaditis [7]

Affiliations Expand

- PMID: 40651311

- DOI: 10.1016/j.sleep.2025.106668

Abstract

Background: Asthma exacerbation is a cause of morbidity and mortality in the pediatric population. In guidelines there is no consensus regarding discharge criteria post exacerbation. Moreover, sleep has a known impact on gas exchange,

which might be clinically relevant in patients with obstructive lung disease. Therefore, the aim of this study was to investigate the nocturnal oximetry profile in hospitalized children with asthma exacerbation, pre-discharge.

Materials and methods: Nocturnal oximetry recordings of children with asthma admitted in Aghia Sofia Children's Hospital between December 2020 and April 2024 were reviewed. In this cross-sectional study we compared them with recordings of children with Sleep Disordered Breathing (SDB) and controls. Night-time basal SpO_2, Oxygen Desaturation Index3 (ODI3), as well as % of time spent <95 % were compared. The Kruskal-Wallis test was employed to evaluate heterogeneity, followed by Mann-Whitney-Wilcoxon test for pairwise comparisons between the groups.

Results: Asthmatic patients (n = 13) had lower basal SpO_2 in comparison with control (n = 21) and SDB group (N = 37) (SpO_2 93.7 % versus 96.4 % and 96.7 % respectively, $p < 0.0001$). They spent more time in SpO_2< 95 % and had similar ODI3 with the two other groups ($p < 0.001$ and $p < 0.001$ for asthma versus SDB and asthma versus control group respectively). Moreover, in patients with asthma a higher spot SpO_2 was documented during the day, versus night-time basal SpO_2.

Conclusion: This study highlights that clinical improvement precedes SpO_2 improvement in asthmatic patients. A clinical review 48 h post-discharge is advisable. Nocturnal basal SpO_2 is lower than daytime spot SpO_2, which should be taken under consideration in implementation of guidelines.

Keywords: Asthma exacerbation; Pediatric respiratory; Sleep disordered breathing.

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 termsExpand

Full text links

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Cite

20

Observational Study

Respir Med

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. 2025 Oct:247:108224.

doi: 10.1016/j.rmed.2025.108224. Epub 2025 Jul 9.

Real-world use of beclometasone dipropionate and formoterol fumarate NEXThaler® and asthma control among adult asthmatic patients in Europe: The results of the Newton study

Fulvio Braido [1], Kai-Michael Beeh [2], Carolina Cisneros Serrano [3], Anh Tuan Dinh-Xuan [4], Lilla Tamási [5], Antigona Trofor [6], Eleonora Ingrassia [7], Alessio Piraino [8], Cristiano Caruso [9]; NEWTON study group

Collaborators, Affiliations Expand

- PMID: 40645348

- DOI: 10.1016/j.rmed.2025.108224

Free article

Abstract

Purpose: The NEWTON study aims to describe clinical characteristics and evolution of asthma control of adult asthmatic patients treated with extrafine beclometasone dipropionate and formoterol fumarate (BDP/FF) NEXThaler® 100/6 µg.

Subjects and methods: NEWTON (NCT05168995) is a European multinational, multicentre, observational, prospective cohort study that included adults with uncontrolled or poorly controlled asthma, starting BDP/FF NEXThaler® 100/6 µg treatment within 14 days of enrolment and with no use of extrafine formulations in the previous 6 months. Improvement of asthma control, lung function, quality of life (QoL), treatment adherence, and satisfaction with the device were assessed after 3 and 6 months from the enrolment visit. In addition, safety events were monitored.

Results: 620 subjects were enrolled in the study. 423 completed the ACQ-5 questionnaire at enrolment and at least once during the following 6 months. 69.3 % of patients were initiated on maintenance and reliever treatment. At baseline, the median ACQ-5 score was 2.0. After 6 months the median ACQ-5 score had decreased significantly to 0.6 ($p < 0.0001$). Similarly, after 6 months 66.1 % of patients showed improved asthma control. The proportion of subjects with poorly controlled asthma fell from 65.1 % to 17.5 %. These improvements were consistent with the 3-month follow-up results and improved lung function, QoL, treatment adherence and device satisfaction. No new safety concerns were reported.

Conclusion: Results of the NEWTON study confirm the effectiveness and safety of the extrafine fixed combination of BDP/FF NEXThaler® 100/6 µg in adults with uncontrolled asthma in a real-world setting.

Keywords: Asthma; BDP/FF; Extrafine; NEXThaler®; Real-world.

Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:Alessio Piraino reports article publishing charges and writing assistance were provided by Chiesi Italia S.p.A. Fulvio Braido reports financial support was provided by Chiesi Farmaceutici SpA. Carolina Cisneros Serrano reports financial support was provided by Chiesi España SA. Fulvio Braido reports a relationship with GSK that includes: board membership and speaking and lecture fees. Fulvio Braido reports a relationship with Chiesi that includes: board membership and speaking and lecture fees. Fulvio Braido reports a relationship with Menarini group that includes: board membership and speaking and lecture fees. Fulvio Braido reports a relationship with Astra Zeneca that includes: board membership and speaking and lecture fees. Fulvio Braido reports a relationship with Sanofi that includes: board membership and speaking and lecture fees. Fulvio Braido reports a relationship with Regeneron that includes: board membership and speaking and lecture fees. Kai-Michael Beeh reports a relationship with Astra Zeneca that includes: consulting or advisory, speaking and lecture fees, and travel reimbursement. Kai-Michael Beeh reports a relationship with Chiesi Farmaceutici SpA that includes: consulting or advisory, speaking and lecture fees, and travel reimbursement. Kai-Michael Beeh reports a relationship with Bosch Healthcare Solutions GmbH that includes: consulting or advisory, speaking and lecture fees, and travel reimbursement. Kai-Michael Beeh reports a relationship with Berlin-Chemie AG that includes: consulting or advisory, speaking and lecture fees, and travel reimbursement. Kai-Michael Beeh reports a relationship with Sanofi-Aventis Deutschland GmbH that includes: consulting or advisory, speaking and lecture fees, and travel reimbursement. Kai-Michael Beeh reports a relationship with GlaxoSmithKline Inc that includes: consulting or advisory, speaking and lecture fees, and travel reimbursement. Carolina Cisneros Serrano reports a relationship with Sanofi SA that includes: consulting or advisory, funding grants, non-financial support, speaking and lecture fees, and travel reimbursement. Carolina Cisneros Serrano reports a relationship with GlaxoSmithKline SpA that includes: consulting or advisory and speaking and lecture fees. Carolina Cisneros Serrano reports a relationship with AstraZeneca that includes: consulting or advisory, funding grants, speaking and lecture fees, and travel reimbursement. Anh Tuan Dinh-Xuan reports a relationship with Boehringer Ingelheim that includes: speaking and lecture fees. Anh Tuan Dinh-Xuan reports a relationship with GSK that includes: speaking and lecture fees. Anh Tuan Dinh-Xuan reports a relationship with Menarini that includes: speaking and lecture fees. Anh Tuan Dinh-Xuan reports a relationship with Sanofi that includes: speaking and lecture fees. Eleonora Ingrassia reports a relationship with Chiesi Italia that includes: employment. Alessio Piraino reports a relationship with Chiesi Farmaceutici SpA that includes: employment. Kai-Michael Beeh declares that, in the past five years, the institution has received compensation for the conduct of clinical trials by the following corporations: AstraZeneca, Bosch Healthcare Solutions GmbH, Chiesi, GSK, Novartis, Sterna. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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Cite

21

Review

Lancet Respir Med

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. 2025 Oct;13(10):943-950.

doi: 10.1016/S2213-2600(25)00174-2. Epub 2025 Jul 8.

Eosinophils in asthma phenotypes: perpetrators or guilty by association?

Marek Lommatzsch [1], Roland Buhl [2], Karl-Christian Bergmann [3], Guy G Brusselle [4], G Walter Canonica [5], David J Jackson [6], Liam G Heaney [7], Parameswaran Nair [8], J Christian Virchow [9]

Affiliations Expand

- PMID: 40645201

- DOI: 10.1016/S2213-2600(25)00174-2

Free article

Abstract

25 years after publication of a clinical trial in The Lancet on the anti-IL-5 antibody mepolizumab in individuals with allergic asthma, evidence has accumulated that the pathogenetic role of eosinophils is fundamentally different between asthma phenotypes. In the allergen-driven form of asthma, often starting in childhood or during adolescence (ie, early onset asthma), blood eosinophil counts are variable, mainly dependent on allergen exposure, and play only a minor role (as a so-called sidekick) in allergen-induced asthma symptoms. By contrast, eosinophils are persistently elevated and are crucial drivers of the disease in the intrinsic (eosinophilic) form of asthma, which typically starts in adulthood (ie, adult-onset asthma). These data suggest that eosinophilia should not be considered a treatable trait in people with chronic airway diseases, but only a complement to an accurate

clinical diagnosis. This evidence has major implications for the diagnosis of asthma phenotypes and the treatment of asthma (eg, choice of the right biologic).

Conflict of interest statement

Declaration of interests ML has received consulting fees or honoraria for lectures from ALK, Allergopharma, Apontis, AstraZeneca, Berlin-Chemie, Boehringer Ingelheim, Chiesi, GSK, HAL Allergy, Leti, Novartis, MSD, Sanofi, Stallergenes, and TEVA; support for attending meetings or travel from AstraZeneca and Novartis; and grants for research or clinical trials from Deutsche Forschungsgemeinschaft, AstraZeneca, and GSK. RB has received consulting fees or honoraria for lectures from ALK, Allergopharma, AstraZeneca, Berlin-Chemie, Boehringer Ingelheim, Chiesi, Cipla, GSK, HAL Allergy, Leti, Novartis, Roche, Sanofi, and TEVA; has received grants for research or clinical trials from Boehringer Ingelheim, GSK, Novartis, and Roche; and has participated in advisory boards for AstraZeneca, Berlin-Chemie, Boehringer Ingelheim, Chiesi, GSK, Novartis, Roche, and Sanofi. K-CB has received consulting fees or honoraria for lectures from ALK, AstraZeneca, Allergopharma, Almirall, Bencard, Chiesi, GSK, HAL, LETI, Lofarma, Mundipharma, Novartis, and Sanofi. GGB has received honoraria for lectures from AstraZeneca, GSK, Boehringer-Ingelheim, Novartis, Chiesi, and Sanofi. GWC has received consulting fees or honoraria for lectures from AstraZeneca, Chiesi, Novartis, Sanofi, Menarini, Stallergenes Greer, GSK, HAL Allergy, and Regeneron. DJJ has received consulting fees or honoraria for lectures from AstraZeneca, GSK, and Sanofi and grants for research from AstraZeneca. LGH has received honoraria for lectures from Astra Zeneca, Sanofi, Circassia, GSK, and TEVA; honoraria for participation on a data safety monitoring or advisory boards from GSK, AstraZeneca, and Celltrion; support for attending meetings or travel from AstraZeneca, Sanofi, and GSK; and grants for research from AstraZeneca, GSK, and Roche–Genentech. PN has received honoraria for lectures from AstraZeneca, TEVA, Roche, Sanofi, Cyclomedica, and GSK; support for attending meetings or travel from AstraZeneca and TEVA; consulting fees from Equillium and Arrowhead Pharma; and grants for research from Astra Zeneca, TEVA, and Foresee. JCV has received consulting fees or honoraria for lectures or participations in advisory boards from AstraZeneca, Avontec, Bayer, Bencard, Bionorica, Boehringer Ingelheim, Chiesi, Essex Chemie–Schering-Plough, Genzyme, GSK, Janssen-Cilag, Leti, MEDA, Merck, MSD, Mundipharma, Novartis, Nycomed–Altana, Pfizer, Regeneron, Revotar, Sanofi, Sandoz-Hexal, Stallergens, TEVA, UCB–Schwarz-Pharma, and Zydus–Cadila; support for attending meetings or travel from Sanofi and Boehringer Ingelheim; and grants for research or clinical trials from Deutsche Forschungsgemeinschaft, GSK, and MSD.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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22

Review

Expert Opin Drug Deliv

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. 2025 Oct;22(10):1467-1485.

doi: 10.1080/17425247.2025.2527700. Epub 2025 Jul 5.

Triple extrafine fixed-dose combination in asthma: from randomized controlled trials to real-world evidence

Paola Rogliani [1], Gian Marco Manzetti [1], Ilaria De Guido [1], Carlo di Lorenzo [2], Luigino Calzetta [3]

Affiliations Expand

- PMID: 40590254

- DOI: 10.1080/17425247.2025.2527700

Abstract

Introduction: Small airway dysfunction affects 50-90% of asthmatic patients, leading to airway remodeling, worsening symptoms, and quality of life. Targeting small airway dysfunction with inhaled extrafine formulations, with a mass median aerodynamic diameter < 2 µm, is crucial. Triple extrafine fixed-dose combination with inhaled corticosteroids (ICS), long-acting β_2-agonists (LABA), and long-acting muscarinic antagonists (LAMA) been approved for uncontrolled asthma, supported by TRIMARAN and TRIGGER randomized controlled trials (RCT). However, while RCTs offer valuable efficacy and safety data under controlled conditions, findings need to be combined with real-world evidence (RWE).

Areas covered: This narrative review assessed the impact of triple extrafine fixed-dose combination in asthma, integrating RCTs and RWE findings. Post-hoc analyses of RCTs and preliminary gray literature were also considered.

Expert opinion: RCTs and RWE showed significant overlap in outcomes for triple extrafine fixed-dose combination, although differing in some crucial patient characteristics (e.g. smoking status). Triple extrafine fixed-dose combination might be more effective in patients with persistent airflow limitation by targeting small airway dysfunction. However, further RCTs and RWE are needed to address remaining gaps, such as the determinants of response to medium-strength triple

extrafine fixed-dose combination vs. high-strength ICS/LABA and to high-strength triple extrafine fixed-dose combination vs. open triple therapy.

Keywords: Asthma; beclomethasone; extrafine; randomized controlled trial; real-life; real-world evidence; small airways; triple therapy.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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Cite

23

Randomized Controlled Trial

Ann Allergy Asthma Immunol

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. 2025 Oct;135(4):425-433.e4.

doi: 10.1016/j.anai.2025.06.022. Epub 2025 Jun 22.

Effect of tralokinumab on moderate-to-severe atopic dermatitis in patients with atopic comorbidities

Amy S Paller [1], Weily Soong [2], Mark Boguniewicz [3], Bob Geng [4], Jacob P Thyssen [5], Niels Bennike [6], Shannon Schneider [7], Andreas Wollenberg [8]

Affiliations Expand

- **PMID: 40555305**

- **DOI: 10.1016/j.anai.2025.06.022**

Free article

Abstract

Background: Atopic dermatitis (AD) is known to be associated with other atopic comorbidities that all involve type 2 immune dysregulation. Tralokinumab is a monoclonal antibody that specifically targets interleukin-13. As comorbid atopic

disease could indicate a more severe AD phenotype, it is important to assess the effect of tralokinumab treatment in patients with these comorbidities.

Objective: To assess the efficacy and safety of tralokinumab treatment for AD in adult and adolescent patients with moderate-to-severe AD with and without a patient-reported history of atopic comorbidities at baseline, using data from the placebo-controlled trials (ECZema TRAlokinumab) ECZTRA 1, ECZTRA 2, ECZTRA 3, and ECZTRA 6.

Methods: In this post hoc analysis, subgroups were defined by a history of patient-reported asthma, food allergy, hay fever, and/or allergic conjunctivitis. End points included greater than or equal to 75% improvement in Eczema Area and Severity Index-75, Investigator's Global Assessment score of 0 or 1, and adverse events at week 16.

Results: At baseline, patients with a history of at least 1 atopic comorbidity exhibited more severe disease than patients with no atopic comorbidities. At week 16, higher proportions of adult and adolescent patients receiving tralokinumab vs placebo achieved Eczema Area and Severity Index-75 and Investigator's Global Assessment score of 0 or 1, regardless of the presence of atopic comorbidities at baseline. Most adverse events were of mild or moderate severity.

Conclusion: Regardless of the presence or number of self-reported atopic comorbidities, 16 weeks of tralokinumab treatment improved AD severity in adults and adolescents.

Trial registration: ClinicalTrials.gov Identifiers: ECZTRA 1 (NCT03131648); ECZTRA 2 (NCT03160885); ECZTRA 3 (NCT03363854); and ECZTRA 6 (NCT03526861).

Supplementary info

Publication types, MeSH terms, Substances, Associated dataExpand

Full text links

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Cite

24

Ann Am Thorac Soc

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. 2025 Oct;22(10):1457-1459.

doi: 10.1513/AnnalsATS.202501-058VP.

Does Every Person with Asthma Need an Inhaled Corticosteroid?

Harold J Farber [1 2]

Affiliations Expand

- PMID: 40548906

- DOI: 10.1513/AnnalsATS.202501-058VP

No abstract available

Full text links

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Cite

25

Observational Study

Nitric Oxide

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. 2025 Oct:158:62-66.

doi: 10.1016/j.niox.2025.06.003. Epub 2025 Jun 11.

Appearances can be deceiving: differences in FeNO values among COPD and severe asthmatic patients stratified according to peripheral eosinophilic count

Claudio Candia [1], Silvestro Ennio D'Anna [2], Maria D'Amato [3], Francesco Cappello [4], Andrea Motta [5], Mauro Maniscalco [6]

Affiliations Expand

- PMID: 40513768

- DOI: 10.1016/j.niox.2025.06.003

Abstract

Eosinophilic COPD (eCOPD) and eosinophilic severe asthma (eSA) appear to share relevant clinical features, including responsiveness to steroids and higher

exacerbation rates. However, data on the expression of T2-high inflammation biomarkers and, in particular comparison of fractional exhaled nitric oxide (FeNO) levels between the two diseases is lacking. The aim of the current retrospective observational study was to investigate whether FeNO values might differ between eCOPD and eSA patients. Sixty patients with SA and 40 with COPD were enrolled. They were divided in four groups: eosinophilic COPD (eCOPD) and eosinophilic severe asthma (eSA), if the blood eosinophil count (BEC) was ≥300 cells/μL; non-eosinophilic COPD (neCOPD) and non-eosinophilic severe asthma (neSA) if the BEC was <100 cells/μL. FeNO values, lung function and demographic data were compared between the groups. Overall, COPD patients were older, with a higher prevalence of males and had more impaired lung function than asthmatic patients. When comparing FeNO levels among the four groups, a significant difference was found between eCOPD and eSA patients (p = 0.001), as well as eCOPD and neCOPD patients (p = 0.021). Finally, neCOPD patients showed significantly lower FeNO values in comparison with neSA patients (p = 0.005). Such results were confirmed after adjusting for age, sex, and smoking history. Our preliminary results hint at the possibility that, despite an apparently similar eosinophilic phenotype, eCOPD patients might present with different FeNO values in comparison with eSA patients, possibly reflecting different underlying disease mechanisms.

Keywords: Biomarker; COPD; Disability; Eosinophil; Exhaled nitric oxide; FeNO; Occupational medicine; Outcome; Precision medicine; Severe asthma.

Conflict of interest statement

Declaration of competing interest M.M. reports grants for his institution from AstraZeneca and GlaxoSmithKline, and payments or honoraria for presentations or educational events from GlaxoSmithKline, Chiesi, and Damor Farmaceutici. All these are outside the scope of this manuscript. All the other Authors declair no conflicts of interest.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links

Proceed to details

Cite

26

Multicenter Study

J Asthma

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. 2025 Oct;62(10):1651-1655.

doi: 10.1080/02770903.2025.2513056. Epub 2025 Jun 4.

Management of asthma exacerbations in pediatric emergency departments across the United States

Melisa S Tanverdi [1], Isabella Zaniletti [2], Nidhya Navanandan [1], Isabel Hardee [3], Andrew H Liu [4], Rakesh D Mistry [5]

Affiliations Expand

- PMID: 40445144
- PMCID: PMC12236050 (available on 2026-06-04)
- DOI: 10.1080/02770903.2025.2513056

Abstract

Objectives: There are 750,000 emergency department (ED) visits by children for asthma exacerbations in the United States annually. Despite changing evidence and epidemiology, there have not been recent assessments of acute asthma prevalence, management, and outcomes from pediatric EDs. This 40-center retrospective evaluation utilizes the Pediatric Hospital Information System to characterize pediatric ED asthma presentations from 2015-2020.

Study design: Children 2-18 years with asthma ICD-9/10 code and receipt of albuterol were included. Demographics, Child Opportunity Index (COI), ED management, return visits, and adjusted costs were evaluated. Data were summarized using standard descriptive statistics and trends assessed using Mann-Kendall trend test.

Results: There were 414,264 encounters made by 256,209 unique patients; 21% had >1 visit in 12 months. Median age was 6 years, 61.6% male, 44.5% Black, and 68.5% publicly insured; 58.3% of visits were by patients with very low/low COI. Systemic corticosteroids were administered in 86.3% of visits; 52.7% used dexamethasone. Chest radiographs were obtained in 23% of encounters. Most (74.9%) encounters resulted in ED discharge with a downward trend of visits for exacerbations per 1,000 ED visits of -9.77, 95% CI [-9.99,-9.54], increase in disposition to intensive care unit of 2.01 [1.87,2.41] and decrease in home/other of -3.77 [-4.34,-3.20]. There was no significant trend in return visits. Total adjusted costs were ~$900 million.

Conclusions: ED visits for asthma remain frequent and disproportionately affect children with lower social determinants of health. Dexamethasone has not been widely adopted as corticosteroid of choice and use of ancillary testing continues, highlighting opportunities for improvement in asthma care.

Keywords: Children; database; demographics; disposition; multicenter; testing; treatment.

Conflict of interest statement

Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

Declaration of interest: The authors report there are no competing interests to declare

- **13 references**

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

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

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Ann Otol Rhinol Laryngol

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. 2025 Oct 1:34894251372315.

doi: 10.1177/00034894251372315. Online ahead of print.

Clinical Efficacy of Spray-Type Nasal Allergen Blocker as Adjuvant Treatment for Pediatric Allergic Rhinitis

Mingyu Zhou [1], Xin Wang [1], Jing Li [1], Wenjun Ji [1], Dongsheng Gao [1], Tiantian Zhang [1]

Affiliations Expand

- **PMID: 41031654**

- **DOI: 10.1177/00034894251372315**

Abstract

Objective: To evaluate the clinical efficacy of Spray-Type Nasal Allergen Blocker as an adjuvant therapy for pediatric allergic rhinitis (AR).

Methods: Eighty-two pediatric AR patients aged 4 to 14 years were included in this retrospective study and divided into 2 groups based on the treatments documented

in their medical records: one treated with Mometasone Furoate Aqueous Nasal Spray (n = 38) and the other with a combination of a Spray-Type Nasal Allergen Blocker and Mometasone Furoate Aqueous Nasal Spray (n = 44).

Results: After 4 weeks of treatment, the total effective rate, the serum levels of IFN-γ, TGF-β, nasal ventilation area, ciliary movement rate, and pediatric Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ) scores were higher in the Combination group than in Mometasone group, while the Total Nasal Symptom Score (TNSS) and nasal resistance were lower in the Combination group ($P < .05$).

Conclusion: Combination of Spray-Type Nasal Allergen Blocker and Mometasone Furoate Aqueous Nasal Spray exhibits promising results in the treatment of pediatric AR compared to Mometasone Furoate Aqueous Nasal Spray alone.

Keywords: Mometasone Furoate Aqueous Nasal Spray; Spray-Type Nasal Allergen Blocker; allergic rhinitis; interferon-γ; transforming growth factor-β.

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Allergy

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. 2025 Oct 1.

doi: 10.1111/all.70085. Online ahead of print.

Long-Term, Real-World Effectiveness of Allergen Immunotherapy in Children and Adolescents With Allergic Rhinitis and Asthma

Christian Woehlk [1 2], Thomas Stranzl [2], Marco Contoli [3], Nick Freemantle [4], Andreas Kallsoy Slaettanes [2], Julie Rask Larsen [2], Celeste Porsbjerg [1], Benedikt Fritzsching [5]

Affiliations Expand

- PMID: 41031547

- DOI: 10.1111/all.70085

Abstract

Background: Respiratory allergies often begin in childhood and can progress over time, leading to increased disease burden. Allergen immunotherapy (AIT) is the only

causal treatment for allergic respiratory diseases with disease-modifying potential. While randomised trials support its efficacy in controlling allergic rhinitis (AR) and asthma symptoms, long-term real-world data in children remain limited.

Methods: This paediatric study (n = 11,036) was conducted within the pre-defined framework of the REACT study, based on protocol-specified objectives. Children (< 18 years) with physician-diagnosed AR, with or without pre-existing asthma, were included. AIT-treated patients were matched 1:1 to non-AIT controls. Effectiveness was assessed over 9 years by comparing AR and asthma medication prescriptions, using a public database covering all reimbursable AIT products. Relative differences were calculated across the full observation period.

Results: AIT-treated children (mean age 11.4 years; 62.1% male) exhibited greater reductions in AR medication use than controls (additional 9% reduction beyond 61% in controls). In children with asthma, AIT was associated with additional reductions in asthma medication use (-21% beyond -48% in controls), severe exacerbations (-21% beyond -36%), and new oral corticosteroid prescriptions (-33% beyond -41%). Age stratification revealed more pronounced AR medication reductions in younger children (0-11 years) than in adolescents (12-17 years).

Conclusion: This large-scale, real-world study supports the long-term effectiveness of AIT in children with AR, with or without asthma. The findings reflect improved disease control and suggest a disease-modifying effect of AIT. Early intervention, particularly in younger children, may help mitigate the progression of allergic disease.

Keywords: allergen immunotherapy; allergic rhinitis; asthma; children; prevention; real-world evidence.

- 38 references

Supplementary info

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3

Review

Sleep Med

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. 2025 Oct:134:106705.

doi: 10.1016/j.sleep.2025.106705. Epub 2025 Jul 30.

Frequency of obstructive sleep apnea in patients with asthma or allergic rhinitis: a systematic review and meta-analysis

Nuno Barros Ferreira [1], Alexandra Ponte [2], Ana Castelo Grande [3], Ana Cláudia Pimenta [3], Cláudia Sofia Pinto [3], Jean Bousquet [4], Marta Drummond [5], Bernardo Sousa-Pinto [6]

Affiliations Expand

- PMID: 40774162

- DOI: 10.1016/j.sleep.2025.106705

Free article

Abstract

Background: Asthma and allergic rhinitis (AR) are prevalent respiratory diseases that often coexist with obstructive sleep apnea (OSA). The objective of this study was to evaluate whether asthma or AR are associated with a higher frequency of OSA.

Methods: We performed a systematic review including cross-sectional and cohort studies that evaluated adult participants with and without asthma or AR and reported OSA diagnosed via polysomnography. We searched PubMed, Web of Science, and Scopus. Risk of bias was assessed using the ROBINS-E tool. Certainty of evidence was evaluated using the GRADE Framework. A random-effects meta-analysis of odds ratios (OR) to quantify the association between asthma or AR and OSA was performed.

Results: We included 12 studies (N = 19,203 participants). The meta-analysis indicated a higher frequency of OSA in AR patients (OR = 2.4; 95 %CI = 1.1; 5.3) compared to patients without the disease. In overall patients with asthma, the association with OSA (OR = 1.4; 95 %CI = 0.9; 2.2) was weaker than that observed in patients with moderate to severe asthma (OR = 10.1; 95 % CI = 1.3; 81.7). Patients with asthma exhibited slightly higher apnea-hypopnea index and oxygen desaturation index, along with lower mean oxygen saturation, compared to patients without asthma.

Conclusions: This meta-analysis identified an association between AR or asthma (particularly moderate to severe asthma) and OSA. Future research should address risk assessment of OSA for asthma and AR patients through prospective cohort studies, controlling for referral bias and asthma severity.

Keywords: Allergic rhinitis; Asthma; Meta-analysis; Obstructive sleep apnea; Systematic review.

Conflict of interest statement

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

Supplementary info

Publication types, MeSH termsExpand

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Rhinology

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. 2025 Oct 1;63(5):584-590.

doi: 10.4193/Rhin24.378.

Establishing validity of a novel patient-centered and directly measurable definition of acute exacerbation of chronic rhinosinusitis

F A Houssein [1], A R Sedaghat [1], K M Phillips [1]

Affiliations Expand

- PMID: 40674772

- DOI: 10.4193/Rhin24.378

Abstract

BACKGROUND A patient-centered and directly measurable definition for acute exacerbation of chronic rhinosinusitis (AECRS) has been developed as "a flare up of symptoms beyond day-to-day variation, lasting at least 3 days, and to which a distinct negative impact on a patient's quality of life (QOL) or functionality can be attributed". Our aim is to understand how this definition correlates with previously used metrics.

Methodology: Cross-sectional study of chronic rhinosinusitis (CRS) patients. The number of AECRS (using this novel definition), courses of CRS-related systemic antibiotics and corticosteroids taken for these AECRS, and number of asthma exacerbations in the past 6 months was queried. Disease-specific quality of life was measured using the 22-item Sinonasal Outcome Test.

Results: A total of 237 CRS patients were enrolled. In the 6-month period prior to study enrollment, the mean number of AECRS was 4.2 while the mean number of systemic antibiotics or corticosteroids taken for these AECRS was 1.6 reflecting patients received rescue medication for 33% of AECRS. The number of AECRS was weakly correlated with number of systemic rescue medications and SNOT-22 score. For asthmatic CRS patients, numbers of AECRS and asthma exacerbations were correlated. Finally, comorbidities were associated with higher AECRS frequency by 29% in migraine and 41% in active tobacco users.

Conclusions: We achieved our aim by showing the AECRS definition correlates with systemic rescue medication usage, disease-specific QOL and asthma exacerbations. Our results demonstrate that indirect measures of AECRS may not capture all AECRS. Furthermore, comorbid migraine and tobacco use are associated with AECRS frequency.

Supplementary info

MeSH terms, SubstancesExpand

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5

Multicenter Study

Rhinology

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. 2025 Oct 1;63(5):591-599.

doi: 10.4193/Rhin25.104.

Multi-centric real-world effectiveness of mepolizumab in severe chronic rhinosinusitis with nasal polyps in Germany

F B Rhold [1], J Hagemann [2], L Klimek [2], P Huber [3], M Gr Ger [3], A G Loth [4], B P Ernst [4], C Beutner [5], T Dombrowski [6], U F Rster-Ruhrmann [7], H Olze [7], M Cuevas [8], N Gunder [8], J Malanda [9], M Laudien [9], T Albrecht [10], C Matthias [11], S Becker [10]

Affiliations Expand

- PMID: 40621839

- DOI: 10.4193/Rhin25.104

Abstract

Background: Within the last years, monoclonal antibodies (biologicals) have revolutionized the treatment of chronic rhinosinusitis with nasal polyps (CRSwNP) and significantly improved symptom control in otherwise refractory cases. The effectiveness of the biological mepolizumab, an IL-5 receptor antibody, has not yet been investigated extensively. This multi-centric study assesses its impact on a large German patient cohort including biological naive and switched patients.

Methodology: In this retrospective multi-centric study, patients with the diagnosis of severe CRSwNP treated with mepolizumab by German tertiary referral centers were included. Data were collected retrospectively from patient records. The change from baseline regarding patient reported symptom control, serum biomarkers, nasal polyp score (NPS), and sense of smell were analysed over a course of up to 30 months.

Results: 96 patients from 8 tertiary treatment centers were included, 36.5% female, with a mean age of 54.1Â±14.3 years. Patient reported outcome measures, smell, and NPS improved significantly within 6 months after treatment initiation or switch from a different biological to mepolizumab. Change from baseline in outcome parameters was smaller in the switch-group, whereas comorbid asthma indicated greater treatment success.

Conclusions: Our real-world data show a sustained therapeutic effect of mepolizumab in CRSwNP, including a large proportion of patients who were previously treated with a different biological. This study is the largest real-world cohort to date depicting realistic treatment and disease situations, confirming a broad range of indication for mepolizumab in severe CRSwNP.

Meta-Analysis

Rhinology

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. 2025 Oct 1;63(5):514-522.

doi: 10.4193/Rhin25.031.

Chronic rhinosinusitis and cognition: a systematic review and meta-analysis

Esther Yanxin Gao [1], Benjamin Kye Jyn Tan [2], Kai Lin Chan [3], Clara Xin Yi Chia [4], Claire Jing-Wen Tan [5], Brian Sheng Yep Yeo [4], Xuandao Liu [6], Laura Tay [7], Ecosse L Lamoureux [8], Neville Wei Yang Teo [9], Tze Choong Charn [10]

Affiliations Expand

- PMID: 40619980

- DOI: 10.4193/Rhin25.031

Abstract

Background: Recent clinical studies have alluded to an association between chronic rhinosinusitis (CRS) and cognition, possibly mediated by local and systemic neuroinflammation. This meta-analysis seeks to clarify the association of CRS diagnosis or treatment with cognitive function and dementia.

Methodology: Two blinded reviewers searched PubMed, Embase, and Scopus for studies comparing cognitive function (global/domain-specific) or dementia in patients with/without CRS or pre/post-CRS treatment. The risk of bias was assessed using ROBINS-I/ROBINS-E. Random-effects models were used to pool the ratio of means (RoM) for cognitive scores and the odds ratio (OR) for dementia.

Results: From 1,149 records, 10 studies encompassing 107,610 patients were included. CRS was associated with poorer global cognitive function compared to healthy. CRS treatment was associated with improvements from baseline in processing speed and working memory. There was no significant cross-sectional association between CRS and dementia.

Conclusion: CRS is associated with 9% poorer global cognitive function, while CRS treatment is associated with 8-9% improvements in processing speed and working memory. Larger longitudinal studies are needed to fully elucidate these relationships.

Supplementary info

Publication types, MeSH termsExpand

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7

Laryngoscope

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. 2025 Oct;135(10):3542-3549.

doi: 10.1002/lary.32265. Epub 2025 May 10.

Bariatric Surgery Lowers Incidence of Chronic Rhinosinusitis and Functional Endoscopic Sinus Surgery

Shvetali Thatte [1,2], Mohamad R Chaaban [1]

Affiliations Expand

- PMID: 40346843
- PMCID: PMC12475541
- DOI: 10.1002/lary.32265

Abstract

Objective: This study evaluates if undergoing bariatric surgery for patients with obesity results in a decreased incidence of chronic rhinosinusitis (CRS) and fewer functional endoscopic sinus surgeries (FESS).

Methods: A retrospective cohort analysis was conducted using the US Collaborative Network on the TriNetX Analytics Platform. Adult patients with obesity (most recent value of BMI ≥ 30 kg/m^2) were included and separated into two cohorts: one that underwent bariatric surgery (n = 53,454) and another that did not (n = 17,006,670). Patients in the two cohorts were matched by age, gender, race, tobacco use, and asthma and allergic rhinitis comorbidities. Outcomes analyzed included the incidence of CRS and FESS, identified by ICD-10 and CPT codes, respectively, within 2, 5, and 10 years. Patients with outcomes prior to the follow-up window were excluded.

Results: Two years after surgery, patients with obesity who underwent bariatric surgery had a decreased risk of developing CRS, with a relative risk (RR) of 0.79

(95% CI: 0.70-0.88). The risk remained lower at 5- and 10-year post-surgery, with a RR of 0.79 (95% CI: 0.73-0.86) and 0.73 (CI: 0.68-0.79), respectively. For patients with obesity and CRS, undergoing bariatric surgery resulted in fewer FESS at 2, 5, and 10 years after surgery, with a RR of 0.52 (95% CI: 0.35-0.79), 0.56 (95% CI: 0.42-0.76), and 0.50 (95% CI: 0.38-0.67), respectively.

Conclusion: In patients with obesity, bariatric surgery is associated with a decreased incidence of CRS and fewer FESS. Further studies are needed to confirm results and consider other comorbidities and medical interventions.

Keywords: bariatric surgery; chronic rhinosinusitis; obesity.

Conflict of interest statement

The authors declare no conflicts of interest.

- Cited by 1 article
- 39 references
- 1 figure

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Randomized Controlled Trial

Laryngoscope

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. 2025 Oct;135(10):3550-3555.

doi: 10.1002/lary.32250. Epub 2025 May 7.

A Randomized, Double-Blind Study Comparing Corticosteroid Irrigations and Nasal Sprays for Polyp Size Reduction in CRSwNP

Chakapan Promsopa [1], Thanapa Quannuy [1], Suchet Chinpairoj [1], Virat Kirtsreesakul [1], Usaporn Prapaisit [1], Nichana Suwanparin [1]

Affiliations Expand

- PMID: 40331800

- DOI: 10.1002/lary.32250

Abstract

Objective: To compare the efficacy of corticosteroid irrigation (CSI) and intranasal corticosteroid spray (INCS) in reducing polyp size, improving nasal symptoms, and assessing HPA-axis suppression in non-surgical patients with chronic rhinosinusitis with nasal polyps (CRSwNP).

Methods: Twenty-four patients from the Allergy and Rhinology Clinic, Songklanagarind Hospital, were randomized into: CSI + placebo spray (n = 13): Budesonide irrigation (0.5 mg/day) + saline spray. Placebo irrigation + INCS (n = 11): Saline irrigation + budesonide spray (512 mcg/day). Nasal symptoms were assessed using VAS-TNSS and SNOT-22. Polyp grading was evaluated via video nasal endoscopy using mLKS and Lildholdt's scale. Serum cortisol levels were measured at baseline, 4-12 weeks.

Results: After 12 weeks, the CSI + placebo spray group showed a significant reduction in mLKS scores (8.54 ± 1.94 vs. 4.82 ± 1.94; $p < 0.001$), with greater improvement than the placebo irrigation + INCS group (Δ4 (3, 4) vs. Δ1 (0, 2); $p = 0.003$). VAS-TNSS and SNOT-22 scores showed no significant differences. Serum cortisol levels remained normal.

Conclusion: Corticosteroid irrigation is more effective than nasal sprays in improving mLKS scores in non-surgical CRSwNP patients after 12 weeks, with no evidence of HPA-axis suppression.

Keywords: adult rhinology; allergy/rhinology; clinical; outcomes/cost-effectiveness; skull base.

- 17 references

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

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Randomized Controlled Trial

Ear Nose Throat J

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. 2025 Oct;104(10):NP675-NP684.

doi: 10.1177/01455613241299640. Epub 2024 Nov 11.

Topical Therapies for Management of Olfactory Dysfunction in Chronic Rhinosinusitis with Nasal Polyps: Steroid-Eluting Stents

Zhidi Zhang [1], Qiang Zuo [1], Yali Du [1], Hailing Jiang [1], Jiayue Wang [1], Furong Ma [1], Yinghong Zhang [1]

Affiliations Expand

- **PMID: 39529438**

- **DOI: 10.1177/01455613241299640**

Free article

Abstract

Objectives: Steroid-eluting stent implantation after endoscopic sinus surgery (ESS) effectively alleviates postoperative symptoms and polyp recurrence in patients with chronic rhinosinusitis with nasal polyps (CRSwNP). However, the efficacy of steroid-eluting stents for the treatment of olfactory dysfunction in CRSwNP and the influencing factors therein have not been studied.

Methods: Fifty-nine patients with CRSwNP with olfactory dysfunction from Peking University Third Hospital who were hospitalized for ESS were recruited and randomly divided into a stent group (n = 30) and a control group (n = 29), and were assessed for symptom scores, olfactory function, endoscopic findings, and type 2 inflammatory mediators (IL-4, IL-5, IL-13, IL-33, eotaxin-3, periostin) expression.

Results: Postoperative olfactory Visual Analogue Scale (VAS) scores, T&T olfactometer scores, SNOT-22 scores, and Lund-Kennedy (LK) scores were reduced in patients with CRSwNP ($P < .01$). Postoperative olfactory VAS scores, T&T olfactometer scores, SNOT-22 scores, and LK scores, IL-5, IL-13, and periostin were significantly lower in the stent group than in the control group ($P < .05$). Correlation analysis was performed and found that the postoperative olfactory VAS scores were strongly correlated with IL-5 and IL-13 ($r = .496$, $P < .001$ and $r = .289$, $P = .026$), and the postoperative T&T olfactometer scores were strongly correlated with IL-5 and IL-13 ($r = .553$, $P < .001$ and $r = .398$, $P = .002$).

Conclusions: Steroid-eluting stent implantation after ESS is an effective treatment for olfactory deficits in patients with CRSwNP and may be related to the stent's more effective reduction of local type 2 inflammatory mediators in the nasal cavity.

Keywords: chronic rhinosinusitis; olfactory dysfunction; steroid-eluting stents; type 2 inflammatory mediators.

Conflict of interest statement

Declaration of Conflicting InterestsThe author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

chronic cough

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Comparative Study

Lung

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. 2025 Oct 4;203(1):97.

doi: 10.1007/s00408-025-00853-z.

The Healthcare Resource Utilization of Patients with Refractory Chronic Cough Compared to Those with Non-Refractory Chronic Cough

Laurent Guilleminault [1 2 3], Clairelyne Dupin [4 5], Laurent Portel [6 5], Maeva Zysman [7 5], Thomas Flament [8 5], Pauline Roux [9 5], Nadège Costa [10 11 5], Michael Mounié [10 11 5]

Affiliations Expand

- **PMID: 41046288**

- **DOI: 10.1007/s00408-025-00853-z**

Abstract

Background: Refractory chronic cough (RCC) significantly impairs patient quality of life and poses a major challenge in clinical management. However, little is known about the healthcare resource utilization (HRU) of patients with RCC.

Objective: The goal of our study is to describe the HRU and associated costs of RCC patients and those with non-refractory chronic cough (non-RCC).

Methods: Patients with chronic cough were prospectively recruited from 6 centers in France. At 6 months, the patients were classified as having RCC or no RCC. A retrospective analysis was made using the French National Health Insurance Database (SNDS) in order to determine healthcare utilization for the one-year period preceding inclusion at the site and for the one-year period thereafter.

Results: Sixty-eight patients were included. Among them, 32 (47%) patients had RCC. There was no difference between groups regarding clinical data apart from cough duration (56.8 ± 59.5 months in the no RCC group vs. 139.3 ± 123.8 months in the RCC group, p = 0.002). Within 1 year prior to inclusion, there was no difference in terms of drug dispensations between the 2 groups. During the 1-year post-inclusion period, a significantly higher proportion of patients with RCC received at least one dispensation of opioids and amitriptyline compared to those with no RCC (8 (25%) vs. 2 (6%) for opioids, p = 0.038 and 14 (44%) vs. 3 (8%) for amitriptyline, p = 0.0015, respectively). Within 1 year after inclusion, more patients with RCC had attended speech pathologist visits in comparison to patients with no RCC (14 (44%) patients vs. 10 (28%) patients, p = 0.21, respectively). Total costs within 12 months prior to inclusion were 3,878€ [2,498 - 5,755€] for patients with no RCC and 5,159€ [3,426 - 7,138€] with RCC, but the difference was not significant. No change occurred in the 1-year period following inclusion.

Conclusion: RCC has a high healthcare utilization with substantial costs.

Keywords: Cost; Cough; Refractory.

Conflict of interest statement

Declarations. Conflict of interests: LG has been an investigator in clinical trials for AstraZeneca, MSD, and Novartis; received grants or consultation fees from AstraZeneca, GlaxoSmithKline, Novartis, and Sanofi-Regeneron, Bayer, Chiesi, and MSD. CD has reported receiving personal fees or non-financial support from Astra Zeneca, Chiesi, GSK, Novartis, and Sanofi outside the submitted work. LP has received consulting fees from Astra Zeneca, Dom AIR, Sanofi-Regeneron, and SOS Oxygène not related to the work submitted. MZ has been an investigator in clinical trials for AstraZeneca, GSK, and Takeda; received grants or consultation fees from AstraZeneca, AVAD, GlaxoSmithKline, Novartis, and Sanofi-Regeneron, Chiesi, and Menarini not related to the work submitted. TF has reported receiving non-financial support from Astra Zeneca and Boehringer Ingelheim not related to the work submitted. PRC has reported receiving personal fees or non-financial support from Astra Zeneca, Chiesi, GSK, Novartis, and Sanofi outside the submitted work. The other co-authors declare no disclosure of interest.

- **28 references**

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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Observational Study

Lancet Respir Med

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. 2025 Oct;13(10):911-920.

doi: 10.1016/S2213-2600(25)00160-2. Epub 2025 Aug 27.

Symptoms, risk of future exacerbations, and response to long-term macrolide treatment in bronchiectasis: an observational study

Oriol Sibila [1], Jamie Stobo [2], Lidia Perea [1], Yong-Hua Gao [3], Jin-Fu Xu [4], Holly Lind [2], Kateryna Viligorska [2], Arietta Spinou [5], Eva Polverino [6], Felix C Ringshausen [7], Montserrat Vendrell [8], Pierre-Régis Burgel [9], Charles S Haworth [10], Michael R Loebinger [11], Natalie Lorent [12], Raja Dhar [13], Hayoung Choi [14], Sanjay H Chotirmall [15], Anthony De Soyza [16], John R Hurst [17], Jeremy S Brown [17], Menno van der Eerden [18], Paula Kauppi [19], Emma D Johnson [2], Raul Mendez [20], Katerina Dimakou [21], Apostolos Bossios [22], Antoni Torres [1], Francesco Blasi [23], Michal Shteinberg [24], Stuart J Elborn [25], Pieter C Goeminne [26], Stefano Aliberti [27], Lata Jayaram [28], Noel Karalus [29], Steven L Taylor [30], Megan L Martin [31], Lucy D Burr [31], Conroy Wong [32], Lotte Terpstra [33], Josje Altenburg [34], Wim Boersma [33], James D Chalmers [35]

Affiliations Expand

- PMID: 40885209

- DOI: 10.1016/S2213-2600(25)00160-2

Free article

Abstract

Background: Previous studies have suggested that daily symptoms are a marker of bronchiectasis disease activity and could therefore identify patients at increased risk of exacerbation. However, international bronchiectasis guidelines recommend long-term macrolide treatment only in patients with three or more exacerbations per year. We aimed to investigate if symptoms independently predict future exacerbations and therefore identify additional responders to long-term macrolide treatment.

Methods: We used data from the EMBARC registry, a multicentre international bronchiectasis database. Baseline symptoms were evaluated with the quality-of-life bronchiectasis questionnaire respiratory symptoms score (QoL-B-RSS), followed-

up for at least 1 year, and were related to the future risk of exacerbations. We subsequently conducted a post-hoc pooled analysis of three randomised controlled trials of macrolides (ie, BLESS, BAT, and EMBRACE) in 341 participants with bronchiectasis to determine if baseline symptoms were associated with response to long-term macrolide treatment, using a negative binomial regression model.

Findings: 9466 patients from the 19 324 patients included in the EMBARC registry had available QoL-B-RSS assessment at baseline and 1-year follow-up. The median age was 68 years (IQR 58-74), 5763 (60·9%) were female, and 3703 (39·1%) were male. The median Bronchiectasis Severity Index score was 7 (4-10) and Pseudomonas aeruginosa was present in the sputum of 2041 (21·6%) patients within 12-months of baseline. Previous exacerbations (rate ratio (RR) for every additional exacerbation 1·11, 95% CI 1·10-1·12; p<0·0001) and symptoms (RR for every 10 points lower QoL-B-RSS 1·10, 1·09-1·11; p<0·0001) were identified as independent risk factors for future exacerbations. The number of exacerbations during 1-year of follow-up was similar between patients with three or more exacerbations at baseline and average symptom scores (QoL-B-RSS 60-70; RR 1·58, 95% CI 1·48-1·69) and the group with no previous exacerbations but high symptom scores (RR 1·55, 1·41-1·70). The same pattern was observed in the post-hoc analysis of randomised controlled trials, both in the macrolide and placebo groups. The number-needed-to-treat to prevent exacerbations with long-term macrolide therapy was similar for patients selected based on frequent exacerbations (1·45, 95% CI 1·08-2·24) and in those with few previous exacerbations, but high symptom scores 1·43 (1·06-2·18).

Interpretation: Our results suggest that symptoms are an independent risk factor for future exacerbations in bronchiectasis. Patients who are highly symptomatic derive a similar benefit from macrolide treatment as patients with a high baseline exacerbation frequency.

Funding: EU, European Federation of Pharmaceutical Industries and the Associations Innovative Medicines Initiative Inhaled Antibiotics in Bronchiectasis and Cystic Fibrosis Consortium, European Respiratory Society.

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

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Editorial

Enferm Infecc Microbiol Clin (Engl Ed)

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. 2025 Oct;43(8):461-463.

doi: 10.1016/j.eimce.2025.06.008.

Bronchiectasis: Is there life beyond Pseudomonas aeruginosa?

Grace Oscullo [1], Jose Daniel Gómez-Olivas [1], Miguel Angel Martinez-Garcia [2]

Affiliations Expand

- PMID: 41043887

- DOI: 10.1016/j.eimce.2025.06.008

No abstract available

Supplementary info

Publication typesExpand

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Curr Opin Pulm Med

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. 2025 Nov 1;31(6):620-621.

doi: 10.1097/MCP.0000000000001216. Epub 2025 Oct 2.

The rapidly changing paradigms for the diagnosis and treatment of cystic fibrosis, bronchiectasis, and primary ciliary dyskinesia

Mark L Metersky [1], Douglas J Conrad [2], Adam J Shapiro [3]

Affiliations Expand

- PMID: 41037285

- DOI: 10.1097/MCP.0000000000001216

No abstract available

Full text links

Cite

3

BMC Pulm Med

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. 2025 Oct 1;25(1):441.

doi: 10.1186/s12890-025-03904-6.

Bronchoalveolar lavage proteomics in exacerbation of bronchiectasis

Ju Yeon Lee [#1,2], Jiyoul Yang [#3], Jin Young Kim [1,2], Yeji Do [4], Min-Sik Kim [4], Dong Eun Kye [5], Geonhui Min [6], In-Sook Jeon [5], Eung-Gook Kim [5], Joong Kook Choi [5], Minjae Choi [7], Hyun Lee [#8], Bumhee Yang [#9]

Affiliations Expand

- PMID: 41034841

- PMCID: PMC12487217

- DOI: 10.1186/s12890-025-03904-6

Abstract

Background: The molecular pathophysiology underlying the development of bronchiectasis with exacerbation at the proteomic level has not been clarified using bronchoalveolar lavage fluid samples. This study aimed to evaluate the bronchoalveolar lavage fluid inflammatory profiles associated with exacerbation of bronchiectasis.

Methods: We analyzed the bronchoalveolar lavage fluid specimens from 4 patients in the exacerbation status and 4 patients in a stable status using liquid chromatography-tandem mass spectrometry.

Results: A total of 1,577 proteins were identified using proteomic analysis, with 127 differentially expressed proteins. Of 127 differentially expressed proteins, 23 proteins showed more than 2-fold differences between exacerbation and stable status groups. The exacerbation status was associated with 18 upregulated proteins (TPI1, CRP, BPI, ORM1, PTPRE, S100A9, BPY2, TPM4, ERVFC1-1, CYS1, CLEC3B, S100A8, PSAT1, NDUFA10, MDGA1, SPRR3, ALDOA, and PSMB2) and five

downregulated proteins (MUC5B, HSPE1, KLK13, IGHA1, and MUC5AC). Pathway analysis revealed that the neutrophil degranulation pathway (R-HSA-6798695) was the most enriched pathway in these proteins, followed by the C-type lectin receptor pathway (R-HSA-5621481).

Conclusion: The bronchoalveolar lavage fluid protein expression in patients in the exacerbation status of bronchiectasis was significantly different from that in patients in the stable status, indicating that neutrophil degranulation and C-type lectin receptor pathways are the most enriched pathways during exacerbation.

Keywords: Bronchiectasis; Bronchoalveolar lavage; Neutrophil degranulation; Proteomics.

Conflict of interest statement

Declaration. Ethics approval and consent to participate: The study protocol was approved by the Institutional Review Board of the Chungbuk National University Hospital (application no. 2021-10-007). Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- 38 references
- 4 figures

Supplementary info

MeSH termsExpand

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4

Clin Respir J

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. 2025 Oct;19(10):e70128.

doi: 10.1111/crj.70128.

The Correlation Between NLR, RDW, and Pulmonary Hypertension in Patients With Bronchiectasis and Chronic Obstructive Pulmonary Disease Overlap Syndrome

Lingling Hu [1], Zhenxin Liu [1], Jiangtao Yu [2], Zhongfei Yang [1], Daxi Feng [3]

Affiliations Expand

- **PMID: 41022427**
- **PMCID: PMC12479108**
- **DOI: 10.1111/crj.70128**

Abstract

Introduction: Based on the analysis of the relationship between neutrophil to lymphocyte ratio (NLR) and red blood cell distribution width (RDW) and pulmonary hypertension (PH) in patients with bronchiectasis and chronic obstructive pulmonary disease overlap syndrome (BCOS), this paper aims to explore the indexes that not only represent the severity of patients with BCOS overlapping PH but also are highly related to BCOS overlapping PH.

Methods: The clinical data of 159 patients with BCOS admitted to Qilu Hospital of Shandong University Dezhou Hospital from January 2019 to November 2024 were collected and analyzed. All the patients had complete color Doppler echocardiography at this hospital and were separated into experimental group (106 cases, BCOS with PH) and control group (53 cases, BCOS not combined with PH group), according to whether they were complicated with pulmonary hypertension or not. And then the experimental group was divided into mild, moderate and severe subgroups. The correlation of NLR, RDW with pulmonary artery systolic blood pressure (PASP) in BCOS patients was analyzed. And whether there were differences or not between NLR and RDW among experimental group, control group as well as subgroups was compared. Furthermore, receiver operating characteristic (ROC) curves were constructed to evaluate the efficacy of NLR and RDW in distinguishing between "PH-complicated" and "non-PH-complicated" statuses among BCOS patients at the cross-sectional level.

Results: First, the level of NLR and RDW in experimental group was higher than those in control group, in addition the difference was statistically significant ($p < 0.05$). Second, significant intergroup differences in NLR and RDW levels were observed among the three subgroups of the experimental group (NLR: $p < 0.001$; RDW: $p = 0.011$). Specifically, both NLR and RDW levels in the severe PH subgroup were significantly higher than those in the mild PH subgroup (NLR: adjusted $p < 0.001$; RDW: adjusted $p = 0.009$). Additionally, NLR levels in the severe PH subgroup were higher than those in the moderate PH subgroup (adjusted $p = 0.011$), whereas no statistically significant difference in RDW levels was noted between the severe and moderate PH subgroups (adjusted $p = 0.148$). Furthermore, there were no significant differences in NLR or RDW levels between the mild and moderate PH subgroups (NLR: adjusted $p = 0.196$; RDW: adjusted $p = 0.607$). Third, the level of NLR and RDW was positively correlated with PASP ($r = 0.294, 0.259$; $p < 0.05$). Fourth, Multivariate logistic regression analysis revealed that decreased PO_2, NLR, and RDW are independent risk factors for PH development in BCOS patients (all $p < 0.05$). Fifth, ROC curve results showed the areas under the curve (AUC) of NLR, RDW and their combined detection in differentiating BCOS patients with and without PH were 0.628, 0.751, and 0.756 respectively. In particular, RDW performed

better than NLR in differentiating with regard to discriminative ability. Furthermore, compared to RDW, the AUC of the combined detection was higher, meanwhile, its specificity was greatly enhanced than both single indicators. These results indicate that the combined detection exhibits better capability in identifying PH complicating BCOS at the cross-sectional level.

Conclusions: The level of NLR and RDW is related to the severity of pulmonary arterial pressure in patients with BCOS. The two indicators can serve as a significantly relevant factor for pulmonary hypertension complicating BCOS.

Keywords: bronchiectasis and chronic obstructive pulmonary disease overlap syndrome; neutrophil to lymphocyte ratio; pulmonary hypertension; red blood cell volume distribution width.

Conflict of interest statement

The authors declare no conflicts of interest.

- 29 references
- 1 figure

Supplementary info

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Editorial

Open Respir Arch

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. 2025 Jul 23;7(4):100473.

doi: 10.1016/j.opresp.2025.100473. eCollection 2025 Oct-Dec.

Present and Future of Biological Treatments in Bronchiectasis

Grace Oscullo [1 2 3], Jose Daniel Gómez-Olivas [1 2 3], Miguel Angel Martinez-Garcia [1 2 3]

Affiliations Expand

- PMID: 40977912

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- DOI: 10.1016/j.opresp.2025.100473

No abstract available

- 19 references

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Review

Respirology

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. 2025 Oct;30(10):926-934.

doi: 10.1111/resp.70113. Epub 2025 Aug 31.

Contemporary Concise Review 2024: Respiratory Infections

Naoyuki Miyashita [1]

Affiliations Expand

- PMID: 40887716

- DOI: 10.1111/resp.70113

Abstract

Since public health measures against COVID-19 were relaxed, widespread outbreaks of respiratory infections such as influenza and respiratory syncytial virus (RSV), as well as infectious diseases transmitted by droplets and droplet nuclei, have been reported around the world. While there is evidence of antiviral drug efficacy against non-severe influenza, the emergence of two genetic mutations (I223V or S247N) that reduce susceptibility to neuraminidase inhibitors has been confirmed. Influenza vaccines are less effective in older people than in younger people; so high-dose influenza vaccines are recommended. RSV infection has a high disease burden among elderly people; however, vaccination is expected to limit or prevent severe disease. Macrolide-resistant strains of Mycoplasma species and Bordetella pertussis are common in East Asia, but an increase in resistant strains has also been observed in other Asian regions. Pneumonia in elderly people often leads to a decline in physical function. In a super-aging society, aspiration pneumonia occurs frequently. Hence, there is increasing awareness of the need for advance care planning discussions for pneumonia as well as malignant diseases. The use of inhaled steroids in bronchiectasis is not recommended because of the increased risk of infection; but in clinical practice, inhaled steroids are frequently used and are effective in some patients with bronchiectasis.

Keywords: Mycoplasma pneumoniae; COVID-19; advance care planning; influenza; macrolide-resistant strains; pertussis; respiratory syncytial virus.

- **109 references**

Supplementary info

Publication types, MeSH termsExpand

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Lancet Respir Med

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. 2025 Oct;13(10):863-864.

doi: 10.1016/S2213-2600(25)00244-9. Epub 2025 Aug 27.

A deep dive into existing data to inform clinical practice for adults with bronchiectasis

Anne B Chang [1]

Affiliations Expand

- PMID: 40885210

- DOI: 10.1016/S2213-2600(25)00244-9

No abstract available

Conflict of interest statement

I received fees to my institution for being an independent data management committee member for clinical trials for Moderna (COVID-19, Epstein–Barr virus, and respiratory syncytial virus vaccines), GlaxoSmithKline (for an unlicensed vaccine), and AstraZeneca (for a monoclonal antibody); fees for consulting on study designs for Zambon and Boehringer Ingelheim; airfares for travel from the European Respiratory Society and Boehringer Ingelheim; personal fees for being an author of two UpToDate chapters that are outside of the submitted work; and grants from the National Health and Medical Research Council (Senior Investigator L3 Fellowship GNT2025379) and National Health and Medical Research Council-managed grants (Medical Research Futures Fund).

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Observational Study

Lancet Respir Med

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. 2025 Oct;13(10):911-920.

doi: 10.1016/S2213-2600(25)00160-2. Epub 2025 Aug 27.

Symptoms, risk of future exacerbations, and response to long-term macrolide treatment in bronchiectasis: an observational study

Oriol Sibila [1], Jamie Stobo [2], Lidia Perea [1], Yong-Hua Gao [3], Jin-Fu Xu [4], Holly Lind [2], Kateryna Viligorska [2], Arietta Spinou [5], Eva Polverino [6], Felix C Ringshausen [7], Montserrat Vendrell [8], Pierre-Régis Burgel [9], Charles S Haworth [10], Michael R Loebinger [11], Natalie Lorent [12], Raja Dhar [13], Hayoung Choi [14], Sanjay H Chotirmall [15], Anthony De Soyza [16], John R Hurst [17], Jeremy S Brown [17], Menno van der Eerden [18], Paula Kauppi [19], Emma D Johnson [2], Raul Mendez [20], Katerina Dimakou [21], Apostolos Bossios [22], Antoni Torres [1], Francesco

Blasi [23], Michal Shteinberg [24], Stuart J Elborn [25], Pieter C Goeminne [26], Stefano Aliberti [27], Lata Jayaram [28], Noel Karalus [29], Steven L Taylor [30], Megan L Martin [31], Lucy D Burr [31], Conroy Wong [32], Lotte Terpstra [33], Josje Altenburg [34], Wim Boersma [33], James D Chalmers [35]

Affiliations Expand

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Free article

Abstract

Background: Previous studies have suggested that daily symptoms are a marker of bronchiectasis disease activity and could therefore identify patients at increased risk of exacerbation. However, international bronchiectasis guidelines recommend long-term macrolide treatment only in patients with three or more exacerbations per year. We aimed to investigate if symptoms independently predict future exacerbations and therefore identify additional responders to long-term macrolide treatment.

Methods: We used data from the EMBARC registry, a multicentre international bronchiectasis database. Baseline symptoms were evaluated with the quality-of-life bronchiectasis questionnaire respiratory symptoms score (QoL-B-RSS), followed-up for at least 1 year, and were related to the future risk of exacerbations. We subsequently conducted a post-hoc pooled analysis of three randomised controlled trials of macrolides (ie, BLESS, BAT, and EMBRACE) in 341 participants with bronchiectasis to determine if baseline symptoms were associated with response to long-term macrolide treatment, using a negative binomial regression model.

Findings: 9466 patients from the 19 324 patients included in the EMBARC registry had available QoL-B-RSS assessment at baseline and 1-year follow-up. The median age was 68 years (IQR 58-74), 5763 (60·9%) were female, and 3703 (39·1%) were male. The median Bronchiectasis Severity Index score was 7 (4-10) and Pseudomonas aeruginosa was present in the sputum of 2041 (21·6%) patients within 12-months of baseline. Previous exacerbations (rate ratio (RR) for every additional exacerbation 1·11, 95% CI 1·10-1·12; p<0·0001) and symptoms (RR for every 10 points lower QoL-B-RSS 1·10, 1·09-1·11; p<0·0001) were identified as independent risk factors for future exacerbations. The number of exacerbations during 1-year of follow-up was similar between patients with three or more exacerbations at baseline and average symptom scores (QoL-B-RSS 60-70; RR 1·58, 95% CI 1·48-1·69) and the group with no previous exacerbations but high symptom scores (RR 1·55, 1·41-1·70). The same pattern was observed in the post-hoc analysis of randomised controlled trials, both in the macrolide and placebo groups. The number-needed-to-treat to prevent exacerbations with long-term macrolide therapy was similar for patients selected based on frequent exacerbations (1·45, 95% CI 1·08-2·24) and in those with few previous exacerbations, but high symptom scores 1·43 (1·06-2·18).

Interpretation: Our results suggest that symptoms are an independent risk factor for future exacerbations in bronchiectasis. Patients who are highly symptomatic derive a similar benefit from macrolide treatment as patients with a high baseline exacerbation frequency.

Funding: EU, European Federation of Pharmaceutical Industries and the Associations Innovative Medicines Initiative Inhaled Antibiotics in Bronchiectasis and Cystic Fibrosis Consortium, European Respiratory Society.

Conflict of interest statement

Declaration of interests EP reports grants or contracts from Grifols; consulting fees from Insmed, Pari, Electromed, Grifols, and Chiesi; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from Insmed, Pari, Electromed, Grifols, Chiesi, and GSK; support for attending meetings and/or travel from Insmed; and participation on a Data Safety Monitoring Board or Advisory Board from Insmed. FCR reports grants or contracts from the German Center for Lung Research, the German Center for Infection Research (EU and European Federation of Pharmaceutical Industries and Associations), the iABC Consortium (including Alaxia, Basilea, Novartis, and Polyphor), the Mukoviszidose Institute, Novartis, Insmed Germany, Grifols, Bayer, and InfectoPharm, to their institution; consulting fees from Parion Sciences, Boehringer Ingelheim, Insmed, and Chiesi; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from I!DE Werbeagentur GmbH, Insmed, Grifols, Universitätsklinikum Frankfurt am Main, University Hospital Hamburg, AstraZeneca, and Sanofi; participation on a Data Safety Monitoring Board or Advisory Board for Insmed, Boehringer Ingelheim, Parion Sciences, and Chiesi; a leadership or fiduciary roles in other board, society, committee, or advocacy groups as a former coordinator of the ERN-LUNG Bronchiectasis Core Network, co-chair of the German Bronchiectasis Registry PROGNOSIS, a member of the SteerCo of the European Bronchiectasis Registry EMBARC, and principal investigator of the German Center for Lung Research; and fees for clinical trial participation paid to their institution from AstraZeneca, Boehringer Ingelheim, Insmed, Novartis, Parion Sciences, Recode, Ruhr University-Bochum, the University of Dundee, and Vertex. MV reports consulting fees from Chiesi; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from Insmed and Teva; support for attending meetings and/or travel from Pari, Chiesi, and Zambon; and participation on a Data Safety Monitoring Board or Advisory Board from Insmed. P-RB reports grants or contracts from GSK and Vertex to their institution and payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from AstraZeneca, Chiesi, GSK, Insmed, MSD, Pfizer, Vertex, Viatris, and Zambon. CSH reports consulting fees from 30 Technology, Chiesi, Infex, Insmed, LifeArc, Pneumagen, Vertex, and Zambon; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from Chiesi, Insmed, Vertex, and Zambon; and payment for expert testimony from Zambon. MRL reports consulting fees from Armata, 30 Technology, AstraZeneca, Parion Sciences, Insmed, Chiesi, Zambon, Electromed, Recode, Boehringer Ingelheim, Ethris, Mannkind, and AN2 Therapeutics and payment or

honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from Insmed. HC reports grants or contracts from the Korean Ministry of Education Basic Science Research Program (number 2021R1I1A3052416) and payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from Boryung Pharmaceutical, Kolon Pharma, and Abbott. SHC reports consulting fees from CSL Behring, Boehringer Ingelheim, and Pneumagen; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from AstraZeneca and Chiesi; and participation on a Data Safety Monitoring Board or Advisory Board from Inovio Pharmaceuticals and Imam Abdulrahman Bin Faisal University. JRH reports grants or contracts from AstraZeneca; consulting fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Novartis, and Takeda; and support for attending meetings and/or travel from AstraZeneca. KD reports payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from Novartis, Boehringer Ingelheim, GSK, NORMA Hellas, Chiesi, AstraZeneca, and Zambon; support for attending meetings or travel from Novartis, Boehringer Ingelheim, GSK, NORMA Hellas, Chiesi, AstraZeneca, and Menarini; and participation on a Data Safety Monitoring Board or Advisory Board from Novartis, GSK, and Chiesi. AB reports grants or contracts from AstraZeneca outside of the submitted work; honoraria and lecture fees from Chiesi, GSK, and AstraZeneca paid to their institution, outside of the submitted work; leadership or fiduciary roles in other board, society, committee, or advocacy groups as paid or unpaid Head of Assembly 5 (Airway diseases, asthma, COPD, and chronic cough), the European Respiratory Society, co-chair of the Nordic severe asthma network, and a member of the steering committee of SHARP, European Respiratory Society's severe asthma Clinical Research Collaboration; and a member of the steering committee of the Swedish National Airway Register. FB reports grants or contracts from AstraZeneca, GSK, and Insmed; consulting fees from Menarini, OM Pharma, and Boehringer Ingelheim; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from AstraZeneca, Chiesi, GSK, Grifols, Insmed, Menarini, OM Pharma, Pfizer, Sanofi, Vertex, Viatris, and Zambon. MS reports grants or contracts from GSK, Trudell pharma, and the Tel Aviv league for lung diseases; consulting fees from AstraZeneca, Boehringer Ingelheim, Dexcel, Kamada, Synchrony Medical, Trumed, Vertex, and Zambon; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from AstraZeneca, Boehringer Ingelheim, GSK, Sanofi, Insmed, and Kamada; support for attending meetings or travel from Boehringer Ingelheim, AstraZeneca, Rafa, GSK Israel, and Kamada; participation on a Data Safety Monitoring Board or Advisory Board for Bonus Biotherapeutics, Boehringer Ingelheim, and AstraZeneca; leadership or fiduciary roles in other board, society, committee, or advocacy groups with AJRCCM Associate Editor, the Israeli Pulmonology Society, the Israeli Society for Tuberculosis and Mycobacterial Diseases, and EMBARC as an unpaid management board member and European Respiratory Journal, Chest as an unpaid Editorial board member; and receipt of equipment, materials, drugs, medical writing, gifts, or other services from Trudell Medical International. PCG reports payment or honoraria for a lecture on bronchiectasis from Insmed; support for attending meetings and/or travel from AstraZeneca and Chiesi; and participation on a Data Safety Monitoring Board or Advisory Board from Boehringer Ingelheim, AstraZeneca, and Merck. LT reports payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from Takeda and Insmed. JDC reports grants or

contracts from Grifols; consulting fees from Antabio, AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Grifols, Insmed, Janssen, Novartis, Pfizer, and Zambon; and leadership or fiduciary roles as Chair of the European Respiratory Society Bronchiectasis Guideline Task Force, Chief Editor of European Respiratory Journal, and Chair of EMBARC Clinical Research Collaboration. NK could not be reached to declare any competing interests. All other authors declare no competing interests.

Supplementary info

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Tuberc Respir Dis (Seoul)

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. 2025 Oct;88(4):622-633.

doi: 10.4046/trd.2025.0052. Epub 2025 Jul 18.

Comprehensive Review of Comorbidities in Chronic Obstructive Pulmonary Disease and Preserved Ratio Impaired Spirometry: Insights from 2024

So-Yun Kim [1], Duk-Ki Kim [1], Green Hong [1], Seong-Dae Woo [1], Da Hyun Kang [1], Song-I Lee [1], Chaeuk Chung [1], Dongil Park [1]

Affiliations Expand

- PMID: 40676853
- PMCID: PMC12488343
- DOI: 10.4046/trd.2025.0052

Abstract

Chronic obstructive pulmonary disease (COPD) is a progressive respiratory disorder frequently accompanied by multiple comorbidities, which can substantially influence prognosis and clinical management. Systemic inflammation and overlapping risk factors play significant roles in the pathogenesis of these

comorbidities. Further, Preserved Ratio Impaired Spirometry (PRISm) has emerged as a condition indicating a high risk for COPD progression; nevertheless, the comorbidity burden of PRISm has not been adequately investigated. This review synthesizes major findings from clinically meaningful studies released in 2024, concentrating on cardiovascular diseases (CVD), pulmonary comorbidities, frailty, and obstructive sleep apnea (OSA) observed in both COPD and PRISm. CVD risk in COPD is modulated by disease phenotype, with severity and frequency of exacerbations being independent predictors of myocardial infarction and pulmonary embolism. Bronchiectasis may be present in as many as 69% of COPD patients and is linked to elevated rates of exacerbation and increased mortality. The newly proposed Radiological bronchiectasis, Obstruction, Symptoms, and Exposure (ROSE) criteria deliver an evidence-based approach to patient characterization in those with concurrent bronchiectasis and COPD. This approach has revealed that individuals fulfilling the ROSE criteria are at a higher risk for COPD exacerbations and exacerbation- related hospitalization. Additionally, recent evidence indicates a robust association between severe OSA and PRISm, with a notably higher prevalence in severe OSA cases (12.9%) versus mild/moderate OSA (6.2%). Both PRISm and COPD are associated with an accelerated progression of frailty, underlining the necessity for prompt recognition and multidisciplinary management of comorbidities. The collective evidence underscores the critical value of adopting a multidimensional assessment in COPD and PRISm, utilizing objective diagnostic criteria and the implementation of early therapeutic measures. It is recommended that future research emphasize longitudinal designs and precision-based interventions to optimize health outcomes within these groups.

Keywords: Chronic Obstructive Pulmonary Disease; Comorbidities; Exacerbation; Preserved Ratio Impaired Spirometry.

Conflict of interest statement

Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

- **59 references**
- **3 figures**

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Am J Med Sci

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Impact of inhaler treatments on respiratory functions and exacerbation frequency in non-cystic fibrosis bronchiectasis

Uğur Fidan [1], Deniz Kızılırmak [2], Ayşın Şakar Coşkun [2]

Affiliations Expand

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- DOI: 10.1016/j.amjms.2025.06.008

Abstract

Background: Bronchiectasis is a chronic airway disease caused by abnormal and permanent dilation of the airways. This study aimed to evaluate the effects of inhaler therapy use on respiratory functions and clinical outcomes in patients with non-cystic fibrosis bronchiectasis.

Methods: One hundred forty-six patients with non-cystic fibrosis bronchiectasis aged over 18 years, diagnosed using high-resolution computed tomography, were included in the study. Age, sex, body mass index, smoking status, additional diseases, known etiologic factors, and vaccination status of the patients included in the retrospectively designed study were recorded as sociodemographic data. Respiratory functions, disease severity, and clinical outcomes of patients with bronchiectasis who did and did not receive inhaled anticholinergic and steroid treatments were compared.

Results: Ninety (61.6 %) of the 146 patients included in the study were women. The mean age was 56.14 ± 16.22 years. The etiology of bronchiectasis was unknown in 78 (53.4 %) patients. The most prevalent comorbidity was asthma. According to modified Reiff scoring, 91 (62.3 %) patients were classified as having mild bronchiectasis. Twenty-six (17.8 %) patients had airway obstruction. There were 93 (63.7 %) patients using inhaled corticosteroids and 32 (21.9 %) using inhaled anticholinergics.

Conclusions: It was determined that patients using inhaler anticholinergics or inhaled steroids were in the more severe group. However, inhaler anticholinergic and inhaler steroid treatments had no effect on hospital admissions and exacerbation frequency in patients with bronchiectasis. Hospitalizations were more frequent among patients with bronchiectasis using inhaled steroids.

Keywords: Bronchiectasis; Functional status; Inhaler treatment.

Conflict of interest statement

Declaration of competing interest The authors declare that they have no potential conflict of interest including any financial, personal or other relationships with the other people or organizations that could inappropriately influence, or be perceived

to influence the presented work. The authors have no relevant financial or non-financial interests to disclose.

Supplementary info

MeSH terms, Substances