

**LIBRA JOURNAL CLUB
30-NOV-6-DEC-2024
PART II**

ASMA, RINITE, TOSSE CRONICA, BRONCHIECTASIE

Our legal office confirmed that articles NOT OPEN ACCESS cannot be distributed to the members of the list. Thus, we will transmit only the titles of articles.

ABSTRACTS of almost all these articles are available from PubMed, and full papers can be obtained through your institutions' library.

OPEN ACCESS articles are available by accessing the articles from PubMed using just the PMID for the search (eg PMID: 35514131 without . at the end)

Questa settimana il bollettino verrà separato in 2 parti causa alto numero di lavori e allegati

**LIBRA JOURNAL CLUB 30 NOV-6 DEC-2024-PART II
ASMA, RINITE, TOSSE CRONICA, BRONCHIECTASIE**

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

1

Ann Am Thorac Soc

-
-
-

. 2024 Dec 6.

doi: 10.1513/AnnalsATS.202407-799OC. Online ahead of print.

[Non-Invasive Ventilation in Acute Asthma Exacerbations: A Systematic Review](#)

[Collin Homer-Bouthiette](#)¹, [Kevin C Wilson](#)^{2 3}

Affiliations Expand

- PMID: 39642363
- DOI: [10.1513/AnnalsATS.202407-799OC](#)

Abstract

Rationale: Multiple clinical practice guidelines lack recommendations pertaining to non-invasive ventilation (NIV) in acute asthma exacerbations due to a paucity of evidence. However, the evidence syntheses for these guidelines were performed years ago and more recent randomized controlled trials (RCTs) and observational studies have been published.

Objective: Update the evidence syntheses from previous guidelines to further clarify the effects of NIV in acute asthma exacerbations.

Methods: A systematic search of Medline, Embase and the Cochrane Library was conducted, studies comparing NIV plus standard medical therapy to standard medical therapy alone in adults with acute asthma exacerbation were selected using a priori selection criteria, and relevant data were extracted. Weighted aggregation (meta-analysis) was performed to summarize effects, which were appraised using the GRADE (Grading of Recommendations, Assessment, Development, and Evaluation) approach.

Results: Eight RCTs and five observational studies were selected. NIV was associated with a reduced intubation rate (RCTs RR 0.46, CI 0.16-1.29 and observational studies RR 0.55, CI 0.45-0.68), admission rate (RR 0.57, CI 0.34-0.98), and time to improvement in accessory muscle use (Mean difference -1.13 hours, CI -1.28 - -0.99). Additional outcomes favored NIV plus standard medical therapy but didn't reach statistical significance including dyspnea measures and spirometry measures. There were too few deaths to reliably assess mortality. The quality of evidence ranged from low to very low for all outcomes.

Conclusion: All statistically significant outcomes favored NIV plus standard medical therapy over standard medical therapy alone in adults with acute asthma exacerbation. Our aggregate data suggests that intubation rate may be reduced with NIV plus SMT, though the overall quality of the evidence is low. If this is a true effect, it may be clinically important because intubation has been shown to correlate with mortality in multiple observational trials. Given these findings, patients with acute asthma exacerbations may benefit from a trial of NIV in addition to standard medical therapy.

[Proceed to details](#)

Cite

Share

2

Am J Respir Crit Care Med

-
-
-

. 2024 Dec 6.

doi: 10.1164/rccm.202407-1288OC. Online ahead of print.

[Comparison of Race-neutral Versus Race-specific Spirometry Equations for Evaluation of Child Asthma](#)

[Amy L Non](#)¹, [Xiuhong Li](#)², [Miranda R Jones](#)³, [Emily Oken](#)⁴, [Tina Hartert](#)⁵, [Nathan Schoettler](#)⁶, [Diane R Gold](#)⁷, [Sima Ramratnam](#)⁸, [Eric M Schauburger](#)⁹, [Kelan Tantisira](#)¹⁰, [Leonard B Bacharier](#)¹¹, [Douglas J Conrad](#)¹², [Kecia N Carroll](#)¹³, [Flory L Nkoy](#)¹⁴, [Heike Luttmann-Gibson](#)¹⁵, [Frank D Gilliland](#)¹⁶, [Carrie V Breton](#)¹⁶, [Meyer Kattan](#)¹⁷, [Robert F Lemanske Jr](#)¹⁸, [Augusto A Litonjua](#)¹⁹, [Cythia T McEvoy](#)²⁰, [Katherine Rivera-Spoljaric](#)²¹, [Christian Rosas-Salazar](#)²², [Christine L M Joseph](#)²³, [Meredith Palmore](#)²⁴, [Patrick H Ryan](#)^{25 26}, [Ganesa Wegienka](#)²⁷, [Alexandra R Sitarik](#)²⁷, [Anne Marie Singh](#)⁸, [Rachel L Miller](#)²⁸, [Edward M Zoratti](#)²⁹, [Dennis Ownby](#)³⁰, [Carlos A Camargo Jr](#)³¹, [Judy L Aschner](#)³², [Annemarie Stroustrup](#)³³, [Shohreh F Farzan](#)³⁴, [Margaret R Karagas](#)³⁵, [Daniel J Jackson](#)³⁶, [James E Gern](#)³⁷; [ECHO Cohort Consortium](#)

Affiliations Expand

- PMID: 39642347
- DOI: [10.1164/rccm.202407-1288OC](https://doi.org/10.1164/rccm.202407-1288OC)

Abstract

Rationale: Race-based estimates of pulmonary function in children could influence the evaluation of asthma in children from racial and ethnic minoritized backgrounds.

Objectives: To determine if race-neutral (GLI-Global) versus race-specific (GLI-Race-Specific) reference equations differentially impact spirometry evaluation of childhood asthma.

Methods: The analysis included 8,719 children aged 5 to <12 years from 27 cohorts across the United States grouped by parent-reported race and ethnicity. We analyzed how the equations affected forced expiratory volume in 1 second (FEV₁), forced vital capacity (FVC), and FEV₁/FVC z-scores. We used multivariable logistic models to evaluate associations between z-scores calculated with different equations and asthma diagnosis, emergency department (ED) visits, and hospitalization.

Measurements and main results: For Black children, the GLI-Global vs. Race-Specific equations estimated significantly lower z-scores for FEV₁ and FVC but similar values for FEV₁/FVC, thus increasing the proportion of children classified with low FEV₁ by 14%. While both equations yielded strong inverse relationships between FEV₁ and FEV₁/FVC z-scores and asthma outcomes, these relationships varied across racial and ethnic groups (p<0.05). For any given FEV₁ or FEV₁/FVC z-score, asthma diagnosis and ED visits were higher among Black and Hispanic versus White children (p<0.05). For FEV₁, GLI-Global equations estimated asthma outcomes that were more uniform across racial and ethnic groups.

Conclusions: Parent-reported race and ethnicity influenced relationships between lung function and asthma outcomes. Our data show no advantage to race-specific equations for evaluating childhood asthma, and the potential for race-specific equations to obscure lung impairment in disadvantaged children strongly supports using race-neutral equations.

Keywords: Asthma; Children; Race and ethnicity; Spirometry.

[Proceed to details](#)

Cite

Share

3

Review

Allergy

-
-
-

. 2024 Dec 6.

doi: 10.1111/all.16423. Online ahead of print.

[Allergen-Specific Immunotherapy and Trained Immunity](#)

[Leticia Martín-Cruz](#)^{1,2}, [Oscar Palomares](#)¹

Affiliations Expand

- PMID: 39641571
- DOI: [10.1111/all.16423](#)

Abstract

The high prevalence of allergic diseases reached over the last years is attributed to the complex interplay of genetic factors, lifestyle changes, and environmental exposome. Allergen-specific immunotherapy (AIT) is the single therapeutic strategy for allergic diseases with the potential capacity to modify the course of the disease. Our knowledge of the mechanisms involved in allergy and successful AIT has significantly improved. Recent findings indicate that long-term allergen tolerance upon AIT discontinuation not only relies on the generation of proper adaptive immune responses by the generation of allergen-specific regulatory T and B cells enabling the induction of different isotypes of blocking antibodies but also relies on the restoration of proper innate immune responses. Trained immunity (TRIM) is the process by which innate immune cells acquire memory by mechanisms depending on metabolic and epigenetic reprogramming, thus conferring the host with increased broad protection against infection. This concept was initially explored for infectious diseases, as well as for vaccination against infections, but compelling experimental evidence suggests that TRIM might also play a role in allergy and AIT. Hyperinflammatory innate immune responses in early life, likely due to TRIM maladaptations, lead to aberrant type 2 inflammation-enhancing allergy. However, exposure to farming environments and specific microbes prevents recurrent infections and allergy development, likely due to mechanisms partially depending on TRIM. TRIM-based vaccines and next-generation AIT vaccines inducing metabolic and epigenetic reprogramming in innate immune cells and their precursors have shown protective antiallergic effects. A better understanding of the factors involved in early-life TRIM mechanisms in the context of allergy and the identification and characterization of novel tolerance inducers might well enable the design of alternative TRIM-based allergen vaccines for allergic diseases.

Keywords: allergen-specific immunotherapy; asthma; food allergy; metabolic and epigenetic rewiring; trained immunity; trained immunity-based allergen vaccines; trained immunity-based vaccines (TibV).

© 2024 The Author(s). Allergy published by European Academy of Allergy and Clinical Immunology and John Wiley & Sons Ltd.

- [111 references](#)

Supplementary info

Publication types, Grants and fundingExpand

[Proceed to details](#)

Cite

Share

4

Editorial

Eur Respir J

-
-
-

. 2024 Dec 5;64(6):2401908.

doi: 10.1183/13993003.01908-2024. Print 2024 Dec.

[Is asthma remission an important clinical outcome in asthma management?](#)

[Marcia M M Pizzichini](#)¹, [Emílio Pizzichini](#)²

Affiliations Expand

- PMID: 39638362
- DOI: [10.1183/13993003.01908-2024](#)

No abstract available

Conflict of interest statement

Conflict of interest: M.M.M. Pizzichini reports support for attending meetings from Sanofi. E. Pizzichini reports grants from Sanofi and GSK, fees for consultancy and lectures from GSK and Sanofi (through their institution), and support for attending meetings from Sanofi.

Comment on

- [Clinical response and on-treatment clinical remission with tezepelumab in a broad population of patients with severe, uncontrolled asthma: results over 2 years from the NAVIGATOR and DESTINATION studies.](#)

Wechsler ME, Brusselle G, Virchow JC, Bourdin A, Kostikas K, Llanos JP, Roseti SL, Ambrose CS, Hunter G, Jackson DJ, Castro M, Lugogo N, Pavord ID, Martin N, Brightling CE. Eur Respir J. 2024 Dec 5;64(6):2400316. doi: 10.1183/13993003.00316-2024. Print 2024 Dec. PMID: 39326921 Free PMC article. Clinical Trial.

Supplementary info

Publication types Expand

[Proceed to details](#)

Cite

Share

5

Acta Biochim Biophys Sin (Shanghai)

-
-
-

. 2024 Dec 5.

doi: 10.3724/abbs.2024220. Online ahead of print.

[Early RSV infection aggravates asthma-related Th2 responses by increasing the number of CD4⁺ TRM cells through upregulation of PLZF](#)

[Meng Zhang¹, Jiafeng Sha¹, Na Li², Jingjing Feng¹, Tianyun Shi¹, Yunxia Yu¹, Xiaoting Ren¹, Zhoufang Mei¹, Zhijun Jie^{1,3}](#)

Affiliations Expand

- PMID: 39632661
- DOI: [10.3724/abbs.2024220](#)

Abstract

Respiratory syncytial virus (RSV) infection is correlated with the chronic pathogenesis and exacerbation of asthma. However, the mechanism remains unclear. In this study, acute and memory (Mem) asthma models with early RSV infection are established to explore the persistence of the effects of RSV infection on asthma. Intravascular injection of an anti-CD45 antibody is performed to define CD4⁺ TRM cells accurately. RSV infection has a sustained impact on asthma exacerbation for at least six weeks, with high Th2 cytokine secretion in lung tissue instead of IgE response-related B cells. CD45⁻CD4⁺ TRM cells are positively correlated with RSV-related asthma exacerbation and severe airway inflammation. Mechanistically, overexpression of the transcription factor PLZF *in vitro* increases the number of CD4⁺ TRM cells, and conditional knockout of *Zbtb16* (encoding PLZF) can decrease the number of CD4⁺ TRM cells to aggravate allergic inflammation and reduce Th2 responses. This study provides evidence for potential combined strategies that might benefit asthma patients.

Keywords: PLZF; asthma; respiratory syncytial virus infection; tissue-resident memory T cell.

[Proceed to details](#)

Cite

Share

6

Clinical Trial

Eur Respir J

-
-
-

. 2024 Dec 5;64(6):2400316.

doi: 10.1183/13993003.00316-2024. Print 2024 Dec.

[Clinical response and on-treatment clinical remission with tezepelumab in a broad population of patients with severe, uncontrolled asthma: results over 2 years from the NAVIGATOR and DESTINATION studies](#)

[Michael E Wechsler](#)¹, [Guy Brusselle](#)², [J Christian Virchow](#)³, [Arnaud Bourdin](#)⁴, [Konstantinos Kostikas](#)⁵, [Jean-Pierre Llanos](#)⁶, [Stephanie L Roseti](#)⁷, [Christopher S Ambrose](#)⁸, [Gillian Hunter](#)⁹, [David J Jackson](#)^{10 11}, [Mario Castro](#)¹², [Njira Lugogo](#)¹³, [Ian D Pavord](#)¹⁴, [Neil Martin](#)^{15 16}, [Christopher E Brightling](#)¹⁵

Affiliations Expand

- PMID: 39326921
- PMCID: [PMC11618813](#)
- DOI: [10.1183/13993003.00316-2024](#)

Abstract

Background: In asthma, clinical response is characterised by disease improvement with treatment, whereas clinical remission is characterised by long-term disease stabilisation with or without ongoing treatment. The proportions of patients receiving tezepelumab who responded to treatment and who achieved on-treatment clinical remission were assessed in the NAVIGATOR (ClinicalTrials.gov identifier [NCT03347279](#)) and DESTINATION (ClinicalTrials.gov identifier [NCT03706079](#)) studies of severe, uncontrolled asthma.

Methods: NAVIGATOR and DESTINATION were phase 3, randomised, double-blind, placebo-controlled studies; DESTINATION was an extension of NAVIGATOR. Complete clinical response was defined as achieving all of the following: ≥50% reduction in exacerbations *versus* the previous year, improvements in pre-bronchodilator (BD) forced expiratory volume in 1 s (FEV₁) of ≥100 mL or ≥5%, improvements in Asthma Control Questionnaire (ACQ)-6 score of ≥0.5 and physician's assessment of asthma improvement. On-treatment clinical remission was defined as an ACQ-6 total score ≤1.5, stable lung function (pre-BD FEV₁ >95% of baseline) and no exacerbations or use of oral corticosteroids during the time periods assessed.

Results: Higher proportions of tezepelumab than placebo recipients achieved complete clinical response over weeks 0-52 (46% *versus* 24%; OR 2.83, 95% CI 2.10-

3.82) and on-treatment clinical remission over weeks 0-52 (28.5% *versus* 21.9%; OR 1.44, 95% CI 0.95-2.19) and weeks >52-104 (33.5% *versus* 26.7%; OR 1.44, 95% CI 0.97-2.14). Tezepelumab recipients who achieved on-treatment clinical remission *versus* complete clinical response at week 52 had better preserved lung function and lower inflammatory biomarker levels at baseline, and fewer exacerbations in the 12 months before the study.

Conclusions: Among patients with severe, uncontrolled asthma, tezepelumab treatment was associated with an increased likelihood of achieving complete clinical response and on-treatment clinical remission compared with placebo. Both are clinically important outcomes, but may be driven by different patient characteristics.

Copyright ©The authors 2024.

Conflict of interest statement

Conflict of interest: M.E. Wechsler is an employee of National Jewish Health and has received consultancy fees from AstraZeneca, Equillium, Genentech, GSK, Novartis, Regeneron Pharmaceuticals, resTORbio, Sanofi and Teva Pharmaceuticals. G. Brusselle has received fees for participation in advisory boards and/or speaker fees from Amgen, AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, MSD, Novartis and Sanofi. J.C. Virchow has received grants for research or clinical trials from the German Research Foundation, GSK and MSD, has received consulting fees from Avontec, Boehringer Ingelheim, Chiesi, Essex Schering-Plough, GSK, Janssen-Cilag, MEDA, MSD, Mundipharma, Novartis, Regeneron Pharmaceuticals, Revotar, Roche, Sandoz-Hexal, Sanofi-Aventis, Teva Pharmaceuticals and UCB Schwarz-Pharma, has received fees for lectures from AstraZeneca, Avontec, Bayer, Bencard, Bionorica, Boehringer Ingelheim, Chiesi, Essex Schering-Plough, GSK, Janssen-Cilag, Leti, MEDA, Merck, MSD, Mundipharma, Novartis, Nycomed Altana, Pfizer, Revotar, Sandoz-Hexal, Stallergenes Greer, Teva Pharmaceuticals, UCB Schwarz-Pharma and Zydus Cadila, has received fees for data safety-monitoring board participation from Chiesi, and has received travel support from Boehringer Ingelheim and Sanofi. A. Bourdin has received grants from AstraZeneca, Boehringer Ingelheim, Cephalon/Teva Pharmaceuticals, GSK, Novartis and Sanofi-Regeneron, has provided consultancy for Actelion, AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, MedinCell, Merck, Novartis, Roche and Sanofi-Regeneron, and has acted as an investigator or co-investigator for trials sponsored by Actelion, AstraZeneca, Boehringer Ingelheim, Chiesi, Galapagos, GSK, Merck, Novartis, Roche, Sanofi-Regeneron and Vertex Pharmaceuticals. K. Kostikas has received fees for presentations and/or consultancy fees from Alector Pharmaceuticals, AstraZeneca, Boehringer Ingelheim, CSL Behring, Chiesi, ELPEN, Gilead, GSK, Menarini, Novartis, Pfizer, Sanofi, Specialty Therapeutics and WebMD, and his department has received funding and/or grants from AstraZeneca, Boehringer Ingelheim, Chiesi, ELPEN, GSK, Innovis, Menarini, Novartis and NuvoAir. J-P. Llanos is an employee of Amgen and owns stock in Amgen. S.L. Roseti, C.S. Ambrose, G. Hunter and N. Martin are employees of AstraZeneca and may own stock or stock options in AstraZeneca. D.J. Jackson has received consultancy fees and speaker fees from AstraZeneca, GSK, Novartis, Sanofi and Teva Pharmaceuticals. M. Castro reports grants/research support from ALA, AstraZeneca, Gala Therapeutics, Genentech, GSK, Novartis, Patient-Centered Outcomes Research Institute, Pulmatrix, Sanofi-Aventis, Shionogi Theravance and the US National Institutes of Health, consulting fees from Allakos, Amgen, Arrowhead, AstraZeneca, Genentech, Merck, Novartis, OM Pharma,

Regeneron Pharmaceuticals, Sanofi and Teva Pharmaceuticals, and has received royalties from Aer Therapeutics and Elsevier. N. Lugogo has received consultancy fees for participation in advisory boards from Amgen, AstraZeneca, Genentech, GSK, Novartis, Regeneron Pharmaceuticals, Sanofi and Teva Pharmaceuticals, has received fees for non-speaker bureau presentations from AstraZeneca and GSK, has received travel support from AstraZeneca, and her institution has received research support from Amgen, AstraZeneca, Avillion, Genentech, Gossamer Bio, GSK, Regeneron Pharmaceuticals, Sanofi and Teva Pharmaceuticals. I.D. Pavord has received speaker fees from Aerocrine AB, Almirall, AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Novartis, Regeneron Pharmaceuticals, Sanofi and Teva Pharmaceuticals, has received payments for organisation of educational events from AstraZeneca, GSK, Regeneron Pharmaceuticals, Sanofi and Teva Pharmaceuticals, has received consultancy fees from Almirall, AstraZeneca, Boehringer Ingelheim, Chiesi, Circassia, Dey Pharma, Genentech, GSK, Knopp Biosciences, Merck, MSD, Napp Pharmaceuticals, Novartis, Regeneron Pharmaceuticals, RespiVert, Sanofi, Schering-Plough and Teva Pharmaceuticals, has received international scientific meeting sponsorship from AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Napp Pharmaceuticals, Regeneron Pharmaceuticals, Sanofi and Teva Pharmaceuticals, and has received a research grant from Chiesi. C.E. Brightling has received grants and consultancy fees from 4D Pharma, AstraZeneca, Chiesi, Genentech, Global Access Diagnostics (formerly Mologic), GSK, Novartis, Regeneron Pharmaceuticals, Roche and Sanofi.

Comment in

- [Is asthma remission an important clinical outcome in asthma management?](#)

Pizzichini MMM, Pizzichini E. *Eur Respir J*. 2024 Dec 5;64(6):2401908. doi: 10.1183/13993003.01908-2024. Print 2024 Dec. PMID: 39638362 No abstract available.

- [40 references](#)
- [6 figures](#)

Supplementary info

Publication types, MeSH terms, Substances, Associated dataExpand

Full text links



[Proceed to details](#)

Cite

Share

7

Review

Eur Respir J

-
-
-

. 2024 Dec 5;64(6):2400861.

doi: 10.1183/13993003.00861-2024. Print 2024 Dec.

[Integrating hot topics and implementation of treatable traits in asthma](#)

[Peter G Gibson](#)^{1 2 3}, [Vanessa M McDonald](#)^{4 2 3}

Affiliations Expand

- PMID: 39255992
- PMCID: [PMC11618818](#)
- DOI: [10.1183/13993003.00861-2024](#)

Abstract

People with asthma experience many different problems related to their illness. The number and type of problems differ between patients. This results in asthma being a complex and heterogeneous disorder which mandates a personalised approach to management. These features pose very significant challenges for the effective implementation of evidence-based management. "Treatable traits" is a model of care that has been specifically designed to address these issues. Traits are identified in the pulmonary, extrapulmonary (comorbidity) and behavioural/risk factor domains. Traits are clinically relevant, recognisable with validated trait identification markers and treatable using evidence-based therapies. The clinician and patient agree on a personalised management plan that addresses the relevant traits, and trials show superiority of this approach with significant improvements in asthma control and quality of life. A number of tools have now been developed to assist the clinician in the implementation of this approach. The success of the treatable traits model of care is now being realised in other disease areas.

Copyright ©The authors 2024.

Conflict of interest statement

Conflict of interest: P.G. Gibson reports personal fees from AstraZeneca, Chiesi, GlaxoSmithKline, Novartis and Sanofi, and grants from AstraZeneca and GlaxoSmithKline, outside the submitted work. V.M. McDonald reports personal fees from AstraZeneca, GlaxoSmithKline and Boehringer Ingelheim, and grants from AstraZeneca and GlaxoSmithKline, outside the submitted work.

- [105 references](#)

- [3 figures](#)

Supplementary info

Publication types, MeSH termsExpand

Full text links



Free full text at
ersjournals.com

[Proceed to details](#)

Cite

Share

8

Monaldi Arch Chest Dis

-
-
-

. 2024 Dec 4.

doi: [10.4081/monaldi.2024.3005](https://doi.org/10.4081/monaldi.2024.3005). Online ahead of print.

[Small airway involvement in severe asthma: how common is it and what are its implications?](#)

[Dhruv Talwar](#)¹, [Sourabh Pahuja](#)², [Deepak Prajapat](#)³, [Kanishka Kumar](#)³, [Anupam Prakash](#)³, [Deepak Talwar](#)³

Affiliations Expand

- PMID: 39641315
- DOI: [10.4081/monaldi.2024.3005](https://doi.org/10.4081/monaldi.2024.3005)

Abstract

Asthma is a prevalent chronic respiratory disease affecting all age groups globally, causing significant morbidity and mortality. Small airway involvement, often undetected by traditional spirometry, has emerged as a critical aspect of asthma pathophysiology, especially in severe cases. This retrospective observational study aimed to assess small airway dysfunction using impulse oscillometry (IOS) in 94 severe asthma patients. Results indicated that 27.3% of patients had small airway obstruction. While spirometry showed no statistical differences between groups, IOS parameters were significantly different, highlighting its sensitivity in detecting small airway disease. Patients with small airway involvement exhibited poorer asthma

control, emphasizing the clinical relevance of identifying and addressing small airway dysfunction. The study underscores the need for comprehensive evaluation tools like IOS alongside spirometry, especially in severe asthma management. Further large-scale studies are warranted to validate IOS's utility in optimizing therapeutic strategies and improving asthma control, particularly in resource-limited settings. Recognizing and addressing small airway involvement could lead to individualized management approaches and better outcomes in severe asthma patients.

[Proceed to details](#)

Cite

Share

9

J Asthma

-
-
-

. 2024 Dec 4:1-15.

doi: 10.1080/02770903.2024.2438094. Online ahead of print.

[Budesonide/Formoterol Turbuhaler vs pMDI Salbutamol for Acute Asthma in Outpatient Emergency Department: A Prospective, Randomized, Open-Label Study](#)

[Hock Peng Koh](#)¹, [Sin Nan Lai](#)², [Woon Wee Chong](#)², [Zulsairi Mohd Pauzi](#)³

Affiliations Expand

- PMID: 39629659
- DOI: [10.1080/02770903.2024.2438094](https://doi.org/10.1080/02770903.2024.2438094)

Abstract

BackgroundThe Global Initiative for Asthma (GINA) has suggested the need for more studies on inhaled corticosteroid (ICS)-formoterol in the Emergency Department (ED).**Objectives**We aimed to compare the outcomes of budesonide/formoterol (160/4.5 mcg/inhalation) turbuhaler versus pressurized metered-dose inhaler (pMDI) salbutamol (100mcg/puff) in acute asthma in the outpatient ED.**Methods**This single-centre, prospective, randomized, and open-label study involved adult asthma patients with mild to moderate asthma exacerbation who attended the outpatient ED of a tertiary hospital in Malaysia. The intervention arm received budesonide/formoterol (Symbicort® 160/4.5mcg) turbuhaler, while the control arm received pMDI salbutamol with a valved holding chamber. Stratified randomization with variable baseline ICS use was employed. Direct discharge rate from outpatient

ED was the primary outcome. Vital signs pre- and post-treatment between the two arms were also compared. Results Seventy-four (n = 37 for each arm) asthma patients were recruited. Baseline clinical characteristics were comparable between the two arms. Direct discharge rates from ED were comparable between the intervention (94.6%) and the control (91.9%) arms (p = 1.000). Post-treatment outcomes (respiratory rate, oxygen saturation, peak expiratory flow rate) were similar between the two arms, except for the higher increment of heart rate (p < 0.001) and lesser reduction of blood pressure in the control arm (p = 0.013). Intravenous hydrocortisone use was significantly higher in the control arm (n = 19, 51.4%) than in the budesonide/formoterol arm (n = 6, 16.2%) (p = 0.001). Conclusion Budesonide/formoterol turbuhaler is as effective as pMDI salbutamol in treating asthma exacerbation in the outpatient ED with less effect on heart rate and lower usage of intravenous corticosteroids.

Keywords: ICS-formoterol; Symbicort; acute asthma; budesonide-formoterol; emergency department.

[Proceed to details](#)

Cite

Share

10

Eur J Emerg Med

-
-
-

. 2024 Dec 3.

doi: 10.1097/MEJ.0000000000001205. Online ahead of print.

[Contribution of point-of-care ultrasound in the prehospital management of patients with non-trauma acute dyspnea: a systematic review and meta-analysis](#)

[Omide Taheri^{1,2,3}](#), [Julie Samain¹](#), [Frédéric Mauny^{2,3,4}](#), [Marc Puyraveau^{2,3,4}](#), [Thibaut Desmettre⁵](#), [Tania Marx^{1,2,3}](#)

Affiliations [Expand](#)

- PMID: 39630617
- DOI: [10.1097/MEJ.0000000000001205](#)

Abstract

Acute dyspnea is a common symptom whose management is challenging in prehospital settings. Point-of-care ultrasound (POCUS) is increasingly accessible

because of device miniaturization. To assess the contribution of POCUS in the prehospital management of patients with acute nontraumatic dyspnea, we performed a systematic review on nontrauma patients of any age managed in the prehospital setting for acute dyspnea and receiving a POCUS examination. We searched seven databases and gray literature for English-language studies published from January 1995 to November 2023. Two independent reviewers completed the study selection, data extraction, and risk of bias assessment. The primary outcome was the assessment of the contribution of POCUS to feasibility, diagnostic, therapeutic, prognosis, patient referral, and transport vector modification. Twenty-three studies were included. The risk of bias assessment identified 3 intermediate-risk, 18 serious-risk, and 2 critical-risk studies. Three studies reported moderate to excellent feasibility for lung POCUS, and three studies reported poor to mediocre feasibility for cardiac POCUS. The median duration of the POCUS examination was less than 5 minutes (six studies). POCUS improved diagnostic identification (seven studies). The diagnostic accuracy of POCUS was excellent for pneumothorax (sensitivity = 100%, specificity = 100%, two studies), very good for acute heart failure (sensitivity = 71-100%, specificity = 72-95%, eight studies), good for pneumonia (sensitivity = 88%, specificity = 59%, one study), and moderate for pleural effusion (sensitivity = 26-53%, specificity = 83-92%, two studies). Treatment was modified in 11 to 54% of the patients (seven studies). POCUS had no significant effect on patient prognosis (two studies). POCUS contributed to patient referrals and transport vectors in 51% (four studies) and 25% (three studies) of patients, respectively. The evidence supports the use of POCUS for managing acute nontraumatic dyspnea in the prehospital setting in terms of feasibility, overall diagnostic contribution, and, particularly, lung ultrasound for acute heart failure diagnosis. Moreover, POCUS seems to have a therapeutic contribution. There is not enough evidence supporting the use of POCUS for pneumonia, pleural effusion, pneumothorax, chronic obstructive pulmonary disease, or asthma exacerbation diagnosis, nor does it support prognostic, patient referral, and transport vector contribution. A high level of evidence is lacking and needed.

Copyright © 2024 The Author(s). Published by Wolters Kluwer Health, Inc.

- [43 references](#)

[Proceed to details](#)

Cite

Share

11

Review

Pediatr Pulmonol

-
-
-

. 2024 Dec 3:e27401.

doi: 10.1002/ppul.27401. Online ahead of print.

[European Respiratory Society Research Seminar on Preventing Pediatric Asthma](#)

[Jonathan Grigg](#)^{1,2}, [Benjamin Barratt](#)³, [Klaus Bønnelykke](#)⁴, [Adnan Custovic](#)⁵, [Markus Ege](#)^{1,6}, [Christian Pasquali](#)⁷, [Oscar Palomares](#)⁸, [Seif Shaheen](#)^{9,10}, [Milena Sokolowska](#)¹¹, [Donata Vercelli](#)^{12,13,14,15}, [Rick Maizels](#)¹⁶, [Erika von Mutius](#)¹

Affiliations Expand

- PMID: 39625247
- DOI: [10.1002/ppul.27401](https://doi.org/10.1002/ppul.27401)

Abstract

This report is a summary of the presentations given at the European Respiratory Society's Research Seminar on Asthma Prevention. The seminar reviewed both epidemiological and mechanistic studies and concluded that; (i) reducing exposure of pregnant women and children to air pollution will reduce incident asthma, (ii) there are promising data that both fish oil and a component of raw cow's milk prevent asthma, and (iii) modulating trained immunity by either mimicking helminth infection or oral and sublingual bacterial products is a promising area of research.

Keywords: asthma; children; prevention.

© 2024 Wiley Periodicals LLC.

- [95 references](#)

Supplementary info

Publication types, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

12

Int Forum Allergy Rhinol

-
-

•

. 2024 Dec 3.

doi: 10.1002/alr.23492. Online ahead of print.

[Nasal Mucus Cytokines Are Correlated with Spirometry Measures in CRS Patients with Comorbid Asthma](#)

[Rory J Lubner¹](#), [Christina Dorismond¹](#), [Mason Krysiniski¹](#), [Ping Li¹](#), [Rakesh K Chandra¹](#), [Justin H Turner²](#), [Dawn C Newcomb³](#), [Katherine N Cahill⁴](#), [Naweed I Chowdhury¹](#)

Affiliations Expand

• PMID: 39624918

• DOI: [10.1002/alr.23492](#)

Abstract

CRS patients with asthma show differential nasal mucus cytokine signatures based on endotype. IL-7 concentration is positively associated with higher %FEV1 and %FVC in CRS patients with asthma.

Keywords: asthma; chronic rhinosinusitis; cytokine; endoscopic sinus surgery.

© 2024 ARS-AAOA, LLC.

• [10 references](#)

Supplementary info

Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

13

Review

Environ Sci Technol

•

-
-

. 2024 Dec 3;58(48):21097-21119.

doi: 10.1021/acs.est.4c06653. Epub 2024 Nov 8.

[Wildfire Smoke: Health Effects, Mechanisms, and Mitigation](#)

[Ying Lei](#)¹, [Tze-Huan Lei](#)¹, [Chan Lu](#)², [Xue Zhang](#)¹, [Faming Wang](#)^{1,3}

Affiliations Expand

- PMID: 39516728
- DOI: [10.1021/acs.est.4c06653](#)

Abstract

Wildfires are becoming more frequent and intense on a global scale, raising concerns about their acute and long-term effects on human health. We conducted a systematic review of the current epidemiological evidence on wildfire health risks and a meta-analysis to investigate the association between wildfire smoke exposure and various health outcomes. We discovered that wildfire smoke increases the risk of premature deaths and respiratory morbidity in the general population. Meta-analysis of cause-specific mortality and morbidity revealed that wildfire smoke had the strongest associations with cardiovascular mortality (RR: 1.018, 95% CI: 1.014-1.021), asthma hospitalization (RR: 1.054, 95% CI: 1.026-1.082), and asthma emergency department visits (RR: 1.117, 95% CI: 1.035-1.204) in the general population. Subgroup analyses of age found that adults and elderly adults were more susceptible to the cardiopulmonary effects of wildfire smoke. Next, we systematically addressed the toxicological mechanisms of wildfire smoke, including direct toxicity, oxidative stress, inflammatory reactions, immune dysregulation, genotoxicity and mutations, skin allergies, inflammation, and others. We discuss wildfire smoke risk mitigation strategies including public health interventions, regulatory measures, and personal actions. We conclude by highlighting current research limitations and future directions for wildfire research, such as elucidating the complex interactions of wildfire smoke components on human health, developing personalized risk assessment tools, and improving resilience and adaptation strategies to mitigate the health effects of wildfires in changing climate.

Keywords: all-cause mortality; meta-analysis; risk mitigation; toxicity; wildfire.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

14

Chest

-
-
-

. 2024 Dec 2:S0012-3692(24)05601-0.

doi: 10.1016/j.chest.2024.09.048. Online ahead of print.

[Stability of Fractional Exhaled Nitric Oxide and its Relationship with Exacerbation in Patients Aged 6 Years or Older with Uncontrolled, Moderate-to-Severe Asthma](#)

[William W Busse¹, Ian D Pavord², Michael E Wechsler³, Ignacio J Davila⁴, Arman Altincatal⁵, Lucia de Prado Gomez⁶, Xavier Soler⁷, Harry Sacks⁷, Juby A Jacob-Nara⁸, Yamo Deniz⁷, Paul J Rowe⁸](#)

Affiliations Expand

- PMID: 39631682
- DOI: [10.1016/j.chest.2024.09.048](#)

No abstract available

Keywords: FeNO; asthma; biomarker; dupilumab; prognostic; type 2 inflammation.

[Proceed to details](#)

Cite

Share

15

Sci Rep

-
-
-

. 2024 Dec 2;14(1):29997.

doi: 10.1038/s41598-024-81745-9.

[When patient-reported respiratory symptoms shed light on pathophysiology in adult asthma: a cross-sectional study](#)

[Gilles Louis^{1,2}](#), [Benoit Pétré³](#), [Bernardo Sousa-Pinto⁴](#), [Jean Bousquet⁵](#), [Éric Van Ganse⁶](#), [Florence Schleich⁷](#), [Renaud Louis⁷](#)

Affiliations Expand

- PMID: 39623071
- PMCID: [PMC11612149](#)
- DOI: [10.1038/s41598-024-81745-9](#)

Abstract

While studies have demonstrated the impact of asthma symptoms on quality of life, very few studies have investigated the relationship between detailed asthma symptoms, as reported by the patient, and lung function and inflammation. A cross-sectional study was conducted on treated (ICS/LABA) adult (> 18 years) asthma patients recruited from the Liege University Hospital Asthma Clinic (Belgium) between 2018 and 2023 (n = 505). The intensity of asthma symptoms (dyspnea, wheezing, chest tightness, cough, and airway secretion) was measured using five-point Likert scales (5 expressing the greatest intensity). Multiple linear regression models including all independent variables were carried out to evaluate whether lung function and inflammatory parameters were independently associated with distinct symptoms. Cough associated with female gender (p < 0.05), smoking (p < 0.01), low FeNO (p < 0.05) and FEV1% pred. (p < 0.05), and high blood and sputum eosinophils (p < 0.05 for both). Airway secretion associated with smoking (p < 0.05). Chest tightness associated with young age (p < 0.001), female gender (p < 0.05) and low FEV1% pred. (p < 0.01). Dyspnea associated with female gender (p < 0.001), high BMI (p < 0.05), low FEV1% pred. (p < 0.0001) and high FEV1/FVC % (p < 0.01). Wheezing associated with young age (p < 0.01), high BMI (p < 0.05), smoking (p < 0.01), low FEV1% pred. (p < 0.0001) and high FEV1/FVC % (p < 0.05). Different respiratory symptoms are associated with distinct demographic, functional and inflammatory features paving the way for personalized therapeutic interventions.

Keywords: Asthma; Inflammation; Lung function; PROMs; Symptoms.

© 2024. The Author(s).

Conflict of interest statement

Declarations. Competing interests: Outside of this submitted work, RL received unrestricted research grants from GSK, AstraZeneca, Novartis and Chiesi and lecture or adboard fees from GSK, AZ, Novartis and Sonafi. Outside of this submitted work, FS received lecture or adboard fees from Chiesi, AZ, GSK, and Novartis. Outside this submitted work, JB reports personal fees (member of advisory boards, consultations, honoraria for meeting lectures) from Cipla, Menarini, Mylan, Novartis, Purina, Sanofi-

Aventis, Teva, Uriach. Shareholder of KYomed Innov and MASK-air-SAS. The rest of the authors declare that they have no relevant conflicts of interest. Ethics approval and consent to participate: The Study was approved by the CHU Liège ethics committee. Signed informed consent was obtained from patients as soon as they entered the asthma clinic of the CHU Liège. They agreed that their clinical data and the health outcomes they reported in the routine setting would be used for the purposes of research.

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

Supplementary info

MeSH terms, Grants and fundingExpand

Full text links

natureportfolio

[Proceed to details](#)

Cite

Share

16

BMJ

-
-
-

. 2024 Dec 2:387:q2690.

doi: 10.1136/bmj.q2690.

[Sixty seconds on . . . asthma injections](#)

[Jacqui Wise¹](#)

Affiliations Expand

- PMID: 39622528
- DOI: [10.1136/bmj.q2690](#)

No abstract available

Full text links

[Proceed to details](#)

Cite

Share

17

J Intensive Care

-
-
-

. 2024 Dec 2;12(1):50.

doi: [10.1186/s40560-024-00763-x](https://doi.org/10.1186/s40560-024-00763-x).

[Early predictors of unfavorable outcomes in pediatric acute respiratory failure](#)

[Shinya Miura](#)¹, [Nobuaki Michihata](#)², [Toshiaki Isogai](#)^{3,4}, [Hiroki Matsui](#)⁵, [Kiyohide Fushimi](#)⁶, [Hideo Yasunaga](#)⁵

Affiliations Expand

- PMID: 39617919
- PMCID: [PMC11610168](#)
- DOI: [10.1186/s40560-024-00763-x](https://doi.org/10.1186/s40560-024-00763-x)

Abstract

Objective: Acute respiratory failure is a leading cause of critical illness in children. However, patient outcomes and early predictors of unfavorable outcomes are not well understood. This study aimed to describe composite unfavorable outcomes, defined as in-hospital death or discharge with new comorbidities, and to identify early predictors in children with acute respiratory failure in acute care hospitals.

Design: Retrospective cohort study using a national inpatient database in Japan.

Setting: All acute care hospitals registered in the database.

Patients: This study included children under 20 years of age who were admitted with acute respiratory diseases between July 2010 and March 2022 and received ventilatory support within the first three days of hospitalization.

Intervention: None.

Measurements and main results: Among 29,362 eligible children, the median age was 1.2 (interquartile range, 0.3-3.7) years and 28.8% had underlying conditions. The highest level of ventilatory support within the first three days was invasive ventilation (69.4%), noninvasive ventilation (1.0%), and high-flow nasal cannula (29.7%). Respiratory diagnoses included pneumonia (58.6%), bronchiolitis (29.0%), and asthma (11.1%). Among these children, 669 (2.3%) died and 1994 (6.8%) were discharged with new comorbidities, resulting in 2663 (9.1%) children experiencing unfavorable outcomes. In the logistic regression model, older age, underlying conditions, pneumonia, and low hospital volume were associated with unfavorable outcomes after adjusting for covariates.

Conclusions: A significant proportion of pediatric patients with acute respiratory failure experienced unfavorable outcomes, warranting future efforts to improve acute care services for at-risk children. Early predictors identified from national database analyses could inform risk stratification and optimize the provision of acute care services for vulnerable pediatric patients.

Keywords: Children; Comorbidity; Epidemiology; Pediatric; Prognosis; Respiratory failure.

© 2024. The Author(s).

Conflict of interest statement

Declarations. Competing interests: The authors declare that they have no competing interests. **Ethics approval and consent to participate:** The Institutional Review Board of the University of Tokyo approved this study (approval number: 3501-(5); May 19, 2021), and the requirement for informed consent was waived owing to the use of anonymized data. **Consent for publication:** Not applicable.

- [29 references](#)
- [2 figures](#)

Supplementary info

Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

18

J Exp Med

•

-
-

. 2024 Dec 2;221(12):e20240103.

doi: 10.1084/jem.20240103. Epub 2024 Sep 19.

[Interleukin-33-activated basophils promote asthma by regulating Th2 cell entry into lung tissue](#)

[Martijn J Schuijs](#)^{#1,2}, [Claudia M Brenis Gomez](#)^{#1,2}, [Fabian Bick](#)^{1,2}, [Justine Van Moorlegghem](#)^{1,2}, [Manon Vanheerswynghels](#)^{1,2}, [Geert van Loo](#)^{3,4}, [Rudi Beyaert](#)^{4,5}, [David Voehringer](#)⁶, [Richard M Locksley](#)⁷, [Hamida Hammad](#)^{#1,2}, [Bart N Lambrecht](#)^{#1,2,8}

Affiliations Expand

- PMID: 39297875
- PMCID: PMC11413418 (available on 2025-03-19)
- DOI: [10.1084/jem.20240103](https://doi.org/10.1084/jem.20240103)

Abstract

Asthma is characterized by lung eosinophilia, remodeling, and mucus plugging, controlled by adaptive Th2 effector cells secreting IL-4, IL-5, and IL-13. Inhaled house dust mite (HDM) causes the release of barrier epithelial cytokines that activate various innate immune cells like DCs and basophils that can promote Th2 adaptive immunity directly or indirectly. Here, we show that basophils play a crucial role in the development of type 2 immunity and eosinophilic inflammation, mucus production, and bronchial hyperreactivity in response to HDM inhalation in C57Bl/6 mice. Interestingly, conditional depletion of basophils during sensitization did not reduce Th2 priming or asthma inception, whereas depletion during allergen challenge did. During the challenge of sensitized mice, basophil-intrinsic IL-33/ST2 signaling, and not FcεRI engagement, promoted basophil IL-4 production and subsequent Th2 cell recruitment to the lungs via vascular integrin expression. Basophil-intrinsic loss of the ubiquitin modifying molecule Tnfrsf10b, involved in dampening IL-33 signaling, enhanced key asthma features. Thus, IL-33-activated basophils are gatekeepers that boost allergic airway inflammation by controlling Th2 tissue entry.

© 2024 Schuijs et al.

Conflict of interest statement

Disclosures: The authors declare no competing interests exist.

- [Cited by 1 article](#)
- [87 references](#)

Supplementary info

MeSH terms, Substances, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

19

World Allergy Organ J

-
-
-

. 2024 Nov 21;17(12):101000.

doi: 10.1016/j.waojou.2024.101000. eCollection 2024 Dec.

[Longitudinal multi-trajectory phenotypes of severe eosinophilic asthma on type 2 biologics treatment](#)

[Duong Duc Pham](#)¹, [Ji-Hyang Lee](#)¹, [Hyouk-Soo Kwon](#)¹, [Woo-Jung Song](#)¹, [You Sook Cho](#)¹, [Hyunkyong Kim](#)¹, [Jae-Woo Kwon](#)², [So-Young Park](#)³, [Sujeong Kim](#)⁴, [Gyu Young Hur](#)⁵, [Byung Keun Kim](#)⁶, [Young-Hee Nam](#)⁷, [Min-Suk Yang](#)⁸, [Mi-Yeong Kim](#)⁹, [Sae-Hoon Kim](#)¹⁰, [Byung-Jae Lee](#)¹¹, [Taehoon Lee](#)¹², [So Young Park](#)¹³, [Min-Hye Kim](#)¹⁴, [Young-Joo Cho](#)¹⁵, [ChanSun Park](#)¹⁶, [Jae-Woo Jung](#)¹⁷, [Han Ki Park](#)¹⁸, [Joo-Hee Kim](#)¹⁹, [Ji-Yong Moon](#)²⁰, [Pankaj Bhavsar](#)²¹, [Ian M Adcock](#)²¹, [Kian Fan Chung](#)²¹, [Tae-Bum Kim](#)¹

Affiliations Expand

- PMID: 39640896
- PMCID: [PMC11617764](#)
- DOI: [10.1016/j.waojou.2024.101000](#)

Abstract

Background: Limited understanding exists regarding the progression trajectory of severe eosinophilic asthma (SEA) patients on type 2 biologics therapies.

Objective: We aim to explore distinct longitudinal phenotypes of these patients based on crucial asthma biomarkers.

Methods: We enrolled 101 adult patients with SEA. Of these, 51 were treated with anti-IL5/IL5R α or anti-IL5/IL5R α R antibody, and 50 with anti-IL-4R α antibody. Multi-trajectory analysis, an extension of univariate group-based trajectory modeling, was used to categorize patients based on their trajectories of forced expiratory volume in 1 s (FEV₁), blood eosinophil counts (BEC), and fractional exhaled nitric oxide (FeNO) levels at baseline, and after 1, 6, and 12 months of treatment. Associations between trajectory-based clusters and clinical parameters were examined.

Results: Among anti-IL5/IL5R α antibody-treated patients, 2 clusters were identified. The cluster characterized by higher baseline BEC and lower FEV₁ showed a better response, with improvements in FEV₁ and reductions in BEC over time. Among anti-IL-4R α antibody-treated, 3 clusters were identified. Clusters with moderate BEC and FeNO at baseline demonstrated better improvements in FEV₁ and reductions in FeNO, despite increased BEC during follow-up. Conversely, individuals with extremely low FeNO and high BEC at baseline were more likely to experience poorer progression, demonstrating an increase in FeNO and a reduction in FEV₁.

Conclusion: To optimally monitor treatment response in SEA patients on type 2 biologics, integrating longitudinal biomarker features is essential.

Keywords: Multi-trajectory analysis; Severe eosinophilic asthma; Type 2 biologics.

© 2024 The Author(s).

Conflict of interest statement

The authors have no conflicts of interest to declare.

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

[Proceed to details](#)

Cite

Share

20

J Pediatr Intensive Care

-
-
-

. 2022 Feb 21;13(4):344-351.

doi: 10.1055/s-0042-1742674. eCollection 2024 Dec.

[Safety and Effectiveness of Prolonged Magnesium Sulfate \(MgSO₄\) Infusion for Asthma Exacerbation in Children](#)

[Saif Sulaiman Awlad Thani](#)¹, [Atheer Ahmed Alkhan](#)², [Muzna Yahya Al-Farsi](#)², [Ahmed Mohammed Al Kamzari](#)²

Affiliations Expand

- PMID: 39629342
- PMCID: [PMC11584261](#)
- DOI: [10.1055/s-0042-1742674](#)

Abstract

The objective of this study was to assess the safety and describe treatment details of prolonged magnesium sulfate (MgSO₄) infusion for children with asthma exacerbation. A retrospective cross-sectional study included children under 13 years of age who were admitted with asthma exacerbation and received at least 24 hours of MgSO₄ infusion. One hundred children were included. No patients developed serious adverse events. The mean infusion duration was 74.2 hours. Eighty-nine percent recovered with no other bronchodilator infusions, and 94% did not require respiratory support escalation. Prolonged MgSO₄ infusion is safe at a maximum dose of 30 mg/kg/h and may be beneficial for children with asthma exacerbation.

Keywords: asthma exacerbation; magnesium sulfate infusion; safety.

Thieme. All rights reserved.

Conflict of interest statement

Conflict of Interest None declared.

- [40 references](#)
- [2 figures](#)

[Proceed to details](#)

Cite

Share

21

Pediatrics

-
-

•

. 2024 Dec 1;154(Suppl 4):S47.

doi: 10.1542/peds.2024-069114LG.

[Effect of the Telemedicine Enhanced Asthma Management Through the Emergency Department \(TEAM-ED\) Program on Asthma Morbidity: A Randomized Controlled Trial](#)

[Sarah Campbell](#)¹, [Elizabeth Wisner](#)¹

Affiliations Expand

• PMID: 39620824

• DOI: [10.1542/peds.2024-069114LG](#)

No abstract available

Full text links

[AAP Publications](#)

[Proceed to details](#)

Cite

Share

22

Pediatrics

•

•

•

. 2024 Dec 1;154(Suppl 4):S46-S47.

doi: 10.1542/peds.2024-069114LF.

[Evaluating Inhaler Education Intervention for Hospitalized Children With Asthma: A Randomized Controlled Trial](#)

[Collette M Tilly](#)¹, [Akilah A Jefferson](#)¹

Affiliations Expand

• PMID: 39620807

- DOI: [10.1542/peds.2024-069114LF](https://doi.org/10.1542/peds.2024-069114LF)

No abstract available

Full text links

[AAP Publications](#)

[Proceed to details](#)

Cite

Share

23

Pediatrics

-
-
-

. 2024 Dec 1;154(Suppl 4):S44.

doi: 10.1542/peds.2024-069114LB.

[Asthma Outcomes in Pediatric Patients With 30-Day Follow-up After an Asthma Hospitalization in a Medicaid-Managed Care Program](#)

[Hope Retif](#)¹, [Andrew Abreo](#)¹

Affiliations Expand

- PMID: 39620791

- DOI: [10.1542/peds.2024-069114LB](https://doi.org/10.1542/peds.2024-069114LB)

No abstract available

Full text links

[AAP Publications](#)

[Proceed to details](#)

Cite

Share

24

Pediatrics

-
-
-

. 2024 Dec 1;154(Suppl 4):S44-S45.

doi: 10.1542/peds.2024-069114LC.

[Predictors of Asthma Control Differ From Predictors of Asthma Attacks in Children: The Swiss Pediatric Airway Cohort](#)

[Jillian Belmonte](#)¹, [Girish Vitalpur](#)¹

Affiliations Expand

- PMID: 39620790
- DOI: [10.1542/peds.2024-069114LC](https://doi.org/10.1542/peds.2024-069114LC)

No abstract available

Full text links

[AAP Publications](#)

[Proceed to details](#)

Cite

Share

25

Pediatrics

-
-
-

. 2024 Dec 1;154(Suppl 4):S36-S37.

doi: 10.1542/peds.2024-069114KA.

[Childhood Overweight and Obesity and Abnormal Birth Anthropometric Measures Are Associated With a Higher Prevalence of Childhood Asthma in Preschool Age](#)

[Hope Retif](#)¹, [Andrew Abreo](#)¹

Affiliations Expand

- PMID: 39620782

- DOI: [10.1542/peds.2024-069114KA](https://doi.org/10.1542/peds.2024-069114KA)

No abstract available

Full text links

[AAP Publications](#)

[Proceed to details](#)

Cite

Share

26

Pediatrics

-
-
-

. 2024 Dec 1;154(Suppl 4):S51.

doi: 10.1542/peds.2024-069114ME.

[Association Between T2-Related Comorbidities and Effectiveness of Biologics in Severe Asthma](#)

[Jennifer Chester](#)¹, [Joyce E Yu](#)¹

Affiliations Expand

- PMID: 39620779

- DOI: [10.1542/peds.2024-069114ME](https://doi.org/10.1542/peds.2024-069114ME)

No abstract available

Full text links

[AAP Publications](#)

[Proceed to details](#)

Cite

Share

27

Pediatrics

-
-
-

. 2024 Dec 1;154(Suppl 4):S19.

doi: 10.1542/peds.2024-069114G.

[Long-Term Efficacy of House Dust Mite Sublingual Immunotherapy on Clinical and Pulmonary Function in Patients With Asthma and Allergic Rhinitis](#)

[Fatema Mollah¹, Harvey L Leo¹](#)

Affiliations Expand

- PMID: 39620776
- DOI: [10.1542/peds.2024-069114G](#)

No abstract available

Full text links

[AAP Publications](#)

[Proceed to details](#)

Cite

Share

28

Pediatrics

-
-
-

. 2024 Dec 1;154(Suppl 4):S49.

doi: 10.1542/peds.2024-069114MB.

[A Multicenter Randomized, Double-Blind, Placebo-Controlled, Parallel-Group Study to Evaluate the Effects of a 1-Year Regimen of Orally Inhaled Fluticasone Furoate 50](#)

[ug Once Daily on Growth Velocity in Prepubertal, Pediatric Participants With Well-Controlled Asthma](#)

[J Michala Jindra¹, Clinton Dunn¹](#)

Affiliations Expand

- PMID: 39620746
- DOI: [10.1542/peds.2024-069114MB](#)

No abstract available

Full text links

[AAP Publications](#)

[Proceed to details](#)

Cite

Share

29

Pediatrics

-
-
-

. 2024 Dec 1;154(Suppl 4):S50.

doi: 10.1542/peds.2024-069114MC.

[Budesonide/Formoterol Maintenance and Reliever Therapy in Childhood Asthma: Real-World Effectiveness and Economic Assessment](#)

[Clarissa Lomonaco¹, Clinton Dunn¹](#)

Affiliations Expand

- PMID: 39620745
- DOI: [10.1542/peds.2024-069114MC](#)

No abstract available

Full text links

AAP Publications

[Proceed to details](#)

Cite

Share

30

Pediatrics

-
-
-

. 2024 Dec 1;154(Suppl 4):S47-S48.

doi: 10.1542/peds.2024-069114M.

[Effectiveness of Asthma Preventer Dispensing for Preventing Childhood Asthma Readmissions: A Multisite Cohort Linkage Study](#)

[William Tredwell¹](#), [Angela D Hogan¹](#)

Affiliations Expand

- PMID: 39620733
- DOI: [10.1542/peds.2024-069114M](#)

No abstract available

Full text links

AAP Publications

[Proceed to details](#)

Cite

Share

31

Review

Clin Transl Allergy

-
-
-

. 2024 Dec;14(12):e70009.

doi: 10.1002/clt2.70009.

[10 practical priorities to prevent and manage serious allergic reactions: GA²LEN ANACare and EFA Anaphylaxis Manifesto](#)

[Antonella Muraro](#)¹, [Debra de Silva](#)², [Marcia Podesta](#)³, [Aikaterini Anagnostou](#)^{4 5}, [Victoria Cardona](#)⁶, [Susanne Halken](#)⁷, [Pete Smith](#)⁸, [Luciana Kase Tanno](#)⁹, [Paul Turner](#)¹⁰, [Margitta Worm](#)¹¹, [Montserrat Alvaro-Lozano](#)¹², [Stefania Arasi](#)¹³, [Anna Asarnoj](#)¹⁴, [Simona Barni](#)¹⁵, [Kirsten Beyer](#)^{11 16}, [Lucy A Bilaver](#)¹⁷, [Andrew Bird](#)¹⁸, [Roberta Bonaguro](#)¹, [Helen A Brough](#)¹⁹, [R Sharon Chinthrajah](#)²⁰, [Emma E Cook](#)²¹, [Céline Demoulin](#)²², [Antoine Deschildre](#)²³, [Timothy E Dribin](#)²⁴, [Motohiro Ebisawa](#)²⁵, [Montserrat Fernandez-Rivas](#)²⁶, [Alessandro Fiocchi](#)²⁷, [David M Fleischer](#)²⁸, [Eleanor Garrow](#)²⁹, [Jennifer Gerdts](#)³⁰, [Mattia Giovannini](#)^{15 31}, [Kirsi M Järvinen](#)³², [Mary Kelly](#)³³, [Edward F Knol](#)³⁴, [Gideon Lack](#)¹⁹, [Francesca Lazzarotto](#)¹, [Thuy-My Le](#)³⁵, [Stephanie Leonard](#)³⁶, [Jay Lieberman](#)³⁷, [Michael Makris](#)³⁸, [Lianne Mandelbaum](#)³⁹, [Mary Jane Marchisotto](#)⁴⁰, [Gustavo Andres Marino](#)⁴¹, [Francesca Mori](#)¹⁵, [Caroline Nilsson](#)^{42 43}, [Anna Nowak-Wegrzyn](#)^{44 45}, [Mikaela Odemyr](#)⁴⁶, [H N G Oude Elberink](#)⁴⁷, [Kati Palosuo](#)⁴⁸, [Nandinee Patel](#)¹⁰, [Jennifer Pier](#)⁴⁹, [Sung Poblete](#)⁵⁰, [Rima Rachid](#)⁵¹, [Pablo Rodríguez Del Río](#)⁵², [Maria Said](#)⁵³, [Hugh A Sampson](#)⁵⁴, [Angel Sánchez Sanz](#)⁵⁵, [Sabine Schnadt](#)⁵⁶, [Fallon Schultz](#)⁵⁷, [Alice Toniolo](#)¹, [Julia E M Upton](#)⁵⁸, [Carina Venter](#)⁵⁹, [Brian P Vickery](#)⁶⁰, [Berber Vlieg-Boerstra](#)⁶¹, [Julie Wang](#)⁵⁴, [Graham Roberts](#)^{62 63 64 65}, [Torsten Zuberbier](#)^{11 66}; [GA²LEN ANACare Centres and EFA](#)

Affiliations Expand

- PMID: 39614094
- PMCID: [PMC11606857](#)
- DOI: [10.1002/clt2.70009](#)

Abstract

This Anaphylaxis Manifesto calls on communities to prioritise 10 practical actions to improve the lives of people at risk of serious allergic reactions. The Global Allergy and Asthma European Network and the European Federation of Allergy and Airways Diseases Patients' Associations (EFA) compiled patient-centric priorities. We used qualitative consensus methods, research evidence and feedback from over 200 patient groups, stakeholder organisations and healthcare professionals. We encourage healthcare, education and food organisations to collaborate with people at risk of serious allergic reactions to tackle safety, anxiety and financial burdens for

individuals and societies. Key priorities for prevention include awareness-raising campaigns for the public and professionals, school and workplace initiatives and mandatory precautionary allergen labels on food. Priorities for improving immediate and long-term management include educating healthcare professionals, patients and schools about when and how to use adrenaline, funding two approved adrenaline devices for everyone at risk, and facilitating access to allergy specialists. Integrated care pathways should include clinical and non-clinical management options such as individualised risk assessment and quality of life assessment, self-management plans, dietetic and psychosocial support and peer support. Organisations around the world are committing to work together towards these priorities.

Keywords: adrenaline; allergy; anaphylaxis; hypersensitivity.

© 2024 The Author(s). *Clinical and Translational Allergy* published by John Wiley & Sons Ltd on behalf of European Academy of Allergy and Clinical Immunology.

Conflict of interest statement

A separate file has been provided listing all potential interests of the authors.

- [148 references](#)

Supplementary info

Publication types, Grants and funding [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

32

Review

Curr Opin Immunol

-
-
-

. 2024 Dec:91:102503.

doi: 10.1016/j.coi.2024.102503. Epub 2024 Nov 8.

[Metabolic adaptations of ILC2 and Th2 cells in type 2 immunity](#)

[Anna K Kania](#)¹, [Efthymia Kokkinou](#)¹, [Erika Pearce](#)¹, [Edward Pearce](#)²

Affiliations Expand

- PMID: 39520759
- DOI: [10.1016/j.coi.2024.102503](https://doi.org/10.1016/j.coi.2024.102503)

Abstract

Type 2 immune responses play a crucial role in host defense against parasitic infections but can also promote the development of allergies and asthma. This response is orchestrated primarily by group 2 innate lymphoid cells (ILC2) and helper type 2 (Th2) cells, both of which undergo substantial metabolic reprogramming as they transition from resting to activated states. Understanding these metabolic adaptations not only provides insights into the fundamental biology of ILC2 and Th2 cells but also opens up potential therapeutic avenues for the identification of novel metabolic targets that can extend the current treatment regimens for diseases in which type 2 immune responses play pivotal roles. By integrating recent findings, this review underscores the significance of cellular metabolism in orchestrating immune functions and highlights future directions for research in this evolving field.

Copyright © 2024. Published by Elsevier Ltd.

Conflict of interest statement

Declaration of Competing Interest EJP and ELP are members of the Scientific Advisory Board for Remedy Plan.

Supplementary info

Publication types, MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

33

Review

Exp Ther Med

•

-
-

. 2024 Oct 22;28(6):460.

doi: 10.3892/etm.2024.12750. eCollection 2024 Dec.

[Saharan dust and respiratory health: Understanding the link between airborne particulate matter and chronic lung diseases \(Review\)](#)

[Vasiliki Epameinondas Georgakopoulou¹, Chrysoula Taskou², Athina Diamanti², Despoina Beka³, Petros Papalexis^{4,5}, Nikolaos Trakas⁶, Demetrios A Spandidos⁷](#)

Affiliations Expand

- PMID: 39478735
- PMCID: [PMC11523266](#)
- DOI: [10.3892/etm.2024.12750](#)

Abstract

Saharan dust storms, which originate from the Sahara desert, have a significant impact on global health, especially on respiratory conditions of populations exposed to fine particulate matter that travels across continents. Dust events, characterized by the transport of mineral dust such as quartz and feldspar, lead to the suspension of particulate matter in the atmosphere, capable of traversing long distances and affecting air quality adversely. Emerging research links these dust episodes with increased incidence and exacerbation of lung diseases, including asthma and chronic obstructive pulmonary disease, especially during peak dust emission seasons from November to March. The present review aims to synthesize existing scientific evidence concerning the respiratory health impacts of Saharan dust, examining the environmental dynamics of dust transmission, the physical and chemical properties of dust particles, and their biological effects on human health. Further, it assesses epidemiological studies and discusses public health strategies for mitigating adverse health outcomes. Given the complexity of interactions between atmospheric dust particles and respiratory health, this review also highlights critical research gaps that need attention to better understand and manage the health risks associated with Saharan dust.

Keywords: Sahara desert; Saharan dust; particulate matter; public health strategies; respiratory health.

Copyright: © 2024 Georgakopoulou et al.

Conflict of interest statement

DAS is the Editor-in-Chief for the journal, but had no personal involvement in the reviewing process, or any influence in terms of adjudicating on the final decision, for this article. The other authors confirm that they have no competing interests.

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

Supplementary info

Publication types, Grants and fundingExpand

Full text links

[Proceed to details](#)

Cite

Share

34

Randomized Controlled Trial

Adv Ther

-
-
-

. 2024 Dec;41(12):4601-4616.

doi: 10.1007/s12325-024-02998-4. Epub 2024 Oct 29.

[Dupilumab is Efficacious in Young Children with Atopic Dermatitis Regardless of Type 2 Comorbidities](#)

[Mark Boguniewicz](#)^{1,2}, [Lawrence D Sher](#)³, [Amy S Paller](#)⁴, [Peter D Arkwright](#)⁵, [Shigemi Yoshihara](#)⁶, [Zhen Chen](#)⁷, [Parul Shah](#)⁷, [Ainara Rodríguez Marco](#)⁸

Affiliations Expand

- PMID: 39470878
- PMCID: [PMC11550244](#)
- DOI: [10.1007/s12325-024-02998-4](#)

Abstract

Introduction: Patients with atopic dermatitis (AD) often have other comorbid type 2 inflammatory conditions. The aim of this study was to evaluate the impact of type 2 comorbidities on the response to and safety of dupilumab in young children with AD.

Methods: LIBERTY AD PRESCHOOL part B was a randomized, placebo-controlled trial in children aged 6 months to 5 years with moderate-to-severe AD. In this post hoc analysis, patients were stratified by the presence or absence of caregiver-reported selected type 2 comorbidities at baseline: asthma, allergic rhinitis (AR), and food allergies (FAs).

Results: At week 16, significantly more patients receiving dupilumab versus placebo, with or without asthma and AR, achieved an Investigator's Global Assessment (IGA) score of 0/1 and a $\geq 75\%$ improvement in Eczema Area and Severity Index (all $p < 0.05$). Significantly more patients receiving dupilumab versus placebo with FAs and numerically more patients without FAs achieved an IGA score of 0/1 ($p = 0.0007$ and $p = 0.06$). Numerically more patients receiving dupilumab versus placebo with asthma and significantly more patients without asthma achieved a ≥ 4 -point reduction in the weekly average of daily score on the Worst Scratch/Itch Numeric Rating Scale (WSI-NRS) ($p = 0.6$ and $p < 0.0001$). Additionally, significantly more patients receiving dupilumab versus placebo with or without AR ($p = 0.008$ and $p < 0.0001$) and with or without FAs ($p = 0.0002$ and $p = 0.004$) achieved a ≥ 4 -point reduction in the weekly average of daily score on the WSI-NRS. Overall safety was consistent with the known dupilumab safety profile.

Conclusions: Dupilumab treatment improves AD signs and symptoms in children aged 6 months to 5 years with and without type 2 comorbidities such as asthma, AR, and FAs.

Trial registration: ClinicalTrials.gov registration number [NCT03346434](https://clinicaltrials.gov/ct2/show/study/NCT03346434).

Infographic: Do type 2 comorbidities impact the response to dupilumab in children with atopic dermatitis? (MP4 103,451 KB).

Keywords: Atopic dermatitis; Comorbidities; Dupilumab; Pediatrics; Type 2 inflammation.

Plain language summary

Patients with atopic dermatitis (AD; also known as eczema) often have other inflammatory conditions as well, including asthma, allergic rhinitis, and food allergies. Like AD, they are all so-called type 2 conditions, caused by similar processes in the body. A drug called dupilumab has been shown to be effective in treating patients with moderate-to-severe AD. This study looked at the results of a clinical trial in which children aged 6 months to 5 years with moderate-to-severe AD had been treated with either dupilumab or placebo for 16 weeks. The trial results had already shown that at the end of the study, dupilumab compared with placebo resulted in better improvements in their disease and quality of life. In this study, we looked at patients who had only AD, and those who had AD plus one of the other type 2 conditions. We wanted to know if the conditions would impact the response to dupilumab in children with AD. Results showed that dupilumab was better than placebo at reducing the signs and the symptoms of AD in patients, whether or not they also had asthma, allergic rhinitis, or food allergies. Overall safety was consistent with the known dupilumab safety profile. In summary, dupilumab improves the signs

and symptoms of moderate-to-severe AD in children aged 6 months to 5 years whether or not they also have another type 2 condition. These results suggest that dupilumab treatment may be effective in children with or without other type 2 conditions.

© 2024. The Author(s).

Conflict of interest statement

Mark Boguniewicz has been an investigator for Incyte, Regeneron Pharmaceuticals Inc., and Sanofi, and participated on advisory boards for AbbVie, Amgen, Dermavant, Eli Lilly, Incyte, LEO Pharma, Pfizer, Regeneron Pharmaceuticals Inc., and Sanofi. Lawrence D. Sher is an advisory board member for Aimmune Therapeutics, Optinose, Regeneron Pharmaceuticals Inc., and Sanofi; reports speaker fees from Regeneron Pharmaceuticals Inc. and Sanofi; and clinical trials funding from Aimmune Therapeutics, Amgen, AstraZeneca, Circassia, DBV Technologies, Galderma, GSK, Lupin, Merck, Mylan, Novartis, Novo Nordisk, Optinose, Pearl, Pfizer, Pulmagen, Roxane, Sanofi, Spirometrix, Teva, Vectura, and Watson Pharmaceuticals. Amy S. Paller is an investigator for AbbVie, Dermavant, Eli Lilly, Incyte, Janssen, Krystal Biotech, LEO Pharma and UCB; a consultant for Amryt Pharma, Azitra, BioCryst, BMS, Boehringer Ingelheim, Castle Creek Biosciences, Eli Lilly, Janssen, Krystal Biotech, LEO Pharma, Novartis, Regeneron Pharmaceuticals Inc., Sanofi, Seanergy, TWi Biotechnology, and UCB; and a member of the data and safety monitoring board for AbbVie, Abeona Therapeutics, Catawba Research, Galderma, and InMed Pharmaceuticals. Peter D. Arkwright has acted as an investigator for Regeneron Pharmaceuticals Inc., and has received grants from and acted as an advisor for Sanofi. Shigemi Yoshihara has acted as an investigator for Regeneron Pharmaceuticals Inc., and has received grants from and acted as an advisor for Sanofi. Zhen Chen and Parul Shah are employees and shareholders of Regeneron Pharmaceuticals Inc. Ainara Rodríguez Marco is an employee of and may hold stock and/or stock options in Sanofi.

- [38 references](#)
- [3 figures](#)

Supplementary info

Publication types, MeSH terms, Substances, Associated dataExpand

Full text links



[Proceed to details](#)

Cite

Share

35

Menopause

-
-
-

. 2024 Dec 1;31(12):1069-1077.

doi: 10.1097/GME.0000000000002443. Epub 2024 Oct 29.

[The association between age at natural menopause and risk of asthma among postmenopausal women from the Canadian Longitudinal Study on Aging](#)

[Durmalouk Kesibi](#)¹, [Michael Rotondi](#), [Heather Edgell](#), [Hala Tamim](#)

Affiliations Expand

- PMID: 39470604
- DOI: [10.1097/GME.0000000000002443](#)

Abstract

Objective: This study aimed to investigate the association between age at natural menopause and incidence of asthma among postmenopausal Canadian women.

Methods: Women between the ages of 45-85 yr were followed for a 10-yr period. Analysis was restricted to naturally postmenopausal women who are nonsmokers and did not have asthma prior to menopause. Age at natural menopause was examined using the following categories: 40-44, 45-49, 50-54 (reference), and ≥ 55 . Survival analysis was utilized to determine time to onset of asthma. Multivariable Cox regression analysis was performed to assess the relationship between age at natural menopause and asthma after adjusting for covariates.

Results: The multivariable Cox regression analysis showed a 30% decreased risk of asthma in women with age at natural menopause of 40-44 yr compared with age at natural menopause of 50-54 yr with a hazard ratio of 0.7 (95% confidence interval: 0.49-0.95).

Conclusions: Women with later ages at natural menopause may be at increased risk for asthma.

Copyright © 2024 The Author(s). Published by Wolters Kluwer Health, Inc. on behalf of The Menopause Society.

Conflict of interest statement

Financial disclosure/Conflicts of interest: None reported.

- [45 references](#)

Supplementary info

MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

36

Clinical Trial

Ann Med

-
-
-

. 2024 Dec;56(1):2417184.

doi: 10.1080/07853890.2024.2417184. Epub 2024 Oct 28.

[Long-term safety of mepolizumab for up to ~10 years in patients with severe asthma: open-label extension study](#)

[Ian Pavord](#)¹, [Robert Chan](#)², [Nicola Brown](#)², [Peter Howarth](#)³, [Martyn Gilson](#)⁴, [Robert G Price](#)⁵, [Jorge Maspero](#)⁶

Affiliations Expand

- PMID: 39465531
- PMCID: [PMC11520089](#)
- DOI: [10.1080/07853890.2024.2417184](#)

Abstract

Objectives: Long-term safety monitoring of mepolizumab is necessary to support real-world use for the treatment of severe asthma. This Long-Term Access Program assessed the safety and benefit:risk of mepolizumab in pediatric, adolescent, and adult patients with severe asthma.

Materials and methods: This was a multicenter, Phase IIIb safety, open-label extension study of multiple prior studies assessing mepolizumab in addition to standard of care (Aug 2015 - Aug 2022). Adults/adolescents (≥12 years of age)

received mepolizumab 100 mg subcutaneously (SC) every 4 weeks until mepolizumab was commercialized. Pediatric patients (6-11 years of age) received mepolizumab 40 mg or 100 mg SC (bodyweight <40 or ≥40 kg, respectively) every 4 weeks. Safety was assessed every 4 weeks and benefit:risk every 12 weeks.

Results: Of the 514 patients enrolled, 57% were female and the mean age was 51.1 (standard deviation: 14.9) years; 24 (5%) patients were 6-17 years of age. Total cumulative mepolizumab exposure across all mepolizumab studies included in this analysis was 1500.59 patient-years; median exposure was 2.03 (range, 0.08 to 9.97) years. Overall, 37 (7%) patients experienced on-treatment serious adverse events (SAEs): 34/502 (7%) in the 100 mg SC group and 3/7 (43%) in the 40 mg SC pediatric group. Two patients experienced SAEs considered to be treatment-related by the investigator. Infections were the most common SAEs of special interest (9 [2%] patients). Physician-assessed benefit:risk of mepolizumab supported continued treatment over the study period.

Conclusions: This long-term safety analysis of mepolizumab was consistent with previous reports, with no emerging safety concerns; most patients had a favorable benefit:risk up to ~10 years.

Clinical trial identifier: [NCT00244686](#) (GSK ID 201956).

Keywords: Long-term access program; mepolizumab; open-label extension; safety; severe asthma with an eosinophilic phenotype.

Conflict of interest statement

IP reports speaker's honoraria for sponsored meetings from AstraZeneca, Boehringer Ingelheim, Aerocrine, Almirall, Novartis, Teva, Chiesi, Sanofi/Regeneron, and GSK; payments for organizing educational events from AstraZeneca, GSK, Sanofi/Regeneron, and Teva; honoraria for attending advisory panels with Genentech, Sanofi/Regeneron, AstraZeneca, Boehringer Ingelheim, GSK, Novartis, Teva, Merck, Circassia, Chiesi, and Knopp; payments to support US Food and Drug Administration approval meetings from GSK; sponsorship to attend international scientific meetings from Boehringer Ingelheim, GSK, AstraZeneca, Teva, and Chiesi; a grant from Chiesi to support a Phase II clinical trial in Oxford. He is co-patent holder of the rights to the Leicester Cough Questionnaire and has received payments for its use in clinical trials from Merck, Bayer, and Insmed.

JM consulted for AstraZeneca, Sanofi, and Teva, was a speaker for GSK, Menarini, Novartis, and Uriach, and received research grants from Novartis.

RC, NB, PH, MG, and RGP are employees of GSK and hold financial equities in GSK.

- [42 references](#)
- [2 figures](#)

Supplementary info

Publication types, MeSH terms, Substances, Associated data, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

37

COPD

-
-
-

. 2024 Dec;21(1):2413712.

doi: 10.1080/15412555.2024.2413712. Epub 2024 Oct 11.

[Risk Factors for Adults with Chronic Obstructive Pulmonary Disease in the United States, Utilizing State-Based Surveillance](#)

[Brandon Workman](#)^{1,2}, [Laura Nabors](#)²

Affiliations Expand

- PMID: 39392247
- DOI: [10.1080/15412555.2024.2413712](https://doi.org/10.1080/15412555.2024.2413712)

Free article

Abstract

Chronic Obstructive Pulmonary Disease (COPD) is a complex and heterogeneous condition. Exposure to tobacco smoke and air pollutants are key risk factors for COPD development; however, other risk factors include race/ethnicity, sex of adults, a history of asthma, occupational exposures, and chronic respiratory infections. Data for the current study were from the 2022 Behavioral Risk Factor Surveillance Survey. Chi-squares and multinomial logistic regression analyses, adjusted with the survey's sampling weight, were used to examine how critical health indicators impacted a COPD diagnosis. Participants ($N = 311,175$) were adults aged 45 years and older. Adjusted multinomial regression analyses showed adults who reported asthma, current and former smoking, poor physical health, depression, less physical activity, and fatigue were more likely to report COPD. Those with COPD were more likely to be male than female. Moreover, those with COPD reported higher rates of health insurance coverage, and yet had lower income and more financial difficulty affording a doctor for health services. In a follow up regression analysis, examining racial differences in COPD for participants, American Indian adults had a higher odds of

reporting COPD than the "other" race groups. Because COPD remains a leading cause of death and disability in the U.S., and racial disparities persist in respiratory outcomes, continuing to identify risk factors for vulnerable groups could assist health program planners with development of successful health messaging.

Keywords: Chronic Obstructive Pulmonary Disease; comorbidities; patient-reported outcomes; population-based study; racial and ethnic differences; tobacco use.

Supplementary info

MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

38

Exp Ther Med

-
-
-

. 2024 Oct 1;28(6):445.

doi: 10.3892/etm.2024.12735. eCollection 2024 Dec.

[Nasal allergen and methacholine provocation tests influence co-expression patterns of TGF- \$\beta\$ /SMAD and MAPK signaling pathway genes in patients with asthma](#)

[Jacek Plichta](#)¹, [Alicja Majos](#)^{1,2}, [Piotr Kuna](#)¹, [Michał Panek](#)¹

Affiliations Expand

- PMID: 39386939
- PMCID: [PMC11462400](#)
- DOI: [10.3892/etm.2024.12735](#)

Abstract

Asthma is characterized by chronic bronchial inflammation and is a highly heterogeneous disease strongly influenced by both specific and non-specific exogenous factors. The present study was performed to assess the effect of nasal allergen provocation tests and methacholine provocation tests on the mRNA co-expression patterns of genes (*SMAD1/3/6/7*, *MPK1/3* and *TGFB1/3*) involved in SMAD and non-SMAD TGF- β signaling pathways in patients with asthma. Reverse transcription-quantitative PCR was performed on blood samples taken pre-provocation and 1 h post-provocation to assess gene expression changes. Of the 59 patients studied, allergen provocations were administered to 27 patients and methacholine provocations to 32 patients. Correlations between expression levels of studied genes were found to be influenced markedly by the challenge administered, challenge test result and time elapsed since challenge. Importantly, increases in expression levels for four gene pairs (*MAPK1-SMAD3*, *MAPK3-SMAD3*, *SMAD1-SMAD3* and *SMAD3-TGFB1*) were found to correlate significantly with asthma occurrence in the allergen provocation cohort, but not in the methacholine provocation cohort. The present study allows us to draw the conclusion that both intranasal allergen and bronchial methacholine challenges influence mRNA co-expression patterns of the *SMAD1/3/6/7*, *MPK1/3* and *TGFB1/3* genes.

Keywords: SMAD; TGF; asthma; bronchial methacholine challenge; immunology; inflammation; intranasal allergen challenge; molecular allergy.

Copyright: © 2024 Plichta et al.

Conflict of interest statement

The authors declare that they have no competing interests.

- [91 references](#)

Supplementary info

Grants and fundingExpand

Full text links

[Proceed to details](#)

Cite

Share

39

Review

Curr Opin Allergy Clin Immunol

-
-

•
. 2024 Dec 1;24(6):496-503.

doi: 10.1097/ACI.0000000000001028. Epub 2024 Oct 4.

[Cost-effectiveness of allergen immunotherapy](#)

[Natalia Rodríguez-Otero](#)¹, [Elena Ramírez-Mateo](#)¹, [Maria Nieves Plana](#)^{2,3,4}, [Enrico Heffler](#)^{5,6}, [Darío Antolín-Amérigo](#)¹

Affiliations Expand

- PMID: 39364915
- DOI: [10.1097/ACI.0000000000001028](https://doi.org/10.1097/ACI.0000000000001028)

Abstract

Purpose of review: Allergic rhinitis is a relevant and global health problem affecting up to 5-50% of the general population and its prevalence is increasing due to climate change and pollution among other factors and counts among the 10 most frequent reasons for medical consultation, generating an important economic impact. Allergen immunotherapy (AIT) is the only allergy-disease-modifying treatment and there is plenty of evidence of its effectiveness with regards subcutaneous and oral routes of AIT. This narrative review article examines published literature in the last 24 months regarding the pharmacoeconomics of AIT versus standard of care treatment (SOC) for the treatment of allergic rhinitis and asthma.

Recent findings: Farraia et al. assessed in 2022 subcutaneous immunotherapy (SCIT, _438/\$500.28) and sublingual immunotherapy (SLIT) (_1021/\$1116.19) plus symptomatic treatment versus SOC treatment in children with HDM-driven allergic asthma, measuring QALYs, decrease of medication, decrease of exacerbations and symptoms. They used the cost-effective threshold: _18 482.80 (\$21 110.14), finding that AIT is cost-effective. Also, SCIT and SLIT plus symptomatic treatment was assessed versus SOC treatment in children with grass pollen allergic rhinitis. The authors concluded that SCIT (_933/\$1065.67) and SLIT (_1408/ \$1608.22) seem cost-effective, particularly SCIT.

Summary: Allergen immunotherapy is cost-effective in the management of allergic rhinitis and asthma as compared with SOC alone. As most studies consider only during-treatment costs and no long-term benefits or preventive effects are being assessed, the real cost-effectiveness of allergen immunotherapy could be even higher.

Copyright © 2024 Wolters Kluwer Health, Inc. All rights reserved.

- [32 references](#)

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

40

Eur J Pediatr

-
-
-

. 2024 Dec;183(12):5191-5202.

doi: 10.1007/s00431-024-05775-1. Epub 2024 Sep 28.

[Neonatal and early infancy antibiotic exposure is associated with childhood atopic dermatitis, wheeze and asthma](#)

[Santeri Rätty](#)¹, [Helena Ollila](#)², [Olli Turta](#)^{3,4}, [Anna Pärty](#)^{3,4}, [Ville Peltola](#)^{3,4}, [Hanna Lagström](#)^{5,6}, [Johanna Lempainen](#)^{3,4,7}, [Samuli Rautava](#)^{8,9}

Affiliations Expand

- PMID: 39340678
- PMCID: [PMC11527921](#)
- DOI: [10.1007/s00431-024-05775-1](#)

Abstract

Antibiotics are frequently administered in the neonatal period and early infancy. Little is known about the long-term health consequences of early life antibiotic exposure. The objective is to investigate the association between neonatal and early life (0-6 months) antibiotic treatment and the development of atopic dermatitis, asthma and the use of inhaled corticosteroid medication later in childhood. We analyzed data obtained from hospital records and national registers in a cohort of 11,255 children. The association between early antibiotic exposure and the outcomes were analyzed using logistic regression. Confounding factors were included in the model. Neonatal antibiotic therapy for confirmed infection was associated with childhood atopic dermatitis (adjusted odds ratio 1.49; 95% confidence interval 1.15-1.94). Antibiotic therapy by six months of age was more common in children developing atopic dermatitis (adjusted odds ratio 1.38; 95% confidence interval 1.15-1.64), asthma

(adjusted odds ratio 1.56; 95% confidence interval 1.32- 1.85) and inhaled corticosteroid medication use (adjusted odds ratio 1.88; 95% confidence interval 1.66-2.13). **Conclusions:** Neonatal antibiotic therapy for confirmed or clinically diagnosed infection is associated with increased risk of atopic dermatitis later in childhood. Antibiotic treatment before six months of age is associated with atopic dermatitis, asthma and inhaled corticosteroid use. **What is known:** • The use of antibiotics early in life has been associated with an increased risk of developing atopic dermatitis or asthma. • Confounding by indication or reverse causation may underlie the observed associations. **What is new:** • Our results demonstrate that neonatal antibiotic therapy for confirmed or clinically diagnosed infection was associated with increased risk of atopic dermatitis and antibiotic treatment before six months of age was associated with atopic dermatitis, asthma and inhaled corticosteroid use in analyses adjusted for confounding factors.

Keywords: Antibiotics; Asthma; Atopic; Dermatitis; Newborn.

© 2024. The Author(s).

Conflict of interest statement

The authors declare no competing interests.

- [28 references](#)
- [3 figures](#)

Supplementary info

MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

41

Review

Curr Opin Immunol

-
-
-

. 2024 Dec:91:102490.

doi: 10.1016/j.coi.2024.102490. Epub 2024 Sep 25.

[Epithelial sensing in allergic disease](#)

[Michael V Mandanas](#)¹, [Nora A Barrett](#)²

Affiliations Expand

- PMID: 39326203
- PMCID: PMC11609016 (available on 2025-12-01)
- DOI: [10.1016/j.coi.2024.102490](https://doi.org/10.1016/j.coi.2024.102490)

Abstract

Epithelial cells provide a first line of immune defense by maintaining barrier function, orchestrating mucociliary clearance, secreting antimicrobial molecules, and generating sentinel signals to both activate innate immune cells and shape adaptive immunity. Although epithelial alarmins play a particularly important role in the initiation of type 2 inflammation in response to allergens, the mechanisms by which epithelial cells sense the environment and regulate the generation and release of alarmins have been poorly understood. Recent studies have identified new sensors and signaling pathways used by barrier epithelial cells to elicit type 2 inflammation, including a novel pathway for the release of interleukin-33 from the nucleus that depends on apoptotic signaling. These recent findings have implications in the development of allergic diseases, from atopic eczema to food allergy, rhinitis, and asthma.

Copyright © 2024 Elsevier Ltd. All rights reserved.

Conflict of interest statement

Declaration of Competing Interest Michael Mandanas and Nora A Barrett have no interests to declare.

- [47 references](#)

Supplementary info

Publication types, MeSH terms, Substances, Grants and funding Expand

Full text links



[Proceed to details](#)

Cite

Share

-
-
-

. 2024 Dec;133(6):660-666.e5.

doi: 10.1016/j.anai.2024.09.005. Epub 2024 Sep 16.

[Impact of metabolic and weight components on incident asthma using a real-world cohort](#)

[Melissa H Bloodworth](#)¹, [Patrick J Staso](#)¹, [Shi Huang](#)², [Eric Farber-Eger](#)¹, [Kevin D Niswender](#)¹, [Frank E Harrell Jr](#)², [Quinn S Wells](#)³, [Leonard B Bacharier](#)⁴, [Megan M Shuey](#)¹, [Katherine N Cahill](#)⁵

Affiliations Expand

- PMID: 39293715
- DOI: [10.1016/j.anai.2024.09.005](https://doi.org/10.1016/j.anai.2024.09.005)

Free article

Abstract

Background: Obesity and metabolic dysregulation (MetD) have increasing prevalence and adversely affect asthma morbidity and therapeutic response.

Objective: To determine the role of weight and MetD on incident asthma in adulthood.

Methods: In a retrospective, longitudinal cohort of patients, we performed a time-to-asthma diagnosis analysis after a 3-year landmark period (t_0 - t_3) during which weight and MetD components were evaluated. We assessed incident asthma risk with MetD components and weight.

Results: In total, 90,081 patients met the inclusion criteria, with 836 cases (0.93%) of incident asthma in our primary cohort. Diabetes present at t_0 , but no other MetD components, was associated with increased risk of asthma (adjusted hazard ratio = 1.85, 95% CI: 1.27-2.71, $P = .0002$). The effect of weight on asthma risk, independent of other MetD components, identified individuals with overweight or obesity as having a 10-year attributable risk of 15.4%. Metformin was prescribed more frequently, and hemoglobin A1c levels were lower in patients with diabetes in whom asthma did not develop ($P < .0001$).

Conclusion: Weight and diabetes prevention and management represent modifiable risk factors for adult asthma development.

Copyright © 2024 The Authors. Published by Elsevier Inc. All rights reserved.

Conflict of interest statement

Disclosures Dr Bacharier reports personal fees from GlaxoSmithKline, Genentech/Novartis, Merck, DBV Technologies, Teva, Boehringer Ingelheim, AstraZeneca, Avillion, WebMD/Medscape, Sanofi/Regeneron, Vectura, Circassia, OM Pharma, Elsevier, Kinaset, and Vertex outside the submitted work. Dr Cahill served on scientific advisory boards for AstraZeneca, Sanofi, Genentech, Regeneron, Novartis, and GlaxoSmithKline; served as a consultant for Ribon Therapeutics, Third Harmonic Bio, and Verantos; reports royalties from UpToDate; and reports research support from Novo Nordisk. The remaining authors have no conflicts of interest to report.

Supplementary info

MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

43

Comparative Study

J Aerosol Med Pulm Drug Deliv

-
-
-

. 2024 Dec;37(6):351-361.

doi: 10.1089/jamp.2024.0005. Epub 2024 Sep 4.

[Small Airways Disease Affects Aerosol Deposition in Children with Severe Asthma: A Functional Respiratory Imaging Study](#)

[Wytse B van den Bosch^{1,2}, Elisabeth J Ruijgrok³, Navid M Tousi⁴, Harm A W M Tiddens^{1,2,5}, Hettie M Janssens¹](#)

Affiliations Expand

- PMID: 39230427

- DOI: [10.1089/jamp.2024.0005](https://doi.org/10.1089/jamp.2024.0005)

Abstract

Background: Small airways disease (SAD) in severe asthma (SA) is associated with high disease burden. Effective treatment of SAD could improve disease control. Reduced end-expiratory flows (forced expiratory flow [FEF]₂₅₋₇₅ and FEF₇₅) are considered sensitive indicators of SAD. Inhaled medication should be delivered to the smaller peripheral airways to treat SAD effectively. Aerosol deposition is affected by structural airway changes. Little is known about the effect of SAD on aerosol delivery to the smaller peripheral airways. Functional respiratory imaging (FRI) is a validated technique using 3D reconstructed chest computed tomography (CT) and computational fluid dynamics to predict aerosol deposition in the airways. **Aim:** This study aims to compare central and peripheral (= small airways) deposition between children with SA and SAD and children with SA without SAD, with different inhaler devices and inhalation profiles. **Methods:** FRI was used to predict the deposition of beclomethasone/formoterol dry powder inhaler (DPI), beclomethasone/formoterol pressurized metered dose inhaler with valved holding chamber (pMDI/VHC), and salbutamol pMDI/VHC for different device-specific inhalation profiles in chest-CT of 20 children with SA (10 with and 10 without SAD). SAD was defined as FEF₂₅₋₇₅ and FEF₇₅ z-score < -1.645 and forced vital capacity (FVC) z-score > -1.645. No SAD was defined as forced expiratory volume (FEV)₁, FEF₂₅₋₇₅, FEF₇₅, and FVC z-score > -1.645. The intrathoracic, central, and peripheral airways depositions were determined. Primary outcome was difference in central-to-peripheral (C:P) deposition ratio between children with SAD and without SAD. **Results:** Central deposition was significantly higher (~3.5%) and peripheral deposition was lower (2.9%) for all inhaler devices and inhalation profiles in children with SAD compared with children without SAD. As a result C:P ratios were significantly higher for all inhaler devices and inhalation profiles, except for beclomethasone administered through DPI ($p = .073$), in children with SAD compared with children without SAD. **Conclusion:** Children with SA and SAD have higher C:P ratios, that is, higher central and lower peripheral aerosol deposition, than children without SAD. The intrathoracic, central, and peripheral deposition of beclomethasone/formoterol using DPI was lower than using pMDI/VHC.

Keywords: Respiratory aerosols and droplets; beclomethasone dipropionate; formoterol fumarate; inhalation spacers; spirometry.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

Review

Curr Opin Allergy Clin Immunol

-
-
-

. 2024 Dec 1;24(6):529-535.

doi: 10.1097/ACI.0000000000001026. Epub 2024 Aug 29.

[Real-world evidence of allergen immunotherapy](#)

[Federica Buta^{1,2}](#), [Giovanni Paoletti^{1,3}](#), [Maria Chiara Bragato¹](#), [Mattia Giovannini^{4,5}](#), [Giorgio Walter Canonica^{1,3}](#), [Enrico Heffler^{1,3}](#)

Affiliations Expand

- PMID: 39212626
- DOI: [10.1097/ACI.0000000000001026](https://doi.org/10.1097/ACI.0000000000001026)

Abstract

Purpose of review: The full understanding of the long-term effectiveness and safety of allergen immunotherapy (AIT) for allergic respiratory diseases cannot be achieved through randomized controlled trials (RCTs) alone. However, real-world studies designed as registries can complement RCTs.

Recent findings: The significance of registries is highlighted by their potential to reassess contraindications and collect data on adult and pediatric patients with multiple comorbidities who are often excluded from RCTs.

Summary: AIT is the sole disease-modifying therapeutic approach capable of inducing tolerance and offering a long-term response to allergens. AIT has been shown to play a role in arresting the 'allergic march' in young people, which reduces the risk of developing asthmatic clinical manifestations. Although RCTs are considered the gold standard for evaluating the efficacy and safety of AIT, their duration is usually too short (seldom lasting more than 1 year) to assess the long-term effects of AIT. Several long-term studies show that AIT's effect depends strongly on its use duration.

Copyright © 2024 Wolters Kluwer Health, Inc. All rights reserved.

- [71 references](#)

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

45

Pediatr Pulmonol

-
-
-

. 2024 Dec;59(12):3457-3466.

doi: 10.1002/ppul.27233. Epub 2024 Aug 30.

[A matched analysis of the use of high flow nasal cannula for pediatric severe acute asthma](#)

[Colin Rogerson](#)^{1,2}, [Samer AbuSultaneh](#)¹, [L Nelson Sanchez-Pinto](#)³, [Benjamin Gaston](#)¹, [Sarah Wiehe](#)^{1,4}, [Titus Schleyer](#)^{1,2}, [Wanzhu Tu](#)⁵, [Eneida Mendonca](#)^{1,6}

Affiliations Expand

- PMID: 39212235
- PMCID: [PMC11601001](#)
- DOI: [10.1002/ppul.27233](#)

Abstract

Rationale: The high-flow nasal cannula (HFNC) device is commonly used to treat pediatric severe acute asthma. However, there is little evidence regarding its effectiveness in real-world practice.

Objectives: We sought to compare the physiologic effects and clinical outcomes for children treated for severe acute asthma with HFNC versus matched controls.

Methods: This was a single-center retrospective matched cohort study at a quaternary care children's hospital. Children ages 2-18 hospitalized for severe acute asthma from 2015 to 2022 were included. Encounters receiving treatment with HFNC

within the first 24 h of hospitalization were included as cases. Controls were primarily treated with oxygen facemask. Logistic regression 1:1 propensity score matching was done using demographics, initial vital signs, and medications. The primary outcome was an improvement in clinical asthma symptoms in the first 24 h of hospitalization measured as percent change from initial.

Measurements and main results: Of 693 eligible cases, 443 were matched to eligible controls. Propensity scores were closely aligned between the cohorts, with the only significant difference in clinical characteristics being a higher percentage of patients of Black race in the control group (54.3% vs. 46.6%; $p = 0.02$). Compared to the matched controls, the HFNC cohort had smaller improvements in heart rate (-11.5% [-20.9; -0.9] vs. -14.7% [-22.6; -5.7]; $p < 0.01$), respiratory rate (-14.3% [-27.9; 5.4] vs. -16.7% [-31.5; 0.0]; $p = 0.03$), and pediatric asthma severity score (-14.3% [-28.6; 0.0] vs. -20.0% [-33.3; 0.0]; $p < 0.01$) after 24 h of hospitalization. The HFNC cohort also had longer pediatric intensive care unit (PICU) length of stay (LOS) (1.5 days [1.1; 2.1] vs. 1.2 days [0.9; 1.8]; $p < 0.01$) and hospital LOS (2.8 days [2.1; 3.8] vs. 2.5 days [1.9; 3.4]; $p < 0.01$). When subgrouping to younger patients (2-3 years old), or those with the highest severity scores (PASS > 9), those treated with HFNC had no difference in clinical symptom improvements but maintained a longer PICU LOS.

Conclusions: Encounters using HFNC for severe acute pediatric asthma had decreased clinical improvement in 24 h of hospitalization compared to matched controls and increased LOS. Specific subgroups of younger patients and those with the highest severity scores showed no differences in clinical symptom improvement suggesting differential effects in specific patient populations.

Keywords: asthma; clinical research; informatics; pediatrics.

© 2024 The Author(s). Pediatric Pulmonology published by Wiley Periodicals LLC.

Conflict of interest statement

The authors declare no conflicts of interest.

- [33 references](#)
- [3 figures](#)

Supplementary info

MeSH terms, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

Pediatr Pulmonol

-
-
-

. 2024 Dec;59(12):3410-3418.

doi: 10.1002/ppul.27219. Epub 2024 Aug 26.

[Supraventricular tachycardia diagnosis in asthma patients is associated with adverse health outcomes](#)

[Havell Markus](#)^{1,2,3}, [Gary D Ceneviva](#)⁴, [Neal J Thomas](#)^{4,5}, [Conrad Krawiec](#)⁴

Affiliations Expand

- PMID: 39185635
- PMCID: [PMC11601000](#)
- DOI: [10.1002/ppul.27219](#)

Abstract

Introduction: Supraventricular tachycardia (SVT) can occur during treatment of an acute asthma exacerbation. There are, however, no data on the long-term outcomes of children who are diagnosed with both asthma and SVT. This study aims to analyze the impact of SVT in asthmatic children on mortality and/or cardiac arrest, hypothesizing asthmatic subjects with SVT have increased mortality and/or cardiac arrest compared to asthmatic subject with no-SVT.

Methods: This was a retrospective cohort study, utilizing the TriNetX[©] electronic health record (EHR) database that included asthmatic subjects 2-18 years of age. The study population was divided into two groups (subjects with SVT diagnosis and no-SVT diagnosis). Data related to demographics, diagnostic, procedural, and medication codes were collected. The primary outcome was any death and/or cardiac arrest in a patient after the first asthma diagnosis date.

Results: This study included 91,066 asthmatic subjects (244 [0.27%] with SVT and 90,822 [99.73%] with no-SVT). Multivariable logistic regression analysis demonstrated that after controlling for demographic and clinical features, the odds of all-cause death and/or cardiac arrest after the first reported asthma exacerbation was significantly higher in asthmatic children with SVT compared to no-SVT (odds ratio [OR]: 4.30, confidence interval [CI]: 2.50-7.39, $p < .001$).

Conclusions: Our large nationwide EHR study suggests that asthmatic pediatric patients with documented SVT diagnosis at any point in their EHR may be at increased risk of adverse health outcomes compared to no-SVT. Further studies are

needed to determine the factors contributing to the increased risk of mortality and/or cardiac arrest in children with asthma and SVT.

Keywords: biostatistics; critical care; pulmonology (general).

© 2024 The Author(s). Pediatric Pulmonology published by Wiley Periodicals LLC.

Conflict of interest statement

Conrad Krawiec receives funding from the New England Journal of Medicine and Elsevier © Osmosis for educational materials and content. The remaining authors declare no conflict of interest.

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

Supplementary info

MeSH terms, Grants and funding [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

47

Ann Allergy Asthma Immunol

-
-
-

. 2024 Dec;133(6):667-674.e4.

doi: 10.1016/j.anai.2024.08.016. Epub 2024 Aug 22.

[Lower skeletal muscle density and airway structure on computed tomography in asthma](#)

[Yusuke Hayashi](#)¹, [Naoya Tanabe](#)², [Kaoruko Shimizu](#)³, [Tomoki Maetani](#)¹, [Yusuke Shiraishi](#)¹, [Tsuyoshi Oguma](#)⁴, [Hironobu Sunadome](#)⁵, [Ryo Sakamoto](#)⁶, [Atsuyasu Sato](#)¹, [Susumu Sato](#)⁵, [Hiroshi Date](#)⁷, [Hisako Matsumoto](#)⁸, [Toyohiro Hirai](#)¹

Affiliations [Expand](#)

- PMID: 39179101

- DOI: [10.1016/j.anai.2024.08.016](https://doi.org/10.1016/j.anai.2024.08.016)

Free article

Abstract

Background: Lower skeletal muscle density may reflect muscle adiposity and metabolic dysregulation that potentially impair disease control and lung function independent of high body mass index (BMI) in patients with asthma.

Objective: To investigate whether the lower density of pectoralis muscles (PMs) and erector spinae muscles (ESMs) on chest computed tomography was associated with airway structural changes in patients with asthma.

Methods: Consecutive patients with asthma and healthy controls undergoing chest computed tomography were retrospectively analyzed. The ESM and PM density, areas of subcutaneous adipose tissue near the PM and epicardial adipose tissue, wall area percent of the airways, and airway fractal dimension (AFD) were quantified on computed tomography.

Results: The study included 179 patients with asthma (52% women) and 88 controls (47% women). All the controls were 60 years old or younger. The PM and ESM density in female patients with asthma who were 60 years old or younger were significantly lower than those in controls after adjustment for BMI. In female patients with asthma at all ages, lower PM and ESM density (but not subcutaneous or epicardial adipose tissue area) was associated with greater wall area percent of the airways and lower AFD after adjusting for age, height, BMI, smoking status, blood eosinophil count, and oral corticosteroid use. The only association between ESM density and AFD was found in male patients with asthma.

Conclusion: Lower skeletal muscle density may be associated with airway wall thickening and less complexity of the airway luminal tree in female patients with asthma.

Copyright © 2024 The Authors. Published by Elsevier Inc. All rights reserved.

Supplementary info

MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

J Asthma

-
-
-

. 2024 Dec;61(12):1715-1726.

doi: 10.1080/02770903.2024.2380510. Epub 2024 Aug 22.

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

[Muzhda Ghanizada¹, Ajmal Jabarkhil¹, Susanne Hansen¹, Christian Woehlk¹, Nanna Dyhre-Petersen¹, Asger Sverrild¹, Celeste Porsbjerg¹, Therese Lapperre^{1,2,3}](#)

Affiliations Expand

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

Abstract

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

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

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

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

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

Plain language summary

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

Supplementary info

MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

49

Multicenter Study

Ann Am Thorac Soc

-
-
-

. 2024 Dec;21(12):1678-1687.

doi: 10.1513/AnnalsATS.202402-122OC.

[Chronic Airflow Limitation, Emphysema, and Impaired Diffusing Capacity in Relation to Smoking Habits in a Swedish Middle-aged Population](#)

[Anders Blomberg¹, Kjell Torén^{2,3}, Per Liv¹, Gabriel Granåsen¹, Anders Andersson^{4,5}, Annelie Behndig¹, Göran Bergström^{6,7}, John Brandberg^{8,9}, Kenneth Caidahl^{7,10,10}, Kerstin Cederlund¹¹, Arne Egesten¹², Magnus Ekström¹², Maria J Eriksson^{10,13}, Emil Hagström^{14,15,16}, Christer Janson^{17,15}, Tomas Jernberg¹⁸, David Kylhammar^{19,10,20}, Lars Lind^{7,16}, Anne Lindberg¹, Eva Lindberg^{17,15}, Claes-Göran Löfdahl¹², Andrei Malinowski^{15,16}, Maria Mannila²¹, Lars T Nilsson¹, Anna-Carin Olin², Anders Persson^{22,19,23,24}, Hans Lennart Persson^{19,25}, Annika Rosengren^{6,26}, Johan Sundström^{15,27}, Eva Swahn^{19,28}, Stefan Söderberg¹, Jenny Vikgren^{8,9}, Per Wollmer¹⁴, Carl Johan Östgren^{19,23}, Jan Engvall^{19,10,20,23}, C Magnus Sköld^{29,22}](#)

Affiliations Expand

- PMID: 39133529
- PMCID: [PMC11622819](#)
- DOI: [10.1513/AnnalsATS.202402-122OC](#)

Abstract

Rationale: Chronic obstructive pulmonary disease (COPD) includes respiratory symptoms and chronic airflow limitation (CAL). In some cases, emphysema and impaired diffusing capacity of the lung for carbon monoxide (Dl_{co}) are present, but characteristics and symptoms vary with smoking exposure. **Objective:** To study the prevalence of CAL, emphysema, and impaired Dl_{co} in relation to smoking and respiratory symptoms in a middle-aged population. **Methods:** We investigated 28,746 randomly invited individuals (52% women) aged 50-64 years across six Swedish sites. We performed spirometry, Dl_{co} testing, and high-resolution computed tomography and asked for smoking habits and respiratory symptoms. CAL was defined as post-bronchodilator forced expiratory volume in 1 second divided by forced vital capacity (FEV₁/FVC) < 0.7. **Results:** The overall prevalence was 8.8% for CAL, 5.7% for impaired Dl_{co} (Dl_{co} < LLN), and 8.8% for emphysema, with a higher prevalence in current smokers than in ex-smokers and never-smokers. The proportion of never-smokers among those with CAL, emphysema, and impaired Dl_{co} was 32%, 19%, and 31%, respectively. Regardless of smoking habits, the prevalence of respiratory symptoms was higher among people with CAL and impaired Dl_{co} than those with normal lung function. Asthma prevalence in never-smokers with CAL was 14%. In this group, asthma was associated with lower FEV₁ and more respiratory symptoms. **Conclusions:** In this large population-based study of middle-aged people, CAL and impaired Dl_{co} were associated with common respiratory symptoms. Self-reported asthma was not associated with CAL in never-smokers. Our findings suggest that CAL in never-smokers signifies a separate clinical phenotype that may be monitored and, possibly, treated differently from smoking-related COPD.

Keywords: chronic obstructive pulmonary disease; emphysema; impaired DICO; respiratory symptoms; smoking.

Comment in

- [Chronic Airflow Limitation in Never-Smokers: Time to Broaden Our Focus beyond Smoking in Chronic Obstructive Pulmonary Disease.](#)

Çolak Y. Ann Am Thorac Soc. 2024 Dec;21(12):1653-1654. doi: 10.1513/AnnalsATS.202410-1018ED. PMID: 39601501 Free PMC article. No abstract available.

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

Supplementary info

Publication types, MeSH terms, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

50

Pediatr Pulmonol

-
-
-

. 2024 Dec;59(12):3313-3321.

doi: 10.1002/ppul.27197. Epub 2024 Jul 29.

[Identification of severe acute pediatric asthma phenotypes using unsupervised machine learning](#)

[Colin Rogerson](#)^{1,2}, [L Nelson Sanchez-Pinto](#)³, [Benjamin Gaston](#)¹, [Sarah Wiehe](#)^{1,4}, [Titus Schleyer](#)^{1,2}, [Wanzhu Tu](#)⁵, [Eneida Mendonca](#)^{1,6}

Affiliations Expand

- PMID: 39073377
- PMCID: [PMC11601023](#)
- DOI: [10.1002/ppul.27197](#)

Abstract

Rationale: More targeted management of severe acute pediatric asthma could improve clinical outcomes.

Objectives: To identify distinct clinical phenotypes of severe acute pediatric asthma using variables obtained in the first 12 h of hospitalization.

Methods: We conducted a retrospective cohort study in a quaternary care children's hospital from 2014 to 2022. Encounters for children ages 2-18 years admitted to the hospital for asthma were included. We used consensus k means clustering with

patient demographics, vital signs, diagnostics, and laboratory data obtained in the first 12 h of hospitalization.

Measurements and main results: The study population included 683 encounters divided into derivation (80%) and validation (20%) sets, and two distinct clusters were identified. Compared to Cluster 1 in the derivation set, Cluster 2 encounters (177 [32%]) were older (11 years [8; 14] vs. 5 years [3; 8]; $p < .01$) and more commonly males (63% vs. 53%; $p = .03$) of Black race (51% vs. 40%; $p = .03$) with non-Hispanic ethnicity (96% vs. 84%; $p < .01$). Cluster 2 encounters had smaller improvements in vital signs at 12-h including percent change in heart rate (-1.7 [-11.7; 12.7] vs. -7.8 [-18.5; 1.7]; $p < .01$), and respiratory rate (0.0 [-20.0; 22.2] vs. -11.4 [-27.3; 9.0]; $p < .01$). Encounters in Cluster 2 had lower percentages of neutrophils (70.0 [55.0; 83.0] vs. 85.0 [77.0; 90.0]; $p < .01$) and higher percentages of lymphocytes (17.0 [8.0; 32.0] vs. 9.0 [5.3; 14.0]; $p < .01$). Cluster 2 encounters had higher rates of invasive mechanical ventilation (23% vs. 5%; $p < .01$), longer hospital length of stay (4.5 [2.6; 8.8] vs. 2.9 [2.0; 4.3]; $p < .01$), and a higher mortality rate (7.3% vs. 0.0%; $p < .01$). The predicted cluster assignments in the validation set shared the same ratio (~2:1), and many of the same characteristics.

Conclusions: We identified two clinical phenotypes of severe acute pediatric asthma which exhibited distinct clinical features and outcomes.

Keywords: asthma; informatics; machine learning; pediatrics.

© 2024 The Author(s). Pediatric Pulmonology published by Wiley Periodicals LLC.

Conflict of interest statement

The authors declare no conflicts of interest.

- [27 references](#)
- [2 figures](#)

Supplementary info

MeSH terms, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

51

Review

Ann Allergy Asthma Immunol

-
-
-

. 2024 Dec;133(6):630-640.

doi: 10.1016/j.anai.2024.07.023. Epub 2024 Jul 26.

[The effects of violence and related stress on asthma](#)

[Yueh-Ying Han](#)¹, [Juan C Celedón](#)²

Affiliations Expand

- PMID: 39069155
- DOI: [10.1016/j.anai.2024.07.023](#)

Abstract

In the United States, people living in deprived urban areas and persons in certain minoritized groups are often exposed to violence and affected with asthma, and epidemiologic studies have shown a link between exposure to violence (ETV) and asthma throughout the lifespan. Indeed, ETV at the individual, intrafamilial and community levels has been linked to asthma in children and adults. In this review, we discuss the evidence for a causal relation between ETV and asthma, emphasizing findings published in the last five years. Interpretation of the available evidence is limited by variable quality of the assessment of ETV or asthma, potential recall and selection bias, inability to estimate the relative contribution of various types of violence to the observed associations, lack of objective biomarkers of asthma or asthma endotypes, and inconsistent consideration of potential confounders or modifiers of the ETV-asthma link. Despite such limitations, the aggregate evidence from studies conducted in different locations and populations suggests that ETV affects asthma and asthma outcomes, and that this is explained by direct physiologic effects of violence-related distress and indirect effects (e.g., through risky health behaviors or co-morbidities). Thus, large prospective studies with careful assessment of specific types of ETV, key covariates and comorbidities (including mental illness), and asthma are needed to advance this field. Such research efforts should not preclude screening for maltreatment in children with asthma and ETV-related depression and anxiety in adolescents and adults with asthma. Further, vigorous policies are needed to curtail violence, as such policies could benefit patients with asthma while saving lives.

Copyright © 2024 American College of Allergy, Asthma & Immunology. Published by Elsevier Inc. All rights reserved.

Conflict of interest statement

Disclosures Dr Celedón received research materials from Merck (inhaled steroids) to provide medications free of cost to participants in a National Institutes of Health-funded study, unrelated to this work. Dr Han has no conflicts of interest to report.

Supplementary info

Publication types, MeSH terms, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

52

Pediatr Pulmonol

-
-
-

. 2024 Dec;59(12):3268-3277.

doi: 10.1002/ppul.27183. Epub 2024 Jul 23.

[Machine learning-enhanced HRCT analysis for diagnosis and severity assessment in pediatric asthma](#)

[Maria De Filippo](#)^{1,2}, [Salvatore Fasola](#)³, [Federica De Matteis](#)⁴, [Maria Sole Prevedoni Gorone](#)⁵, [Lorenzo Preda](#)^{4,5}, [Martina Votto](#)^{1,2}, [Velia Malizia](#)³, [Gian Luigi Marseglia](#)^{1,2}, [Stefania La Grutta](#)³, [Amelia Licari](#)^{1,2}

Affiliations Expand

- PMID: 39041906
- PMCID: [PMC11601025](#)
- DOI: [10.1002/ppul.27183](#)

Abstract

Objectives: Chest high-resolution computed tomography (HRCT) is conditionally recommended to rule out conditions that mimic or coexist with severe asthma in children. However, it may provide valuable insights into identifying structural airway

changes in pediatric patients. This study aims to develop a machine learning-based chest HRCT image analysis model to aid pediatric pulmonologists in identifying features of severe asthma.

Methods: This retrospective case-control study compared children with severe asthma (as defined by ERS/ATS guidelines) to age- and sex-matched controls without asthma, using chest HRCT scans for detailed imaging analysis. Statistical analysis included classification trees, random forests, and conventional ROC analysis to identify the most significant imaging features that mark severe asthma from controls.

Results: Chest HRCT scans differentiated children with severe asthma from controls. Compared to controls (n = 21, mean age 11.4 years), children with severe asthma (n = 20, mean age 10.4 years) showed significantly greater bronchial thickening (BT) scores (p < 0.001), airway wall thickness percentage (AWT%, p < 0.001), bronchiectasis grading (BG) and bronchiectasis severity (BS) scores (p = 0.016), mucus plugging, and centrilobular emphysema (p = 0.009). Using AWT% as the predictor in conventional ROC analysis, an AWT% \geq 38.6 emerged as the optimal classifier for discriminating severe asthmatics from controls, with 95% sensitivity, specificity, and overall accuracy.

Conclusion: Our study demonstrates the potential of machine learning-based analysis of chest HRCT scans to accurately identify features associated with severe asthma in children, enhancing diagnostic evaluation and contributing to the development of more targeted treatment approaches.

Keywords: Children; artificial intelligence; chest high-resolution computed tomography; machine learning; severe asthma.

© 2024 The Author(s). Pediatric Pulmonology published by Wiley Periodicals LLC.

Conflict of interest statement

The authors declare that they have no conflicts of interest, financial or otherwise, relevant to this work.

- [28 references](#)
- [3 figures](#)

Supplementary info

MeSH terms, Grants and funding [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

Review

Ann Allergy Asthma Immunol

-
-
-

. 2024 Dec;133(6):641-648.e12.

doi: 10.1016/j.anai.2024.07.016. Epub 2024 Jul 20.

[Community violence and asthma: A review](#)

[Lisa Frueh](#)¹, [Rachit Sharma](#)², [Perry E Sheffield](#)³, [Jane E Clougherty](#)²

Affiliations Expand

- PMID: 39038705
- DOI: [10.1016/j.anai.2024.07.016](https://doi.org/10.1016/j.anai.2024.07.016)

Free article

Abstract

Over the past 2 decades, epidemiologic studies have identified significant associations between exposure to violence, as a psychosocial stressor, and the incidence or exacerbation of asthma. Across diverse populations, study designs, and measures of community violence, researchers have consistently identified adverse associations. In this review, the published epidemiologic evidence is summarized with special attention to research published in the last 5 years and seminal papers. Hypothesized mechanisms for the direct effects of violence exposure and for how such exposure affects susceptibility to physical agents (eg, air pollution and extreme temperature) are discussed. These include stress-related pathways, behavioral mechanisms, and epigenetic mechanisms. Finally, clinical implications and recommendations are discussed.

Copyright © 2024 The Authors. Published by Elsevier Inc. All rights reserved.

Conflict of interest statement

Disclosures The authors report no conflict of interest.

Supplementary info

Publication types, MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

54

Review

Am J Med Sci

-
-
-

. 2024 Dec;368(6):674-678.

doi: 10.1016/j.amjms.2024.07.023. Epub 2024 Jul 17.

[COPD overlap conditions: Clinical and therapeutic implications](#)

[Abdullah Jarrah](#)¹, [Mohammed T Awad](#)², [Cassandra Cramer-Bour](#)³, [Ayman O Soubani](#)³

Affiliations Expand

- PMID: 39029738
- DOI: [10.1016/j.amjms.2024.07.023](#)

Abstract

Chronic Obstructive Pulmonary Disease (COPD) is a complex pulmonary condition characterized by chronic airflow limitation. Within the spectrum of COPD, distinct overlap conditions exist, including Asthma-COPD Overlap (ACO), COPD-Obstructive Sleep Apnea (COPD-OSA), Combined Pulmonary Fibrosis and Emphysema (CPFE), and Bronchiectasis-COPD Overlap (BCO). This review provides a comprehensive overview of the clinical and therapeutic implications of these conditions, highlighting the differences in complications compared with COPD alone in addition to the diagnostic challenges of identifying these conditions. Therapeutically tailored approaches are necessary for COPD overlap conditions considering the unique complications that may arise. Optimal pharmacological management, disease-specific interventions, and comprehensive patient-centered care are crucial components of treatment strategies. This review provides insights for healthcare professionals by enhancing their understanding and management of these conditions. This emphasizes the importance of accurate diagnosis and individualized treatment plans, considering the specific complications associated with each COPD overlap condition.

Keywords: Asthma; Asthma COPD overlap; COPD; Emphysema; OSA.

Copyright © 2024 Southern Society for Clinical Investigation. Published by Elsevier Inc. All rights reserved.

Conflict of interest statement

Declaration of competing interest No conflicts of interest or relationship with the industry to disclose by any of the authors. No funding or financial interests.

Supplementary info

Publication types, MeSH termsExpand

Full text links



➤ 270

1

J Asthma

-
-
-

. 2024 Dec;61(12):1715-1726.

doi: 10.1080/02770903.2024.2380510. Epub 2024 Aug 22.

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

[Muzhda Ghanizada¹, Ajmal Jabarkhil¹, Susanne Hansen¹, Christian Woehlk¹, Nanna Dyhre-Petersen¹, Asger Sverrild¹, Celeste Porsbjerg¹, Therese Lapperre^{1,2,3}](#)

Affiliations Expand

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

Abstract

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

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

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

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

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

Plain language summary

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

Supplementary info

MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

2

Multicenter Study

Ann Am Thorac Soc

•

-
-

. 2024 Dec;21(12):1678-1687.

doi: 10.1513/AnnalsATS.202402-122OC.

Chronic Airflow Limitation, Emphysema, and Impaired Diffusing Capacity in Relation to Smoking Habits in a Swedish Middle-aged Population

Anders Blomberg¹, Kjell Torén^{2,3}, Per Liv¹, Gabriel Granåsen¹, Anders Andersson^{4,5}, Annelie Behndig¹, Göran Bergström^{6,7}, John Brandberg^{8,9}, Kenneth Caidahl^{7,10,10}, Kerstin Cederlund¹¹, Arne Egesten¹², Magnus Ekström¹², Maria J Eriksson^{10,13}, Emil Hagström^{14,15,16}, Christer Janson^{17,15}, Tomas Jernberg¹⁸, David Kylhammar^{19,10,20}, Lars Lind^{7,16}, Anne Lindberg¹, Eva Lindberg^{17,15}, Claes-Göran Löfdahl¹², Andrei Malinowski^{15,16}, Maria Mannila²¹, Lars T Nilsson¹, Anna-Carin Olin², Anders Persson^{22,19,23,24}, Hans Lennart Persson^{19,25}, Annika Rosengren^{6,26}, Johan Sundström^{15,27}, Eva Swahn^{19,28}, Stefan Söderberg¹, Jenny Vikgren^{8,9}, Per Wollmer¹⁴, Carl Johan Östgren^{19,23}, Jan Engvall^{19,10,20,23}, C Magnus Sköld^{29,22}

Affiliations Expand

- PMID: 39133529
- PMCID: [PMC11622819](#)
- DOI: [10.1513/AnnalsATS.202402-122OC](#)

Abstract

Rationale: Chronic obstructive pulmonary disease (COPD) includes respiratory symptoms and chronic airflow limitation (CAL). In some cases, emphysema and impaired diffusing capacity of the lung for carbon monoxide (Dl_{co}) are present, but characteristics and symptoms vary with smoking exposure. **Objective:** To study the prevalence of CAL, emphysema, and impaired Dl_{co} in relation to smoking and respiratory symptoms in a middle-aged population. **Methods:** We investigated 28,746 randomly invited individuals (52% women) aged 50-64 years across six Swedish sites. We performed spirometry, Dl_{co} testing, and high-resolution computed tomography and asked for smoking habits and respiratory symptoms. CAL was defined as post-bronchodilator forced expiratory volume in 1 second divided by forced vital capacity (FEV₁/FVC) < 0.7. **Results:** The overall prevalence was 8.8% for CAL, 5.7% for impaired Dl_{co} (Dl_{co} < LLN), and 8.8% for emphysema, with a higher prevalence in current smokers than in ex-smokers and never-smokers. The proportion of never-smokers among those with CAL, emphysema, and impaired Dl_{co} was 32%, 19%, and 31%, respectively. Regardless of smoking habits, the prevalence of respiratory symptoms was higher among people with CAL and impaired Dl_{co} than those with normal lung function. Asthma prevalence in never-smokers with CAL was 14%. In this group, asthma was associated with lower FEV₁ and more respiratory symptoms. **Conclusions:** In this large population-based study of middle-aged people,

CAL and impaired DL_{CO} were associated with common respiratory symptoms. Self-reported asthma was not associated with CAL in never-smokers. Our findings suggest that CAL in never-smokers signifies a separate clinical phenotype that may be monitored and, possibly, treated differently from smoking-related COPD.

Keywords: chronic obstructive pulmonary disease; emphysema; impaired $DICO$; respiratory symptoms; smoking.

Comment in

- [Chronic Airflow Limitation in Never-Smokers: Time to Broaden Our Focus beyond Smoking in Chronic Obstructive Pulmonary Disease.](#)

Çolak Y. Ann Am Thorac Soc. 2024 Dec;21(12):1653-1654. doi: 10.1513/AnnalsATS.202410-1018ED. PMID: 39601501 Free PMC article. No abstract available.

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

Supplementary info

Publication types, MeSH terms, Grants and funding [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

3

Int Forum Allergy Rhinol

-
-
-

. 2024 Dec;14(12):1857-1868.

doi: 10.1002/alr.23426. Epub 2024 Aug 7.

[Nasal virus infection induces asthma exacerbation through B-cell-dependent recruitment of inflammatory monocytes](#)

[Kody A Waldstein](#)¹, [Arman Issimov](#)¹, [Maria Ganama](#)¹, [Valerie Jinge](#)^{1,2}, [Stephen Tilley](#)³, [Xiaoyang Hua](#)^{1,2}

Affiliations Expand

- PMID: 39110115
- PMCID: PMC11611691 (available on 2025-12-01)
- DOI: [10.1002/alr.23426](https://doi.org/10.1002/alr.23426)

Abstract

Background: Upper respiratory viral infections (URVIs) are responsible for 80% of asthma exacerbation episodes. However, the underlying mechanisms remain poorly understood.

Methods: In this study, we used a mouse model of URVI and examined the impact of URVI on asthma phenotypes and the underlying mechanisms.

Results: Previously, we have reported that nasal-restricted infection with respiratory syncytial virus (RSV) only produces mild sino-nasal inflammation and mucus production, without causing direct lung infection. However, such nasal-restricted infection dramatically enhanced T_H2 and T_H17 inflammatory responses in the lungs and increased airway hyperresponsiveness (AHR) in mice with house dust mite (HDM)-induced asthma. Additionally, nasal-restricted infection with RSV recruited Ly6C⁺ inflammatory monocytes (IMs) into the lungs of mice with and without HDM-induced asthma. The expression of monocyte chemokines, including CCL2 and CCL7, also increased. Interestingly, nasal virus infection-induced AHR was abolished in mice depleted of IMs and in CCR2^{-/-} mice, indicating that the recruited IMs play a key role in nasal virus infection-induced asthma exacerbations in mice. Lastly, we observed that recruitment of Ly6C⁺ IMs following URVI was abolished in mice lacking B cells and that nasal-restricted infection with RSV increased numbers of CCL2⁺CCL7⁺ B cells in the lungs of mice as compared to controls.

Conclusions: Taken together, our data have shown that URVI enhances the allergic inflammatory response and AHR through a B cell–monocyte regulatory axis.

Keywords: allergen; allergy; asthma; inflammation; viral rhinosinusitis.

© 2024 ARS-AAOA, LLC.

Conflict of interest statement

Conflict of Interest: None

- [49 references](#)

Supplementary info

MeSH terms, Substances, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

4

Review

J Allergy Clin Immunol Pract

-
-
-

. 2024 Dec;12(12):3180-3188.

doi: 10.1016/j.jaip.2024.07.018. Epub 2024 Jul 27.

[An Overview of Adherence-What It Is and Why It Is Important](#)

[Ellen R Conroy](#)¹, [Tina M Banzon](#)¹, [Tregony Simoneau](#)², [Wanda Phipatanakul](#)¹, [Job F M van Boven](#)³, [Désirée Larenas-Linnemann](#)⁴

Affiliations Expand

- PMID: 39074603
- DOI: [10.1016/j.jaip.2024.07.018](#)

Abstract

Asthma, allergic rhinitis, and food allergy are common allergic diseases, yet adherence to many management options remains poor, leading to worse health outcomes and financial implications for society and health systems. The underlying causes of nonadherence are numerous, ranging from patient-specific factors to broader socioeconomic and systems-based factors. In this review, we aim to discuss the definition of adherence, which can be divided into 3 components: initiation, implementation, and persistence, as well as to review various methods of measuring adherence. Subsequently, we will review the epidemiology of adherence to asthma and allergic rhinitis medications, allergen immunotherapy, and oral immunotherapy. Finally, we will discuss the multifaceted etiology of poor adherence and its subsequent impact on patients and society.

Keywords: Adherence; Allergic rhinitis; Asthma; Food allergy.

Copyright © 2024 American Academy of Allergy, Asthma & Immunology. Published by Elsevier Inc. All rights reserved.

Supplementary info

Publication types, MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

5

Pediatr Pulmonol

-
-
-

. 2024 Dec;59(12):3313-3321.

doi: 10.1002/ppul.27197. Epub 2024 Jul 29.

[Identification of severe acute pediatric asthma phenotypes using unsupervised machine learning](#)

[Colin Rogerson^{1,2}](#), [L Nelson Sanchez-Pinto³](#), [Benjamin Gaston¹](#), [Sarah Wiehe^{1,4}](#), [Titus Schleyer^{1,2}](#), [Wanzhu Tu⁵](#), [Eneida Mendonca^{1,6}](#)

Affiliations Expand

- PMID: 39073377
- PMCID: [PMC11601023](#)
- DOI: [10.1002/ppul.27197](#)

Abstract

Rationale: More targeted management of severe acute pediatric asthma could improve clinical outcomes.

Objectives: To identify distinct clinical phenotypes of severe acute pediatric asthma using variables obtained in the first 12 h of hospitalization.

Methods: We conducted a retrospective cohort study in a quaternary care children's hospital from 2014 to 2022. Encounters for children ages 2-18 years admitted to the

hospital for asthma were included. We used consensus k means clustering with patient demographics, vital signs, diagnostics, and laboratory data obtained in the first 12 h of hospitalization.

Measurements and main results: The study population included 683 encounters divided into derivation (80%) and validation (20%) sets, and two distinct clusters were identified. Compared to Cluster 1 in the derivation set, Cluster 2 encounters (177 [32%]) were older (11 years [8; 14] vs. 5 years [3; 8]; $p < .01$) and more commonly males (63% vs. 53%; $p = .03$) of Black race (51% vs. 40%; $p = .03$) with non-Hispanic ethnicity (96% vs. 84%; $p < .01$). Cluster 2 encounters had smaller improvements in vital signs at 12-h including percent change in heart rate (-1.7 [-11.7; 12.7] vs. -7.8 [-18.5; 1.7]; $p < .01$), and respiratory rate (0.0 [-20.0; 22.2] vs. -11.4 [-27.3; 9.0]; $p < .01$). Encounters in Cluster 2 had lower percentages of neutrophils (70.0 [55.0; 83.0] vs. 85.0 [77.0; 90.0]; $p < .01$) and higher percentages of lymphocytes (17.0 [8.0; 32.0] vs. 9.0 [5.3; 14.0]; $p < .01$). Cluster 2 encounters had higher rates of invasive mechanical ventilation (23% vs. 5%; $p < .01$), longer hospital length of stay (4.5 [2.6; 8.8] vs. 2.9 [2.0; 4.3]; $p < .01$), and a higher mortality rate (7.3% vs. 0.0%; $p < .01$). The predicted cluster assignments in the validation set shared the same ratio (~2:1), and many of the same characteristics.

Conclusions: We identified two clinical phenotypes of severe acute pediatric asthma which exhibited distinct clinical features and outcomes.

Keywords: asthma; informatics; machine learning; pediatrics.

© 2024 The Author(s). Pediatric Pulmonology published by Wiley Periodicals LLC.

Conflict of interest statement

The authors declare no conflicts of interest.

- [27 references](#)
- [2 figures](#)

Supplementary info

MeSH terms, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

6

Review

Ann Allergy Asthma Immunol

-
-
-

. 2024 Dec;133(6):630-640.

doi: 10.1016/j.anai.2024.07.023. Epub 2024 Jul 26.

[The effects of violence and related stress on asthma](#)

[Yueh-Ying Han](#)¹, [Juan C Celedón](#)²

Affiliations Expand

- PMID: 39069155
- DOI: [10.1016/j.anai.2024.07.023](#)

Abstract

In the United States, people living in deprived urban areas and persons in certain minoritized groups are often exposed to violence and affected with asthma, and epidemiologic studies have shown a link between exposure to violence (ETV) and asthma throughout the lifespan. Indeed, ETV at the individual, intrafamilial and community levels has been linked to asthma in children and adults. In this review, we discuss the evidence for a causal relation between ETV and asthma, emphasizing findings published in the last five years. Interpretation of the available evidence is limited by variable quality of the assessment of ETV or asthma, potential recall and selection bias, inability to estimate the relative contribution of various types of violence to the observed associations, lack of objective biomarkers of asthma or asthma endotypes, and inconsistent consideration of potential confounders or modifiers of the ETV-asthma link. Despite such limitations, the aggregate evidence from studies conducted in different locations and populations suggests that ETV affects asthma and asthma outcomes, and that this is explained by direct physiologic effects of violence-related distress and indirect effects (e.g., through risky health behaviors or co-morbidities). Thus, large prospective studies with careful assessment of specific types of ETV, key covariates and comorbidities (including mental illness), and asthma are needed to advance this field. Such research efforts should not preclude screening for maltreatment in children with asthma and ETV-related depression and anxiety in adolescents and adults with asthma. Further, vigorous policies are needed to curtail violence, as such policies could benefit patients with asthma while saving lives.

Copyright © 2024 American College of Allergy, Asthma & Immunology. Published by Elsevier Inc. All rights reserved.

Conflict of interest statement

Disclosures Dr Celedón received research materials from Merck (inhaled steroids) to provide medications free of cost to participants in a National Institutes of Health-funded study, unrelated to this work. Dr Han has no conflicts of interest to report.

Supplementary info

Publication types, MeSH terms, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

7

Ann Med

-
-
-

. 2024 Dec;56(1):2382377.

doi: 10.1080/07853890.2024.2382377. Epub 2024 Jul 25.

[Relationship between fraction of exhaled nitric oxide and peripheral eosinophilia in asthma](#)

[Jane S Afriyie-Mensah](#)¹, [Philemon Domoyeri](#)², [Charles Antwi-Boasiako](#)², [Robert Aryee](#)², [Gifty B Dankwah](#)², [Mabel Ntiamoah](#)³, [Bartholomew Dzudzor](#)⁴, [Yaw Kusi-Mensah](#)^{2,5}, [Charles F Hayfron-Benjamin](#)^{2,5}

Affiliations Expand

- PMID: 39051101
- PMCID: [PMC11275527](#)
- DOI: [10.1080/07853890.2024.2382377](#)

Abstract

Background: Achieving disease control is the goal of asthma management. Serum or sputum eosinophil counts have been known traditional means of assessing eosinophilic airway inflammation in asthma, which is vital in predicting response to

corticosteroid therapy which ultimately promotes control of the disease. Evidence suggests that fraction of exhaled nitric oxide (FeNO) may be a more useful non-invasive surrogate biomarker for the assessment of eosinophilic airway inflammation and could help with the timely adjustment of inhaled corticosteroid therapy in the uncontrolled asthma patient. The relationship between FeNO and other markers of airway inflammation has been variable in literature, with limited data in sub-Saharan Africa where FeNO testing is very sparse. We sought to define the relationship between FeNO levels, serum eosinophil counts, spirometry measures and symptom control among asthma patients.

Materials and methods: The study was conducted at the Asthma Clinic of a large tertiary hospital. This study included 82 patients with physician-diagnosed asthma being regularly managed at the clinic. All participants were taken through the asthma control test (ACT), had FeNO and spirometry measurements taken according to the American Thoracic Society (ATS) guidelines. Blood samples were obtained from all participants for serum eosinophil counts. Correlation coefficient was used to ascertain the relationship between FeNO levels and serum eosinophil counts, ACT scores, and spirometry measurements. Logistic regression was used to examine the association between high FeNO and abnormal FEV₁ percentage predicted (<80%) with adjustments for age, sex, and BMI.

Results: A total of 82 patients with asthma were included in the study, with higher prevalence of females (72%). Majority (40.2%) of the patients were found in the 60 and above age category. The median FeNO level and ACT score was 42.00 (26.00-52.50) parts per billion (ppb) and 20.0 (18-23) respectively. The median serum eosinophil counts was 0.25(0.90-0.38) × 10⁹/L. The median FeNO levels were significantly higher in patients with partly and very poorly controlled asthma than in the well-controlled group ($p < 0.001$). A total of 47(57%) of the patients were classified as having well controlled asthma and 35 (42%) uncontrolled. FeNO correlated with serum eosinophil counts ($r = 0.450, p < 0.001$), ACT ($r = -0.648, p < 0.001$), and FEV₁ percentage predicted ($r = -0.353, p = 0.001$). High FeNO (>50 ppb) was associated with an over fivefold increased risk of having an abnormal FEV₁ percentage predicted.

Conclusion: FeNO levels significantly correlated with the ACT scores, serum eosinophil counts and FEV₁% predicted among the asthma patients who were on inhaled corticosteroid therapy. High FeNO was significantly associated with abnormal FEV₁ percentage predicted. We suggest that the point of care assessment of FeNO is a reliable marker of eosinophilic inflammation in our cohort of patients and together with 'ACT scores' in our asthma clinics could increase asthma control rates.

Keywords: Asthma; asthma control test; eosinophil counts; fraction of exhaled nitric oxide; lung function.

Conflict of interest statement

The authors declare no competing interests.

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

Supplementary info

MeSH terms, Substances, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

8

Pediatr Pulmonol

-
-
-

. 2024 Dec;59(12):3268-3277.

doi: 10.1002/ppul.27183. Epub 2024 Jul 23.

[Machine learning-enhanced HRCT analysis for diagnosis and severity assessment in pediatric asthma](#)

[Maria De Filippo](#)^{1,2}, [Salvatore Fasola](#)³, [Federica De Matteis](#)⁴, [Maria Sole Prevedoni Gorone](#)⁵, [Lorenzo Preda](#)^{4,5}, [Martina Votto](#)^{1,2}, [Velia Malizia](#)³, [Gian Luigi Marseglia](#)^{1,2}, [Stefania La Grutta](#)³, [Amelia Licari](#)^{1,2}

Affiliations Expand

- PMID: 39041906
- PMCID: [PMC11601025](#)
- DOI: [10.1002/ppul.27183](#)

Abstract

Objectives: Chest high-resolution computed tomography (HRCT) is conditionally recommended to rule out conditions that mimic or coexist with severe asthma in children. However, it may provide valuable insights into identifying structural airway changes in pediatric patients. This study aims to develop a machine learning-based chest HRCT image analysis model to aid pediatric pulmonologists in identifying features of severe asthma.

Methods: This retrospective case-control study compared children with severe asthma (as defined by ERS/ATS guidelines) to age- and sex-matched controls without asthma, using chest HRCT scans for detailed imaging analysis. Statistical analysis included classification trees, random forests, and conventional ROC analysis to identify the most significant imaging features that mark severe asthma from controls.

Results: Chest HRCT scans differentiated children with severe asthma from controls. Compared to controls (n = 21, mean age 11.4 years), children with severe asthma (n = 20, mean age 10.4 years) showed significantly greater bronchial thickening (BT) scores (p < 0.001), airway wall thickness percentage (AWT%, p < 0.001), bronchiectasis grading (BG) and bronchiectasis severity (BS) scores (p = 0.016), mucus plugging, and centrilobular emphysema (p = 0.009). Using AWT% as the predictor in conventional ROC analysis, an AWT% \geq 38.6 emerged as the optimal classifier for discriminating severe asthmatics from controls, with 95% sensitivity, specificity, and overall accuracy.

Conclusion: Our study demonstrates the potential of machine learning-based analysis of chest HRCT scans to accurately identify features associated with severe asthma in children, enhancing diagnostic evaluation and contributing to the development of more targeted treatment approaches.

Keywords: Children; artificial intelligence; chest high-resolution computed tomography; machine learning; severe asthma.

© 2024 The Author(s). Pediatric Pulmonology published by Wiley Periodicals LLC.

Conflict of interest statement

The authors declare that they have no conflicts of interest, financial or otherwise, relevant to this work.

- [28 references](#)
- [3 figures](#)

Supplementary info

MeSH terms, Grants and funding [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

9

Review

Ann Allergy Asthma Immunol

-
-
-

. 2024 Dec;133(6):641-648.e12.

doi: 10.1016/j.anai.2024.07.016. Epub 2024 Jul 20.

[Community violence and asthma: A review](#)

[Lisa Frueh](#)¹, [Rachit Sharma](#)², [Perry E Sheffield](#)³, [Jane E Clougherty](#)²

Affiliations Expand

- PMID: 39038705
- DOI: [10.1016/j.anai.2024.07.016](#)

Free article

Abstract

Over the past 2 decades, epidemiologic studies have identified significant associations between exposure to violence, as a psychosocial stressor, and the incidence or exacerbation of asthma. Across diverse populations, study designs, and measures of community violence, researchers have consistently identified adverse associations. In this review, the published epidemiologic evidence is summarized with special attention to research published in the last 5 years and seminal papers. Hypothesized mechanisms for the direct effects of violence exposure and for how such exposure affects susceptibility to physical agents (eg, air pollution and extreme temperature) are discussed. These include stress-related pathways, behavioral mechanisms, and epigenetic mechanisms. Finally, clinical implications and recommendations are discussed.

Copyright © 2024 The Authors. Published by Elsevier Inc. All rights reserved.

Conflict of interest statement

Disclosures The authors report no conflict of interest.

Supplementary info

Publication types, MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

10

J Asthma

-
-
-

. 2024 Dec;61(12):1698-1705.

doi: 10.1080/02770903.2024.2379410. Epub 2024 Jul 31.

[Clinical efficacy and safety study of Loratadine combined with glucocorticoid nasal spray in the treatment of pediatric bronchial asthma with seasonal allergic rhinitis](#)

[Houjuan Yang¹, Haiyu Mao², Fei Wang³, Qing Guo³, Jiusheng Chu³, Xiaojun Zhao³, Dabang Lei⁴](#)

Affiliations Expand

- PMID: 39007891
- DOI: [10.1080/02770903.2024.2379410](https://doi.org/10.1080/02770903.2024.2379410)

Abstract

Objective: To investigate the clinical efficacy and safety of Loratadine combined with Glucocorticoid nasal spray in the treatment of pediatric bronchial asthma with seasonal allergic rhinitis.

Methods: A total of 100 pediatric patients with moderate to severe bronchial asthma and seasonal allergic rhinitis admitted to our hospital between January 2020 and January 2023 were included in this study. All patients met the complete inclusion and exclusion criteria. Based on different treatment interventions, they were divided into the control group ($n = 50$) and the observation group ($n = 50$). Patients in the control group received treatment with glucocorticoid nasal spray, while patients in the observation group received combined intervention with Loratadine in addition to the treatment received by the control group. The clinical treatment outcomes, incidence of adverse reactions, as well as the scores of nasal symptoms, asthma control, and peak expiratory flow rates at different treatment time points (baseline, T1: 30 days after treatment, T2: 60 days after treatment, T3: 90 days after treatment) were compared between the two groups. The combined treatment of Loratadine with Glucocorticoid nasal spray demonstrates significant clinical efficacy in the treatment of pediatric bronchial asthma with seasonal allergic rhinitis. It further promotes the recovery of peak expiratory flow rates, improves symptoms of rhinitis and asthma in pediatric patients. Importantly, the application of this combined treatment does not increase the risk of adverse reactions in pediatric patients, indicating its high safety

profile. This treatment approach is worthy of clinical application and further promotion.

Keywords: Loratadine; bronchial asthma; clinical efficacy; glucocorticoid; pediatric; safety; seasonal allergic rhinitis.

Supplementary info

MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

11

J Asthma

-
-
-

. 2024 Dec;61(12):1593-1600.

doi: 10.1080/02770903.2024.2376919. Epub 2024 Jul 23.

[SANI clinical remission definition: a useful tool in severe asthma management](#)

[Giorgio Walter Canonica](#)^{1,2}, [Diego Bagnasco](#)^{3,4}, [Benedetta Bondi](#)^{3,4}, [Gilda Varricchi](#)^{5,6,7,8}, [Giovanni Paoletti](#)^{1,2}, [Francesco Blasi](#)^{9,10}, [Pierluigi Paggiaro](#)¹¹, [Fulvio Braido](#)^{3,4}; [SANI study group](#)

Affiliations Expand

- PMID: 38984764
- DOI: [10.1080/02770903.2024.2376919](https://doi.org/10.1080/02770903.2024.2376919)

Abstract

In the field of severe asthma, the concept of disease control has recently been integrated by the one of clinical remission. With this new concept, we move on to analyze the efficacy of therapy on multiple parameters simultaneously, starting with the mandatory discontinuation of the systemic glucocorticoids, to which is added the effect on exacerbations, respiratory function, and symptoms control. The Italian

severe asthma registry SANI (Severe Asthma Network Italy) drafted criteria for the definition of disease remission, allowing patients to be classified into two groups, partial and complete remission. The greater dynamism of the definition, provided by SANI, allows us to hypothesize its practical use, concerning therapy management of severe asthma patients, starting from the level of remission, with the aim to facilitate the clinical decision on replacement, continuation or modulation of patients' therapy.

Keywords: AIT; SANI; Severe asthma; biologics; complete remission; partial remission; personalized therapy.

Supplementary info

MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

12

J Asthma

-
-
-

. 2024 Dec;61(12):1655-1662.

doi: 10.1080/02770903.2024.2375270. Epub 2024 Jul 9.

[Unhealthy habits and comorbidities associated with uncontrolled asthma in young people](#)

[Carlos Francisco Vázquez-Rodríguez¹](#), [Eliza Mireya Vázquez-Rodríguez²](#), [Francisco Vázquez-Nava³](#), [Nancy V Ortega-Betancourt¹](#), [Octelina Castillo-Ruiz⁴](#), [San Je Alemán-Castillo PhD⁴](#), [Josefina Altamira Garcia³](#)

Affiliations Expand

- PMID: 38957941
- DOI: [10.1080/02770903.2024.2375270](https://doi.org/10.1080/02770903.2024.2375270)

Abstract

Introduction: Asthma is a chronic inflammatory disease of the lower airways that affects more than 260 million people worldwide and has been related to more than 460,000 deaths a year. It is estimated that in 60% of asthma cases, the symptoms are not adequately controlled. The objective of this study was to determine the association between some comorbidities, habits, and health risk behaviors with uncontrolled asthma in a sample of young people with asthma.

Methods: Through a cross-sectional study, data from 1,078 young people aged 17 to 19 years were analyzed. Information was collected through physical examination, direct questioning, and the application of a self-administered questionnaire.

Results: In the group of young people with asthma, the prevalence of uncontrolled asthma was 20.6%, of which 53.8% were women, 76.9% suffered from rhinitis, 46.2% were overweight and 23.1% were obese. In the group of young with uncontrolled asthma, gingivitis was detected in 53.8% and alcohol consumption in 84.6%. Logistic regression analysis showed a significant association between allergic rhinitis, gingivitis, carbohydrate intake, alcohol consumption, overweight, and obesity with uncontrolled asthma.

Conclusions: Parents and members of the health team need to identify on time the risk factors associated with uncontrolled asthma in young people with asthma to limit its development and the negative effects it generates. The results of this study should be used to strengthen programs that promote the comprehensive health of adolescents.

Keywords: Uncontrolled asthma; comorbidities; oral health; to prevent risk factors.

Supplementary info

MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

13

Case Reports

J Asthma

-
-
-

. 2024 Dec;61(12):1790-1793.

doi: 10.1080/02770903.2024.2375287. Epub 2024 Jul 4.

[Successful Benralizumab treatment in acute near-fatal asthma with ECMO support: a case report](#)

[Francesca Montagnolo¹, Salvatore Grasso², Lidia Dalfino², Andrea Portacci¹, Francesca Romana Viterbo², Vitaliano Nicola Quaranta¹, Giovanna Elisiana Carpaqano¹](#)

Affiliations Expand

- PMID: 38949856
- DOI: [10.1080/02770903.2024.2375287](https://doi.org/10.1080/02770903.2024.2375287)

Abstract

Introduction: Near-fatal asthma (NFA) is a severe condition that can lead to respiratory arrest or high carbon dioxide levels, often requiring mechanical ventilation. Biologics have revolutionized the management of severe asthma, significantly improving symptom severity, reducing the number of exacerbations and hospitalizations, and decreasing the need for oral corticosteroids. However, their effectiveness in acute settings, particularly for ICU patients experiencing severe respiratory failure, is not well-studied. More research is needed to determine if biologics can improve recovery during severe asthma exacerbations.

Case study: We report a case of NFA in a patient with severe allergic eosinophilic asthma, who experienced global respiratory failure necessitating hospitalization, intubation, and veno-venous extracorporeal membrane oxygenation (VV-ECMO). Given the severity of the clinical condition, compassionate administration of Benralizumab, which targets the IL-5 receptor, was attempted.

Results: Five days from anti-IL5 receptor treatment start, the patient was extubated and the ECMO stopped. After the stepdown to the respiratory intensive care unit (RICU), the patient was weaned from oxygen therapy and subsequently discharged from hospital.

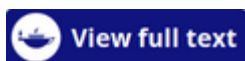
Conclusion: Benralizumab demonstrated rapid effectiveness in improving respiratory failure leading to successful weaning from VV-ECMO and subsequent extubation.

Keywords: Asthma; ECMO; IL-5; respiratory failure.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

14

J Asthma

-
-
-

. 2024 Dec;61(12):1638-1645.

doi: 10.1080/02770903.2024.2372600. Epub 2024 Jul 4.

[Can glucagon-like peptide-1 receptor agonists induce asthma? An analysis of the FAERS database](#)

[Mario Cazzola](#)¹, [Maria Gabriella Matera](#)², [Luigino Calzetta](#)³, [Davide Lauro](#)⁴, [Paola Rogliani](#)¹

Affiliations Expand

- PMID: 38913778
- DOI: [10.1080/02770903.2024.2372600](https://doi.org/10.1080/02770903.2024.2372600)

Abstract

Objective: Glucagon-like peptide-1 receptor agonists (GLP1RAs), originally developed for the treatment of type 2 diabetes mellitus, have attracted attention for their potential therapeutic benefits in asthma due to their anti-inflammatory properties and effects on airway smooth muscle function. However, concerns have been raised about the possibility of GLP1RAs inducing or exacerbating asthma symptoms.

Methods: We reviewed data from the US Food and Drug Administration's (FDA) adverse event (AE) reporting system (FAERS) to examine reports of cases of asthma observed in the real-world during treatment with GLP1RAs.

Results: Analysis of the FAERS reporting system database has shown that certain GLP1RAs, particularly exenatide, semaglutide and liraglutide, were associated with a higher proportion of respiratory AEs, particularly asthma or asthma-like events. This association was statistically significant at least for semaglutide and liraglutide. Serious asthma-related events and deaths were also reported, with exenatide having the highest proportion of deaths.

Conclusions: The reasons for the observed differences in the AE profiles of the GLP1RAs remain unclear and may involve various factors such as pharmacological properties, patient characteristics and reporting biases. The complex interplay

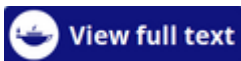
between the therapeutic benefits of GLP1RAs and the potential respiratory risks requires careful monitoring by clinicians, underpinned by ongoing research efforts to improve patient care and safety.

Keywords: Asthma; US Food and Drug Administration's adverse events reporting system; glucagon-like peptide-1 receptor agonists.

Supplementary info

MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

15

J Allergy Clin Immunol

-
-
-

. 2024 Dec;154(6):1422-1433.

doi: 10.1016/j.jaci.2024.06.008. Epub 2024 Jun 21.

[Comorbid functional dyspepsia reflects IL-33-mediated airway neuronal dysfunction in asthma](#)

[Keima Ito¹](#), [Yoshihiro Kanemitsu²](#), [Takashi Ueda³](#), [Takeshi Kamiya⁴](#), [Eiji Kubota⁵](#), [Yuta Mori¹](#), [Kensuke Fukumitsu¹](#), [Tomoko Tajiri¹](#), [Satoshi Fukuda¹](#), [Takehiro Uemura¹](#), [Hirotsugu Ohkubo¹](#), [Yutaka Ito¹](#), [Yasuhiro Shibata⁶](#), [Natsuko Kumamoto⁶](#), [Shinya Ugawa⁶](#), [Akio Niimi¹](#)

Affiliations Expand

- PMID: 38909633
- DOI: [10.1016/j.jaci.2024.06.008](#)

Abstract

Background: Neuronal dysfunction is implicated in the pathophysiology of asthma and functional dyspepsia (FD). However, the relationship between these diseases remains unclear.

Objective: This study aimed to clarify the clinical implications of comorbid FD in asthma and to explore the unified pathway between asthma and FD by focusing on airway neuronal dysfunction.

Methods: Clinical indices and biomarkers, including capsaicin cough sensitivity (C-CS), were compared between patients with asthma with and without FD. C-CS was determined on the basis of capsaicin concentration that induced at least 2 coughs (C2) or 5 coughs (C5). Additionally, the associations of airway inflammation with airway innervation and gastrointestinal motility were evaluated in mouse models of type 2 airway inflammation.

Results: Patients with asthma with FD had worse asthma control and cough severity and lower C2 and C5 thresholds than those without FD. The severity of FD symptoms was negatively correlated with C2 and C5 thresholds. FD and poor asthma control were predictors of heightened C-CS (defined as $C5 \leq 2.44 \mu\text{mol}$) in asthma. A mouse model of papain-induced airway inflammation developed airway hyperinnervation and gastrointestinal dysmotility, and both pathologies were ameliorated by an anti-IL-33 antibody. Moreover, papain-induced gastrointestinal dysmotility was mitigated by silencing the airway sensory neurons using QX-314, a sodium channel blocker. Furthermore, sputum IL-33 levels were significantly elevated in patients with asthma with FD or heightened C-CS compared to their counterparts.

Conclusion: FD is significantly associated with airway neuronal dysfunction in asthma. IL-33-mediated airway neuronal dysfunction may contribute to the interaction between asthma and FD.

Keywords: Asthma; capsaicin; functional dyspepsia; interleukin-33; neuronal dysfunction.

Copyright © 2024 American Academy of Allergy, Asthma & Immunology. Published by Elsevier Inc. All rights reserved.

Conflict of interest statement

Disclosure statement Supported in part by a research grant from MSD Life Science Foundation, Public Interest Incorporated Foundation (RA-020 to Y.K.), a research grant from the Japanese Respiratory Society Research Grants Program (to K.I.), and a Grant-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology (MEXT; 24K11373 to Y.K.). **Disclosure of potential conflict of interest:** K. Ito reports speaker honoraria from AstraZeneca. Y. Kanemitsu reports research grants from Novartis, MSD, and Sanofi; and honoraria for lectures, presentations, and educational events from GSK, AstraZeneca, Kyorin, Sanofi, Novartis, and Zeria. K. Fukumitsu reports research grants from Novartis, GSK, and Daiichi Sankyo. S. Fukuda reports speaker honoraria from AstraZeneca. T. Uemura reports honoraria for lectures and presentations from AstraZeneca, MSD, Novartis, and Chugai. H. Ohkubo reports research grants and honoraria for lectures from Boehringer Ingelheim. A. Niimi reports honoraria for lectures and presentations from AstraZeneca, Kyorin, Novartis, GSK, Sanofi; and personal fees for participating on

advisory boards from AstraZeneca, MSD, Kyorin, and Bayer. The rest of the authors declare that they have no relevant conflicts of interest.

Supplementary info

MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

16

Eur J Gen Pract

-
-
-

. 2024 Dec;30(1):2343364.

doi: 10.1080/13814788.2024.2343364. Epub 2024 May 13.

[Effectiveness of the Assessment of Burden of Chronic Conditions \(ABCC\)-tool in patients with asthma, COPD, type 2 diabetes mellitus, and heart failure: A pragmatic clustered quasi-experimental study in the Netherlands](#)

[Esther A Boudewijns¹, Danny Claessens¹, Onno C P van Schayck¹, Mascha Twellaar¹, Bjorn Winkens², Manuela A Joore³, Lotte C E M Keijsers¹, Stijn Krol¹, Mathijs Urlings¹, Annerika H M Gidding-Slok¹](#)

Affiliations Expand

- PMID: 38738695
- PMCID: [PMC11104697](#)
- DOI: [10.1080/13814788.2024.2343364](#)

Abstract

Background: The Assessment of Burden of Chronic Conditions (ABCC)-tool was developed to optimise chronic care.

Objectives: This study aimed to assess the effectiveness of the ABCC-tool in patients with COPD, asthma, type 2 diabetes, and/or heart failure in primary care in the Netherlands.

Methods: The study had a pragmatic, clustered, two-armed, quasi-experimental design. The intervention group (41 general practices; 176 patients) used the ABCC-tool during routine consultations and the control group (14 general practices; 61 patients) received usual care. The primary outcome was a change in perceived quality of care (PACIC; Patient Assessment of Chronic Illness Care) after 18 months. Secondary outcomes included change in the PACIC after 6 and 12 months, and in quality of life (EQ-5D-5L; EuroQol-5D-5L), capability well-being (ICECAP-A; ICEpop CAPability measure for Adults), and patients' activation (PAM; Patient Activation Measure) after 6, 12, and 18 months for the total group and conditions separately.

Results: We observed a significant difference in the PACIC after 6, 12, and 18 months (18 months: 0.388 points; 95%CI: 0.089-0.687; $p = 0.011$) for the total group and after 6 and 12 months for type 2 diabetes. After 18 months, we observed a significant difference in the PAM for the total group but not at 6 and 12 months, and not for type 2 diabetes. All significant effects were in favour of the intervention group. No significant differences were found for the EQ-5D-5L and the ICECAP-A.

Conclusion: Use of the ABCC-tool has a positive effect on perceived quality of care and patients' activation, which makes the tool ready for use in clinical practice. Healthcare providers (e.g. general practitioners and practice nurses) can use the tool to provide person-centred care. Trial registration number: ClinicalTrials.gov Registry ([NCT04127383](https://clinicaltrials.gov/ct2/show/study/NCT04127383)).

Keywords: Chronic conditions; general practice; person-centred care; self-management; shared decision making.

Plain language summary

The Assessment of Burden of Chronic Conditions (ABCC)-tool aims to support disease management for one or multiple chronic condition(s), currently COPD, asthma, type 2 diabetes, and heart failure. Statistically significant differences in patients' perceived quality of care and patient activation were found between the group that used the ABCC-tool and the care-as-usual group. No effect was found on generic quality of life or capability well-being. Healthcare providers can use the ABCC-tool in primary care.

Conflict of interest statement

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

- [Cited by 1 article](#)
- [24 references](#)
- [3 figures](#)

Supplementary info

Publication types, MeSH terms, Associated data, Grants and funding [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

17

Ann Med

-
-
-

. 2024 Dec;56(1):2317356.

doi: 10.1080/07853890.2024.2317356. Epub 2024 Feb 16.

[Clinical characteristics of complete responders versus non-complete responders to omalizumab, benralizumab and mepolizumab in patients with severe asthma: a long-term retrospective analysis](#)

[Maria Basagaña¹](#), [Carlos Martínez-Rivera²](#), [Clara Padró¹](#), [Ignasi Garcia-Olivé²](#), [Mimar Martínez-Colls³](#), [Juan Navarro³](#), [Laura Pardo⁴](#), [Paula Cruz⁴](#), [Gloria Cardona Peitx⁵](#), [Lidia Carabias⁵](#), [Albert Roger¹](#), [Jorge Abad²](#), [Antoni Rosell²](#)

Affiliations Expand

- PMID: 38364218
- PMCID: [PMC10878334](#)
- DOI: [10.1080/07853890.2024.2317356](#)

Abstract

Background: Some patients with severe asthma may benefit from treatment with biologics, but evidence has been mostly collected from randomized controlled trials (RCTs), in which patients' characteristics are different from those encountered in asthma patients in the real-world setting. The aim of this study was to describe the clinical features of complete responders versus non-complete responders to long-term treatment with biologics in patients with severe asthma attended in routine daily practice.

Methods: Data of a cohort of 90 patients with severe asthma who were treated with biologics (omalizumab, benralizumab, and mepolizumab) for at least 12 months and were followed up to March 2022. Data recorded included clinical characteristics and effectiveness of treatment (exacerbation, Asthma Control Test [ACT] score, lung function, use of maintenance oral corticosteroids [mOCS]), FeNO, and blood eosinophils at baseline, at 12 months, and at the end of follow-up. Complete response is considered if, in addition to not presenting exacerbations or the use of mOCS, the ACT score was >20 and, the FEV₁ >80% predicted.

Results: An improvement in all asthma control parameters was observed after 12 months of treatment and a mean follow-up of 55 months. After 12 months of treatment 27.2% of patients met the criteria of complete response and this percentage even increased to 35.3% at the end of follow-up. Long-term complete response was associated to better lung function with mepolizumab and omalizumab treatment and to less previous exacerbations in the benralizumab group. The main cause of not achieving a complete response was the persistence of an airflow obstructive pattern.

Conclusions: This study shows that omalizumab, benralizumab, and mepolizumab improved the clinical outcomes of patients with severe asthma in a clinic environment with similar effect sizes to RCTs in the long term follow-up. Airflow obstruction, however, was a predictor of a non-complete response to biologics.

Keywords: Severe asthma; benralizumab; biologics; mepolizumab; omalizumab; retrospective analysis.

Plain language summary

Treatment with anti-IgE and anti-IL-5 biologics significantly improved clinical outcomes in severe asthma patients. The rate of complete responders of 27.2% at 12 months even increased to 35.3% at the end of a mean follow-up of 55 months. The persistence of an airflow obstructive pattern was the main cause of the failure to achieve complete response.

Conflict of interest statement

No potential conflict of interest was reported by the author(s).

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

Supplementary info

MeSH terms, Substances, Grants and funding [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

18

Case Reports

J Med Case Rep

-
-
-

. 2024 Nov 30;18(1):588.

doi: 10.1186/s13256-024-04915-3.

[Tracheal stenosis misdiagnosed as asthma: a case report](#)

[Naveed Ur Rehman Siddiqui¹](#), [Ayaz Ur Rehman²](#), [Areeba Sultan²](#), [Awais Abbas²](#), [Moghira Iqbal Uddin Siddiqui³](#), [Qalab Abbas²](#)

Affiliations Expand

- PMID: 39616360
- PMCID: [PMC11607920](#)
- DOI: [10.1186/s13256-024-04915-3](#)

Abstract

Introduction: Tracheal stenosis is a known complication following intubation. However, owing to its delayed presentation and symptoms of progressive wheezing and respiratory difficulty, it is often misdiagnosed as asthma.

Case presentation: We present the case of a 10-year-old Asian boy who presented with cough, wheezing, and dyspnea. He was misdiagnosed with severe, uncontrolled asthma and respiratory failure, remaining unresponsive to initial asthma management. During his current admission, he had difficult intubation, necessitating an emergency tracheostomy. Further subsequent examination revealed grade III tracheal stenosis.

Conclusion: This case highlights the importance of considering tracheal stenosis as a differential diagnosis in children presenting with dyspnea, cough, and wheezing, particularly if there is a history of prior intubation. The airway should be secured immediately in a controlled environment by an otolaryngologist or anesthetist.

Keywords: Asthma; Subglottic stenosis; Tracheal stenosis; Tracheostomy.

© 2024. The Author(s).

Conflict of interest statement

Declarations. Ethics approval and consent to participate: Not applicable. Consent for publications: Written informed consent was obtained from the parent's legal guardian for publication of this case report. A copy of written consent is available for review by the Editor-in-chief of this journal. Competing interests: The authors declare that they have no competing interests.

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

Supplementary info

Publication types, MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

19

Lung

-
-
-

. 2024 Nov 30;203(1):8.

doi: 10.1007/s00408-024-00760-9.

[Increase in Blood Eosinophil Count Over Time and Sputum IL8 are Associated with FEV₁ Decline in Asthma](#)

[S Graff](#)¹, [C Moermans](#)², [S Gerday](#)², [M Henket](#)², [V Paulus](#)², [F Guissard](#)², [R Louis](#)², [F Schleich](#)²

Affiliations Expand

- PMID: 39614885
- PMCID: [PMC11608213](#)

- DOI: [10.1007/s00408-024-00760-9](https://doi.org/10.1007/s00408-024-00760-9)

Abstract

Background: Asthma is associated with accelerated rate of FEV₁ decline.

Objective: To determine predictive factors associated with accelerated FEV₁ decline in adult asthma and evaluate sputum cytokines as potential biomarkers for airflow decline.

Methods: We recruited 125 asthmatics evaluated at the asthma clinic of Liège and reevaluated them at least 5 years later. Clinical, functional and inflammatory characteristics were compared between patients with accelerated decline (FEV₁ decline > 0.85% pred.y⁻¹) and others. Predictive factors were highlighted with linear regression analysis. Sputum EGF, VEGF, FGF, IL5, IL8, TGF-β, and IgE levels were measured in 58 of these patients at both visits by Human XL cytokine Luminex Performance assay and Elisa.

Results: Post-BD FEV₁ decline was 0.06 ± 2.44% pred.y⁻¹ in the overall population. Median (IQR) time between visits was 66 (62 - 86) months. The multivariable analysis showed that an increase in blood eosinophils over time (Δ BEC) (Reg. Coef. (95%CI): 0.002 (0.001 to 0.004), p = 0.005) and onset of asthma (0.04 (0.003 to 0.07), p = 0.036) were independently associated with FEV₁ decline. IL8 levels measured at baseline were higher (499 (408-603) pg/ml, p = 0.0040) in patients with accelerated decline compared to others (143 (88-308) pg/ml).

Conclusion: In this study, we have confirmed that an increase in blood eosinophil counts over a follow-up of at least 5 years and later onset of asthma are associated with accelerated annual FEV₁ decline. Moreover, high sputum IL8 levels could be a risk factor for accelerated decline in asthma patients.

Keywords: Airway inflammation; Asthma; Decline; Eosinophils; Lung Diseases.

© 2024. The Author(s).

Conflict of interest statement

Declarations. Conflict of interests: Graff S, Moermans C, Gerday S, Henket M, Paulus P, and Guissard F have nothing to disclose. Prof. LOUIS reports grants and personal fees from GSK, grants and personal fees from AZ, grants and personal fees from Novartis, grants from Chiesi, outside the submitted work. Prof. Schleich reports grants and personal fees from GSK, grants from AZ, grants and personal fees from Chiesi, outside the submitted work. Ethical Approval: CHU Liège: 2008/181. Informed Consent: Informed consent was obtained from all individual participants included in the study. Consent for Publication: Not applicable.

- [46 references](#)
- [2 figures](#)

Supplementary info

MeSH terms, Substances, Grants and funding [Expand](#)

[Full text links](#)

[Proceed to details](#)

Cite

Share

20

Case Reports

Int Heart J

-
-
-

. 2024 Nov 30;65(6):1177-1181.

doi: 10.1536/ihj.24-384. Epub 2024 Nov 14.

[Successful Treatment of Acute Eosinophilic Myocarditis due to Eosinophilic Granulomatosis with Polyangiitis in an Older Man, Followed by Dual Single Photon Emission Computed Tomography](#)

[Tomohito Inage](#)¹, [Toshio Kataqiri](#)^{1,2}, [Masataka Kajiwara](#)¹, [Takashi Fujimura](#)^{1,2}, [Tadashi Yamamoto](#)^{1,2}, [Minh T Nguyen](#)², [Yukari Takase](#)³, [Yoshitaka Hirooka](#)^{4,2}

Affiliations Expand

- PMID: 39537159
- DOI: [10.1536/ihj.24-384](https://doi.org/10.1536/ihj.24-384)

Free article

Abstract

An 83-year-old man with a 5-month history of asthma presented to the emergency department with chest oppression and dyspnea. Electrocardiography showed ST-segment depression. Transthoracic echocardiography showed no asynergy with an ejection fraction of 62%. Coronary angiography revealed no stenosis. On day 3, he developed worsening dyspnea, cough, and rapidly progressive acute decompensated heart failure with abdominal purpura and lower extremity petechiae. Myocardial and skin biopsies revealed eosinophilic infiltration. He was diagnosed with acute eosinophilic myocarditis and heart failure due to eosinophilic granulomatosis with polyangiitis. Methylprednisolone pulse therapy dramatically

improved his symptoms and congestion. Dual single-photon emission computed tomography after 1 year demonstrated lesion improvement.

Keywords: Heart failure; Myocardial biopsy; Steroid therapy.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



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

1

Review

J Laryngol Otol

-
-
-

. 2024 Dec 4:1-10.

doi: 10.1017/S0022215124001178. Online ahead of print.

[The efficacy and safety of radiofrequency ablation for allergic rhinitis: a systematic review and meta-analysis](#)

[Xi Zhang](#)¹, [Min Yan](#)², [Qicheng Deng](#)³, [Ling Yang](#)⁴

Affiliations Expand

- PMID: 39628049
- DOI: [10.1017/S0022215124001178](https://doi.org/10.1017/S0022215124001178)

Abstract

Objective: This systematic review aims to synthesise findings from randomised, controlled trials and assess the efficacy and safety of radiofrequency ablation in treating allergic rhinitis.

Methods: A thorough search was conducted across PubMed, the Cochrane Library, Embase, Web of Science, China National Knowledge Infrastructure, WanFang, Chinese Scientific Journal, and Chinese Biomedical Literature databases from their inception until October 2023. The primary outcome measure was the total effective rate, with secondary outcomes including adverse events.

Results: This review included 15 randomised, controlled trials involving 1430 patients. The pooled analysis revealed a statistically significant effect on the total effective rate (odds ratio = 3.27, 95 per cent confidence interval = 2.37 to ~4.51). However, no statistical significance was observed in adverse events (odds ratio = 1.18, 95 per cent confidence interval = 0.67 to ~2.08).

Conclusions: Based on the analytical results, radiofrequency ablation emerges as an efficacious and safe treatment modality for allergic rhinitis. Given the constraints posed by a limited sample size, it is imperative that forthcoming clinical trials adhere rigorously to the gold standard of randomised, controlled trials for the purpose of corroborating these conclusions.

Keywords: allergic rhinitis; meta-analysis; radiofrequency ablation; systematic review.

Supplementary info

Publication typesExpand

[Proceed to details](#)

Cite

Share

2

Review

Laryngoscope

-
-
-

. 2024 Dec 3.

doi: 10.1002/lary.31936. Online ahead of print.

[Turbinate Injection of Botulinum Toxin in the Treatment of the Chronic Rhinitis](#)

[Do H Kim](#)¹, [David W Jang](#)², [Se H Hwang](#)³

Affiliations Expand

- PMID: 39625109
- DOI: [10.1002/lary.31936](https://doi.org/10.1002/lary.31936)

Abstract

Objectives: This systemic review with meta-analysis evaluated the effect of intranasal BTX-A turbinate injection on chronic rhinitis-related symptoms.

Data sources: PubMed, SCOPUS, Embase, Web of Science, and Cochrane databases.

Review methods: We reviewed studies retrieved from databases up to Aug 2024. The studies evaluating the degree of change of rhinitis-related symptom scores and quality of life before and after BTX-A injection were analyzed. Standard mean differences were used to calculate effect sizes.

Results: A total of 269 patients from 7 studies were analyzed. BTX-A injection showed a significant improvement in rhinitis-related symptoms (congestion: 2.5416, 95% CI 1.0927-3.9905, $I^2 = 94.4%$, itching: 1.2553, 95% CI 0.6660-1.8446; $I^2 = 70.8%$, rhinorrhea: 1.8451, 95% CI 1.0468-2.6435, $I^2 = 89.7%$, and sneezing: 1.3580, 95% CI 0.5194-2.1967; $I^2 = 90.7%$), total nasal symptom score (2.4020, 95% CI 1.4161-3.3879, $I^2 = 86.1%$), and quality of life (1.5256, 95% CI 1.0760-1.9752; $I^2 = 0.0%$) throughout the follow-up period (4 months). However, 3 months after injection, although symptom improvement remained, there was no statistical significance. Allergic rhinitis (AR) patients showed a significant improvement in rhinitis-related symptoms compared with nonallergic rhinitis (NAR) patients.

Conclusions: Nasal symptoms and quality of life scores related to rhinitis were decreased after BTX-A injection. In particular, this treatment showed better efficacy in AR and could be more beneficial for the symptoms of nasal congestion and rhinorrhea at the early periods of treatment. However, the effects lasted for a relatively short period of only 2-3 months. *Laryngoscope*, 2024.

Keywords: botulinum toxins; nose; quality of life; rhinitis; rhinitis allergic.

© 2024 The American Laryngological, Rhinological and Otological Society, Inc.

- [32 references](#)

Supplementary info

Publication types [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

3

World Allergy Organ J

-
-
-

. 2024 Nov 14;17(12):100986.

doi: 10.1016/j.waojou.2024.100986. eCollection 2024 Dec.

[Predicting allergen immunotherapy efficacy based on early maintenance phase response in routine clinical practice](#)

[Rundong Qin](#)¹, [Wanyi Fu](#)¹, [Renbin Huang](#)¹, [Mo Xian](#)¹, [Yubiao Guo](#)¹, [Li He](#)¹, [Xu Shi](#)¹, [Jing Li](#)¹

Affiliations Expand

- PMID: 39634515
- PMCID: [PMC11613417](#)
- DOI: [10.1016/j.waojou.2024.100986](#)

Abstract

Background: While allergen-specific immunotherapy (AIT) is acknowledged as an effective treatment, its efficacy varies, and consensus on predictive indicators for AIT responders remains elusive.

Objective: This study aimed to identify alternative parameters for predicting AIT responders based on clinical data collected in daily practice.

Method: We conducted a retrospective analysis of patients with house-dust-mite-driven asthma and/or rhinitis who completed 3 years of subcutaneous AIT (3y-AIT). We assessed the efficacy of AIT using the estimated daily symptom and medication score (edSMS) during different treatment periods, including up-dosing, maintenance I, II, and III phases. These scores were derived from detailed records of symptoms and medication use for AIT injections. A responder was defined as an individual with a reduction in edSMS of at least 30% from up-dosing to maintenance III phase ($\Delta\text{edSMS}_{\text{U-M3}}$).

Results: A cohort of 133 patients was analyzed, revealing a significant overall improvement in the disease condition after 3y-AIT. Responders demonstrated lower rates of polysensitization, daily tobacco smoke exposure, and milder pretreatment disease severity compared to non-responders ($p = 0.003$, $p = 0.001$, and $p = 0.019$, respectively). We observed 8 clinical response patterns among included subjects,

but only a small group of patients (16/133, 12.03%) demonstrated consistent improvement throughout the 3y-AIT. Serum total immunoglobulin E (tIgE), specific immunoglobulin E (sIgE), sIgE/tIgE ratios, and edSMS during the up-dosing phase failed to differentiate the clinical response patterns or correlate with 3y-AIT efficacy. Notably, the reduction in edSMS from up-dosing phase to maintenance I phase (Δ edSMS_{U-M1}) significantly associated with the 3y-AIT outcome ($r = 0.443$, $p < 0.001$). Receiver-operating characteristic curves indicated that Δ edSMS_{U-M1}, with a cut-off of 18.40%, effectively predicted responders (AUC: 0.75, sensitivity: 76.20%, specificity: 76.70%).

Conclusion: The individualized clinical responses to AIT may pose challenges in identifying predictors for treatment efficacy. Nonetheless, despite this complexity, our study highlights that the effectiveness observed in the early maintenance phase serves as a suitable predictor of 3y-AIT outcomes.

Keywords: Allergen immunotherapy; Asthma; House dust mite; Responders.

© 2024 Published by Elsevier Inc. on behalf of World Allergy Organization.

Conflict of interest statement

The authors declare that they have no relevant conflicts of interest.

- [31 references](#)
- [3 figures](#)

[Proceed to details](#)

Cite

Share

4

Review

Aust J Gen Pract

-
-
-

. 2024 Dec;53(12):928-931.

doi: 10.31128/AJGP-11-23-7032.

[Updates in the management of chronic rhinosinusitis](#)

[Howard Webb](#)¹, [Samuel Morcom](#)²

Affiliations [Expand](#)

- PMID: 39628017
- DOI: [10.31128/AJGP-11-23-7032](https://doi.org/10.31128/AJGP-11-23-7032)

Abstract

Background: Chronic rhinosinusitis (CRS) is a very common reason for presentation to a general practitioner. It can be very difficult to manage and can have a significant effect on the quality of life of patients.

Objective: The objective of this article is to provide an up-to-date review of the pathophysiology, diagnosis and multimodal approach to management of this chronic condition.

Discussion: Biologic agents are becoming increasingly common in Australia for the management of CRS with polyposis. This review includes an overview of these biologic agents and highlights their indications, efficacy and place in the management of CRS.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

[Proceed to details](#)

Cite

Share

5

Pediatrics

-
-
-

. 2024 Dec 1;154(Suppl 4):S19.

doi: 10.1542/peds.2024-069114G.

[Long-Term Efficacy of House Dust Mite Sublingual Immunotherapy on Clinical and Pulmonary Function in Patients With Asthma and Allergic Rhinitis](#)

[Fatema Mollah¹, Harvey L Leo¹](#)

Affiliations Expand

- PMID: 39620776

- DOI: [10.1542/peds.2024-069114G](https://doi.org/10.1542/peds.2024-069114G)

No abstract available

Full text links

[AAP Publications](#)

[Proceed to details](#)

Cite

Share

6

J Allergy Clin Immunol Pract

-
-
-

. 2024 Dec;12(12):3242-3249.e1.

doi: 10.1016/j.jaip.2024.09.037. Epub 2024 Nov 2.

[An International Delphi Consensus on the Management of Pollen-Food Allergy Syndrome: A Work Group Report of the AAAAI Adverse Reactions to Foods Committee](#)

[Taha Al-Shaikhly¹](#), [Amanda Cox²](#), [Anna Nowak-Wegrzyn³](#), [Antonella Cianferoni⁴](#), [Constance Katelaris⁵](#), [Didier G Ebo⁶](#), [George N Konstantinou⁷](#), [Hannelore Brucker⁸](#), [Hyeon-Jong Yang⁹](#), [Jennifer L P Protudjer¹⁰](#), [José Laerte Boechat¹¹](#), [Joyce E Yu¹²](#), [Julie Wang²](#), [Karen S Hsu Blatman¹³](#), [Lukasz Blazowski¹⁴](#), [Mahesh Padukudru Anand¹⁵](#), [Manish Ramesh¹⁶](#), [Maria J Torres¹⁷](#), [Mark Holbreich¹⁸](#), [Richard Goodman¹⁹](#), [Richard L Wasserman²⁰](#), [Russell Hopp²¹](#), [Sakura Sato²²](#), [Isabel Skypala²³](#)

Affiliations Expand

- PMID: 39488768
- DOI: [10.1016/j.jaip.2024.09.037](https://doi.org/10.1016/j.jaip.2024.09.037)

Abstract

Background: Pollen-food allergy syndrome (PFAS) is common among patients with allergic rhinitis. Treatment recommendations for patients with PFAS remain variable.

Objective: To develop consensus recommendation statements for managing patients with PFAS.

Methods: An international panel of allergists, researchers, and nutritionists with an interest in PFAS from 25 different institutions across 11 countries convened and a list of statements was written by 3 authors. The RAND/University of California Los Angeles methodology was adopted to establish consensus on the statements.

Results: After 2 Delphi rounds, a consensus was reached on 14 statements. The panel agreed that patients with PFAS would benefit from counseling on the nature and basis of PFAS and the rare chance of more severe systemic reactions and their recognition. The panel agreed on avoiding the raw food responsible for the index reaction, but not potentially cross-reactive fruits/vegetables based on the responsible food of the index reaction. Epinephrine autoinjectors should be recommended for patients with PFAS who experienced severe symptoms (beyond the oropharynx) or for patients considered at risk for severe reactions. The panel agreed that the benefit of allergen immunotherapy remains unclear and that PFAS should not be considered the primary indication for such intervention.

Conclusions: We developed consensus statements regarding counselling patients about the nature and severity of PFAS, potential risk factors, dietary avoidance, epinephrine autoinjector prescription, and allergen immunotherapy consideration for patients with PFAS.

Keywords: Delphi consensus; OAS; Oral allergy syndrome; PFAS; PFAS management; Pollen-food allergy syndrome.

Copyright © 2024 American Academy of Allergy, Asthma & Immunology. Published by Elsevier Inc. All rights reserved.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

7

Scand J Immunol

-
-
-

. 2024 Dec;100(6):e13416.

doi: 10.1111/sji.13416. Epub 2024 Oct 29.

[Immunomodulatory effect of mesenchymal stem cells-derived extracellular vesicles to modulate the regulatory T cells and Th1/Th2 imbalance in peripheral blood mononuclear cells of patients with allergic rhinitis](#)

[Zhao Wang¹](#), [Khawar Ali Shahzad^{1,2}](#), [Xuran Li^{1,2}](#), [Boyu Cai¹](#), [Maoxiang Xu^{1,2}](#), [Jiaojiao Li^{1,2}](#), [Fei Tan^{1,2,3,4}](#)

Affiliations Expand

- PMID: 39473031

- DOI: [10.1111/sji.13416](https://doi.org/10.1111/sji.13416)

Abstract

Mesenchymal stem cell-derived extracellular vesicles (MSC-EVs) have shown promising immunomodulatory capabilities for a variety of clinical conditions. However, the potential regulatory mechanisms of MSC-EVs in allergic rhinitis (AR) remain unexplored. The present study was designed to investigate the immunomodulatory effect of MSC-EVs in patients with AR. Peripheral blood mononuclear cells (PBMCs) were isolated from AR patients. The number of peripheral CD4⁺Foxp3⁺IL-17⁺, CD4⁺Foxp3⁺IL-17⁻ and CD4⁺Foxp3⁻IL-17⁺ T cells in healthy controls and AR patients were evaluated using flow cytometry. Therapeutic effect of MSC-EVs was determined by detecting IFN- γ , IL-4, IL-17 and IL-10 cytokines in supernatant by ELISA and flow cytometry. The mean fluorescence intensity (MFI) was calculated in PBMCs for IL-10, IL-17 and TGF- β on T cells after MSC-EVs treatment. Bioinformatic analysis of microRNA was performed by Gene Ontology (GO) and Kyoto Encyclopedia of Genes and Genomes (KEGG) analysis. CD4⁺Foxp3⁺IL-17⁺ T cells expression in PBMCs was higher in the AR group and the balance of Treg/Th17 was tilted towards Th17 cells. Supernatant from AR patients revealed that MSC-EVs treatment upregulated IL-10 and IFN- γ , and downregulated IL-4 and IL-17. EVs treatment effectively re-established Th1(CD4⁺IFN- γ ⁺cells)/Th2(CD4⁺IL-4⁺cells) balance, reduced CD4⁺IL-17⁺ and increased CD4⁺IL-10⁺ and CD4⁺TGF- β ⁺ cells. The MFI of IL-10 and TGF- β in CD4⁺CD25⁺CD127⁻ T cells were higher, whereas lower levels of IL-17 were observed. Bioinformatic analysis revealed that the TGF- β , Wnt signalling pathways and STAT5 transcription factor might mechanistically support the immunomodulatory effect of MSC-EVs. This study presents the immunomodulatory effect of MSC-EVs in PBMCs from AR patients. The results provide a new therapeutic strategy for AR.

Keywords: STAT5; Th17; Wnt signalling pathway; allergic rhinitis; extracellular vesicles; mesenchymal stem cell; regulatory T cells.

© 2024 The Scandinavian Foundation for Immunology.

- [62 references](#)

Supplementary info

MeSH terms, Substances, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

8

Randomized Controlled Trial

Adv Ther

-
-
-

. 2024 Dec;41(12):4601-4616.

doi: 10.1007/s12325-024-02998-4. Epub 2024 Oct 29.

[Dupilumab is Efficacious in Young Children with Atopic Dermatitis Regardless of Type 2 Comorbidities](#)

[Mark Boguniewicz](#)^{1,2}, [Lawrence D Sher](#)³, [Amy S Paller](#)⁴, [Peter D Arkwright](#)⁵, [Shigemi Yoshihara](#)⁶, [Zhen Chen](#)⁷, [Parul Shah](#)⁷, [Ainara Rodríguez Marco](#)⁸

Affiliations Expand

- PMID: 39470878
- PMCID: [PMC11550244](#)
- DOI: [10.1007/s12325-024-02998-4](#)

Abstract

Introduction: Patients with atopic dermatitis (AD) often have other comorbid type 2 inflammatory conditions. The aim of this study was to evaluate the impact of type 2 comorbidities on the response to and safety of dupilumab in young children with AD.

Methods: LIBERTY AD PRESCHOOL part B was a randomized, placebo-controlled trial in children aged 6 months to 5 years with moderate-to-severe AD. In this post hoc analysis, patients were stratified by the presence or absence of caregiver-reported selected type 2 comorbidities at baseline: asthma, allergic rhinitis (AR), and food allergies (FAs).

Results: At week 16, significantly more patients receiving dupilumab versus placebo, with or without asthma and AR, achieved an Investigator's Global Assessment (IGA) score of 0/1 and a $\geq 75\%$ improvement in Eczema Area and Severity Index (all $p < 0.05$). Significantly more patients receiving dupilumab versus placebo with FAs and numerically more patients without FAs achieved an IGA score of 0/1 ($p = 0.0007$ and $p = 0.06$). Numerically more patients receiving dupilumab versus placebo with asthma and significantly more patients without asthma achieved a ≥ 4 -point reduction in the weekly average of daily score on the Worst Scratch/Itch Numeric Rating Scale (WSI-NRS) ($p = 0.6$ and $p < 0.0001$). Additionally, significantly more patients receiving dupilumab versus placebo with or without AR ($p = 0.008$ and $p < 0.0001$) and with or without FAs ($p = 0.0002$ and $p = 0.004$) achieved a ≥ 4 -point reduction in the weekly average of daily score on the WSI-NRS. Overall safety was consistent with the known dupilumab safety profile.

Conclusions: Dupilumab treatment improves AD signs and symptoms in children aged 6 months to 5 years with and without type 2 comorbidities such as asthma, AR, and FAs.

Trial registration: ClinicalTrials.gov registration number [NCT03346434](https://clinicaltrials.gov/ct2/show/study/NCT03346434).

Infographic: Do type 2 comorbidities impact the response to dupilumab in children with atopic dermatitis? (MP4 103,451 KB).

Keywords: Atopic dermatitis; Comorbidities; Dupilumab; Pediatrics; Type 2 inflammation.

Plain language summary

Patients with atopic dermatitis (AD; also known as eczema) often have other inflammatory conditions as well, including asthma, allergic rhinitis, and food allergies. Like AD, they are all so-called type 2 conditions, caused by similar processes in the body. A drug called dupilumab has been shown to be effective in treating patients with moderate-to-severe AD. This study looked at the results of a clinical trial in which children aged 6 months to 5 years with moderate-to-severe AD had been treated with either dupilumab or placebo for 16 weeks. The trial results had already shown that at the end of the study, dupilumab compared with placebo resulted in better improvements in their disease and quality of life. In this study, we looked at patients who had only AD, and those who had AD plus one of the other type 2 conditions. We wanted to know if the conditions would impact the response to dupilumab in children with AD. Results showed that dupilumab was better than placebo at reducing the signs and the symptoms of AD in patients, whether or not they also had asthma, allergic rhinitis, or food allergies. Overall safety was consistent with the known dupilumab safety profile. In summary, dupilumab improves the signs and symptoms of moderate-to-severe AD in children aged 6 months to 5 years whether or not they also have another type 2 condition. These results suggest that dupilumab treatment may be effective in children with or without other type 2 conditions.

© 2024. The Author(s).

Conflict of interest statement

Mark Boguniewicz has been an investigator for Incyte, Regeneron Pharmaceuticals Inc., and Sanofi, and participated on advisory boards for AbbVie, Amgen, Dermavant, Eli Lilly, Incyte, LEO Pharma, Pfizer, Regeneron Pharmaceuticals Inc., and Sanofi. Lawrence D. Sher is an advisory board member for Aimmune Therapeutics, Optinose, Regeneron Pharmaceuticals Inc., and Sanofi; reports speaker fees from Regeneron Pharmaceuticals Inc. and Sanofi; and clinical trials funding from Aimmune Therapeutics, Amgen, AstraZeneca, Circassia, DBV Technologies, Galderma, GSK, Lupin, Merck, Mylan, Novartis, Novo Nordisk, Optinose, Pearl, Pfizer, Pulmagen, Roxane, Sanofi, Spirometrix, Teva, Vectura, and Watson Pharmaceuticals. Amy S. Paller is an investigator for AbbVie, Dermavant, Eli Lilly, Incyte, Janssen, Krystal Biotech, LEO Pharma and UCB; a consultant for Amryt Pharma, Azitra, BioCryst, BMS, Boehringer Ingelheim, Castle Creek Biosciences, Eli Lilly, Janssen, Krystal Biotech, LEO Pharma, Novartis, Regeneron Pharmaceuticals Inc., Sanofi, Seanergy, TWi Biotechnology, and UCB; and a member of the data and safety monitoring board for AbbVie, Abeona Therapeutics, Catawba Research, Galderma, and InMed Pharmaceuticals. Peter D. Arkwright has acted as an investigator for Regeneron Pharmaceuticals Inc., and has received grants from and acted as an advisor for Sanofi. Shigemi Yoshihara has acted as an investigator for Regeneron Pharmaceuticals Inc., and has received grants from and acted as an advisor for Sanofi. Zhen Chen and Parul Shah are employees and shareholders of Regeneron Pharmaceuticals Inc. Ainara Rodríguez Marco is an employee of and may hold stock and/or stock options in Sanofi.

- [38 references](#)
- [3 figures](#)

Supplementary info

Publication types, MeSH terms, Substances, Associated dataExpand

Full text links



[Proceed to details](#)

Cite

Share

9

Review

J Allergy Clin Immunol

-
-
-

. 2024 Dec;154(6):1343-1354.

doi: 10.1016/j.jaci.2024.10.007. Epub 2024 Oct 18.

[Upper airway comorbidities of asthma](#)

[Chang-Gyu Jung](#)¹, [Kathleen M Buchheit](#)², [Grazyna Bochenek](#)³, [Emily Dzoba](#)⁴, [Seong Ho Cho](#)⁵

Affiliations Expand

- PMID: 39426424
- DOI: [10.1016/j.jaci.2024.10.007](#)

Abstract

Asthma, characterized as a chronic heterogeneous airway disease, often presents with common comorbid conditions. The concept of "one airway, one disease" was coined more than 20 years ago, emphasizing the connection between asthma and upper airway comorbidities (UACs) such as allergic or nonallergic rhinitis, chronic rhinosinusitis with or without nasal polyps, and aspirin/nonsteroidal anti-inflammatory drug-exacerbated respiratory disease. Since then, numerous studies have demonstrated that UACs are closely related and affect asthma phenotypes. Recognizing these UACs and managing them are crucial aspects of comprehensive asthma care. Addressing these conditions as part of asthma treatment can lead to better control of symptoms, improved lung function, and better quality of life. Moreover, it is important to explore the field of respiratory biologics, which represents the latest advancements in medical treatment options for patients with asthma and UACs.

Keywords: AERD/N-ERD; CRSwNP; Comorbidity; asthma; biologics; chronic rhinosinusitis; rhinitis.

Published by Elsevier Inc.

Conflict of interest statement

Disclosure statement Supported by the Joy McCann Culverhouse endowment.
Disclosure of potential conflict of interest: The authors declare that they have no relevant conflicts of interest.

Supplementary info

Publication types, MeSH termsExpand

Full text links

[Proceed to details](#)

Cite

Share

10

Review

Adv Ther

-
-
-

. 2024 Dec;41(12):4384-4395.

doi: 10.1007/s12325-024-02984-w. Epub 2024 Oct 9.

[Reduced Sense of Smell in Patients with Severe Chronic Rhinosinusitis and its Implications for Diagnosis and Management: A Narrative Review](#)

[Zachary M Soler](#)¹, [Scott Nash](#)², [Andrew P Lane](#)³, [Zara M Patel](#)⁴, [Stella E Lee](#)⁵, [Wytske J Fokkens](#)⁶, [Mark Corbett](#)⁷, [Juby A Jacob-Nara](#)⁷, [Harry Sacks](#)²

Affiliations Expand

- PMID: 39382822
- PMCID: [PMC11550237](#)
- DOI: [10.1007/s12325-024-02984-w](#)

Abstract

Reduced sense of smell is a common symptom in patients with chronic rhinosinusitis (CRS). Although it is often under-diagnosed by healthcare providers, reduced sense of smell can have a substantial negative impact on patient's quality of life as measured by health-related quality of life (HRQoL) assessments and patient-reported outcomes. This narrative review describes current smell loss diagnosis and management guidelines in CRS, and the relationship between smell loss and CRS. Reduced sense of smell can be an indication of CRS disease severity in patients with (CRSwNP) and without nasal polyps (CRSsNP), and recovery of smell can be an indicator of successful CRS treatment. The current first-line

therapeutic options for smell loss are intranasal corticosteroids and nasal irrigation, and second-line therapeutic options include systemic steroids and surgery. Shared decision-making between patient, caregiver, and healthcare provider is important when choosing the most appropriate CRS treatment option. Emerging biologic therapies that target type 2 inflammation signaling pathways, such as dupilumab, omalizumab, and mepolizumab, have been shown to improve smell and taste in randomized controlled trials of patients with CRSwNP. A graphical abstract and video abstract are available with this article.

Keywords: Adults; Anosmia; Benralizumab; Chronic rhinosinusitis; Dupilumab; Mepolizumab; Omalizumab; Patient-reported outcomes.

Plain language summary

Chronic rhinosinusitis (CRS) is an inflammatory condition often associated with a loss of smell and taste. Patients with CRS and a loss of smell often rate their quality of life as poor and are more likely to also suffer from depression and anxiety than patients without smell loss. Patients with severe smell loss are also more likely to have increased severity of CRS disease by other measures. Standard treatments for smell loss include topical steroids, corticosteroids absorbed into the whole body system (systemic), and/or sinonasal surgery, but the effects may not last, and patients may experience side effects when they use repeated short bursts or long-term treatment with systemic corticosteroids. A newer treatment option for CRS is biologic therapy, which targets the immunologic pathways associated with inflammation. Biologic therapies have been shown to be effective in the treatment of CRS with nasal polyps including improvement in sense of smell. Here, we review the most common diagnostic tests and treatment options for CRS-associated smell loss and show how severity of smell loss is linked to severity of CRS. Supplementary file1 (MP4 60193 kb).

© 2024. The Author(s).

Conflict of interest statement

Zachary M. Soler: Lyra, Novartis, Olympus, and Optinose – advisory board and/or consultant; GlaxoSmithKline, Regeneron Pharmaceuticals Inc., and Sanofi – speakers' fees; Healthy Humming – Medical Director. Scott Nash, Harry Sacks: Regeneron Pharmaceuticals Inc. – employees, may hold stock and/or stock options in the company. Andrew P. Lane: Regeneron Pharmaceuticals Inc. and Sanofi – advisory board member. Zara M. Patel: Dianotic, InfiniteMD, Mediflix, Medtronic, and Optinose – advisory board and/or consultant; Olfera Therapeutics – Chief Medical Officer. Stella E. Lee: AstraZeneca, Genentech, GlaxoSmithKline, Lyra Therapeutics, Optinose, Regeneron Pharmaceuticals Inc. and Sanofi – clinical trial funding and advisory boards. Wytske J. Fokkens: BioInspire Technologies, GlaxoSmithKline, Meda Pharmaceuticals, and Sanofi – research grants. Mark Corbett, Juby A. Jacob-Nara: Sanofi – employees, may hold stock and/or stock options in the company.

- [49 references](#)
- [2 figures](#)

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

11

Review

Curr Allergy Asthma Rep

-
-
-

. 2024 Dec;24(12):657-665.

doi: 10.1007/s11882-024-01180-8. Epub 2024 Oct 7.

[When the Nose Meets the Lab: Histopathological Analysis in Chronic Rhinosinuitis with Nasal Polyps for Routine Clinical Practice](#)

[Isam Alobid¹](#), [Miquel Armengot-Carceller²](#), [Mayte Pinilla Urraca³](#), [Juan Maza-Solano^{4 5 6}](#), [Isabel González Guijarro⁷](#), [Sebastián Umbria Jiménez⁸](#), [Pilar San Miguel Fraile⁹](#), [Joaquim Mullol¹⁰](#)

Affiliations Expand

- PMID: 39373848
- PMCID: [PMC11485015](#)
- DOI: [10.1007/s11882-024-01180-8](#)

Abstract

Purpose of review: We aimed to review the latest evidence regarding the value of tissue histopathological analysis in chronic rhinosinuitis with nasal polyps (CRSwNP) and to facilitate tissue analysis by proposing a pragmatic checklist for clinical settings.

Recent findings: CRSwNP is a chronic inflammatory disease that severely impairs the patient's quality of life. The severity of the disease can be correlated with nasal polyps enriched in eosinophils/IL-5 and, although ≥ 10 eosinophils per high power field are considered enough to determine an eosinophilic CRS, this cut-off value, the biopsy method, and the sampling location are still a matter of debate. Besides, tissue eosinophil values might also have some added value when combined with other cellular counts (e.g., eosinophil-to-lymphocyte ratio, Charcot-Leyden crystals). Structured histopathology analysis of sinonasal tissue-including, for instance, tissue remodelling biomarkers, fibrosis, and eosinophilic aggregates-has proven to be a valuable tool for healthcare professionals to identify different phenotypes of CRSwNP and to improve the prioritisation of candidates to targeted therapies. Patients with CRSwNP are treated according to their severity with corticosteroids (intranasal and systemic), endoscopic sinus surgery, and/or biological therapy. A panel of expert ear, nose, and throat specialists and pathologists proposed a pragmatic checklist to improve the clinical practice around tissue analysis in CRSwNP, to facilitate communication between hospital-based healthcare professionals, and to standardize the evaluation of inflammatory biomarkers.

Keywords: Checklist; Eosinophils; Interleukin-5; Nasal Polyps; Professional Practice; Rhinosinusitis.

© 2024. The Author(s).

Conflict of interest statement

Isam Alobid is a member of the Editorial Board and Joaquim Mullol is a Section Editor of Current Allergy and Asthma Reports. They were not involved in assigning this manuscript to Associate Editors or peer reviewers and are separated and blinded from the editorial system from submission inception to decision.

Isam Alobid has received honoraria for consultancy and conferences from Viatrix, Roche, Sanofi, GSK, MSD, AstraZeneca, Storz, Olympus, Metronic, CINFA, Menarini, Salvat, and Novartis. Miguel Armengot-Carceller has received honoraria for consultancy and conferences from GSK. Mayte Pinilla Urraca has received honoraria for consultancy and conferences from Sanofi, GSK, AstraZeneca, and Italfarmaco. Juan Maza-Solano has received honoraria for consultancy and conferences from GSK, Sanofi, AstraZeneca, and Teva. Isabel González-Guijarro has received honoraria for consultancy and conferences from GSK and Schwabe Farma. Sebastián Umbria Jiménez has received honoraria for consultancy and conferences from GSK. Pilar San Miguel Fraile has received honoraria for consultancy and conferences from GSK and AstraZeneca. Joaquim Mullol has received research grants from AstraZeneca, Genentech, GSK, Viatrix, Novartis, Regeneron, Sanofi-Genzyme, and Noucor/Uriach Group, consulting fees from Noucor/Uriach Group and Sanofi-Genzyme, and attended speaker bureaus and/or advisory boards for AstraZeneca, Genentech, GSK, Glenmark, Lilly, Menarini, Mitsubishi-Tanabe Pharma, MSD, Noucor/Uriach Group, Novartis, Proctor & Gamble, Regeneron Pharmaceuticals Inc., Sanofi Genzyme, UCB Pharma, and Viatrix.

- [51 references](#)

Supplementary info

Publication types, MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

12

Ann Med

-
-
-

. 2024 Dec;56(1):2407523.

doi: 10.1080/07853890.2024.2407523. Epub 2024 Oct 7.

[Improvement in health-related quality of life questionnaires with biologic treatment in severe asthma and comorbid chronic rhinosinusitis with or without nasal polyposis: a real-life experience](#)

[Pierachille Santus](#)^{1,2}, [Marina Saad](#)², [Anna Casartelli](#)^{1,2}, [Rosaria Lorusso](#)³, [Lisa Milani](#)^{1,2}, [Fiammetta Danzo](#)^{1,2}, [Paolo Busatto](#)⁴, [Dejan Radovanovic](#)^{1,2}

Affiliations Expand

- PMID: 39373532
- PMCID: [PMC11459778](#)
- DOI: [10.1080/07853890.2024.2407523](#)

Abstract

Background: Patients with severe asthma frequently have comorbid chronic rhinosinusitis (CRS) with or without nasal polyps, that can increase the symptom burden and complicate treatment. Real-life clinical data on the impact of biologic treatments on CRS-specific quality-of-life questionnaires are still lacking.

Materials and methods: In this retrospective real-life study, we collected data from patients with severe asthma with comorbid CRS with/without nasal polyposis at baseline, and after 3, 6 and 12 months of treatment with omalizumab, mepolizumab,

benralizumab or dupilumab. In particular, we evaluated improvements in HRQoL as measured by SinoNasal Outcome Test-22 (SNOT-22, 0 - 110), Visual Analog Scale symptom scores (VAS, 0-10), and Asthma Control Test (ACT, 5-25) and the proportion of patients meeting the minimal clinically important difference (MCID).

Results: Disease-specific HRQoL, as measured by SNOT 22 and VAS score improved in all patients at 3, 6, and 12 months of treatment compared with baseline (SNOT-22: 14, IQR: 0-52 vs 10, IQR:0-30 vs 0, IQR:0-15 vs 0, IQR:0-12, $p < 0.001$, VAS score: 1, IQR: 0-5 vs 0, IQR:0-3 vs 0, IQR:0-2 vs 0, IQR 0-1, $p < 0.001$). After 3 months of treatment >80% of patients reached the MCID for ACT, while only patients on dupilumab showed to reach a MCID in 100% of cases. The effect size depended upon the symptom burden at baseline.

Conclusions: The study confirms the efficacy of omalizumab, mepolizumab, benralizumab, and dupilumab in a real-life setting, with a rapid improvement in CRS-specific HRQoL and general health status. These data highlight the importance of targeting type 2 inflammation in asthmatic patients with co-existing upper and lower airways disease. The Authors disclose that preliminary data and analysis of the present study have been presented in abstract form during the "X International Workshop on Lung Health - Respiratory Disease and Immune Response", held in Nice on 19-21 January 2023.

Keywords: Severe asthma; biological treatments; chronic rhinosinusitis; health-related quality of life; nasal polyposis; questionnaires.

Conflict of interest statement

No potential conflict of interest was reported by the author(s).

- [12 references](#)
- [3 figures](#)

Supplementary info

MeSH terms, Substances, Grants and funding [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

13

Rhinology

-
-

•
. 2024 Dec 1;62(6):739-749.

doi: 10.4193/Rhin24.248.

Blood transcriptomics reveal systemic eosinophilic and neutrophilic inflammation patterns in patients with nasal polyps

W Liu¹, K Wang¹, H Guan², L Ma³, Y Cui², C Liu¹, J Shi², Y Fan¹, Y Sun¹

Affiliations Expand

- PMID: 39365558
- DOI: [10.4193/Rhin24.248](https://doi.org/10.4193/Rhin24.248)

Abstract

Background: Chronic rhinosinusitis with nasal polyps (CRSwNP) is a chronic sinonasal disease characterized by heterogeneous inflammation. However, the presence of systemic inflammation heterogeneity in CRSwNP patients remains unknown. This study aims to profile transcriptomic alterations in the blood of CRSwNP patients and characterize the CRSwNP heterogeneity based on blood transcriptomic biomarkers.

Methodology: Patients with CRSwNP were prospectively recruited from three hospitals and chronologically divided into exploratory (n=123) and independent validation (n=46) cohorts. Transcriptomic profiles were generated by whole blood mRNA sequencing and subjected to patient clustering, differential expression, and pathway analysis. Differences in immune pattern and clinicopathologic features between clusters were assessed. A transcriptomic signature was defined and applied to an independent cohort to validate the findings.

Results: CRSwNP patients showed diverse blood transcriptomic profiles versus healthy controls, or when stratified by tissue and blood eosinophils and asthma comorbidity. Transcriptome-wide correlation analysis revealed a transcriptional signature associated with blood eosinophil levels, consisting of nine T2-related genes (CLC, SIGLEC8, ALOX15, IL5RA, PTGDR2, CCL23, CCR3, EPX and IL1RL1). Three distinct clusters with differing systemic eosinophilic and neutrophilic inflammation patterns and asthma comorbidity were identified based on transcriptomic profiling of T2 and T1/3-related blood biomarkers. A 36-gene signature was developed by machine learning and accurately predicted the three CRSwNP subtypes. Validation on an independent cohort confirmed the prediction robustness.

Conclusions: There is heterogeneous systemic inflammation associated with eosinophilic and neutrophilic patterns in patients with CRSwNP. Endotyping based on blood transcriptomic biomarkers might lead to more personalized treatment strategies for CRSwNP in the future.

Supplementary info

MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

14

Review

Curr Opin Allergy Clin Immunol

-
-
-

. 2024 Dec 1;24(6):520-528.

doi: 10.1097/ACI.0000000000001031. Epub 2024 Oct 4.

[Immunotherapy and new treatments](#)

[Yaroslav Andrew Jakymec](#)¹, [Justin Greiwe](#)², [Jonathan A Bernstein](#)^{2,3}

Affiliations Expand

- PMID: 39364892
- DOI: [10.1097/ACI.0000000000001031](https://doi.org/10.1097/ACI.0000000000001031)

Abstract

Purpose of review: This review comes at a time where new techniques in immunotherapy administration are being developed, new innovations are being incorporated to standard techniques, and new regulations are being adopted regarding the creation and storage of allergen extracts. Prior to the release of updated practice parameters regarding allergic rhinitis and immunotherapies, this review article provides a synopsis of current recommendations, a comparison of the practices in the United States and those of Europe, and an examination of experimental methods that are being studied.

Recent findings: This article seeks to review and discuss the various methods of administration, build up schedules, efficacy, effect on other atopic symptoms, and safety associated with allergen immunotherapy.

Summary: Innovations in standard techniques, such as new allergoids for SCIT, appear to be effective in improving symptoms and increasing IgG levels for grass allergens. Data for newer techniques is less clear. There appears to be increased treatment-related adverse events for ILIT, worse symptom scores compared with placebo for IDIT, and insufficient studies regarding the effectiveness of EPIT for aeroallergens. New regulations seek to standardize the documentation, storage, and creation of allergen extracts.

Copyright © 2024 Wolters Kluwer Health, Inc. All rights reserved.

- [72 references](#)

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

15

Observational Study

Ann Med

-
-
-

. 2024 Dec;56(1):2411018.

doi: 10.1080/07853890.2024.2411018. Epub 2024 Oct 4.

[Efficacy of dupilumab on chronic rhinosinusitis with nasal polyps and concomitant asthma in biologic-naive and biologic-pretreated patients](#)

[María Sandra Domínguez-Sosa¹, María Soledad Cabrera-Ramírez¹, Miriam Del Carmen Marrero-Ramos¹, Delia Dávila-Quintana², Carlos Cabrera-López³, Heleia González Cuervo⁴, Jesús Javier Benítez Del Rosario¹, Teresa Carrillo-Díaz⁵](#)

Affiliations Expand

- PMID: 39364704
- PMCID: [PMC11457478](#)
- DOI: [10.1080/07853890.2024.2411018](#)

Abstract

Objectives: Dupilumab, an anti-IL-4 receptor monoclonal antibody (mAb), was recently approved for the treatment of severe chronic rhinosinusitis with nasal polyps (CRSwNP). The main objective of this study was to assess whether previous exposure to biological treatment affected the clinical outcomes in CRSwNP and asthma patients, treated with dupilumab over time. A collateral secondary objective was to analyse the effects over time of dupilumab in patients with and without aeroallergen sensitization.

Methods: Single-centre retrospective observational study on severe CRSwNP patients treated with dupilumab. Nasal polyp score (NPS), visual analogue scale (VAS) symptom score, sinonasal outcome test (SNOT-22), aeroallergen sensitization, total serum IgE levels, and blood eosinophil counts were assessed at baseline and after 4, 6 and 12 months.

Results: 42 patients were included, 40 (95.2%) had asthma. Twenty-one (50%) patients received dupilumab without prior biological treatment (Group A: naive) and 50% switched to dupilumab from previous biological treatment (Group B: pre-treated). NPS, VAS symptoms, SNOT-22 improved significantly after 12 months treatment in both groups of patients ($p < 0.001$). After 12 months, VAS overall symptom score showed a significant reduction from 6 (IQR, 4.6-8.6) and 6 (IQR, 3.8-7.1) for Group A and Group B patients respectively, to 1.2 (IQR, 0.8-2.7) and 1.2 (IQR, 0.2-2.5); NPS from 6 (IQR, 4.0-7.0) and 5 (IQR, 3.5-6.0), respectively, to 1 (IQR, 0.0-2.0) and 0 (IQR, 0.0-3.0) and SNOT-22 from 64 (IQR, 56-78) and 71 (IQR, 47.5-76.0) respectively, to 5.5 (IQR, 4-21) and 6 (IQR, 4-15). IgE reduced from 57 to 22.1 and from 46.9 to 30.2 in Group A and Group B respectively ($p < 0.001$).

Conclusions: Dupilumab improves symptom severity, polyp size, and health-related quality of life, regardless of the presence or absence of comorbid aeroallergen sensitization and previous administration of biologic therapy.

Keywords: Chronic rhinosinusitis; dupilumab; monoclonal antibody; nasal polyps; perennial allergen sensitization.

Plain language summary

Dupilumab proved to be effective in patients with severe chronic rhinosinusitis with nasal polyps (CRSwNP). We observed that dupilumab for CRSwNP leads to a very rapid improvement in polyps, symptoms, and quality of life, regardless of previous biologic treatment status and presence or absence of allergic rhinitis. VAS, SNOT-22 and NPS may be established as outcome markers in everyday clinical practice during dupilumab treatment.

Conflict of interest statement

No potential conflict of interest was reported by the author(s).

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

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

16

Clinical Trial

Rhinology

-
-
-

. 2024 Dec 1;62(6):669-680.

doi: 10.4193/Rhin24.021.

[The impact of mepolizumab on sleep impairment in CRSwNP: post hoc analyses of SYNAPSE and MUSCA](#)

[J Mulloj¹](#), [W J Fokkens²](#), [S G Smith³](#), [T Keeley⁴](#), [L Zhang⁵](#), [P Howarth⁶](#), [R H Chan⁴](#), [C Bachert⁷](#)

Affiliations Expand

- PMID: 39323188
- DOI: [10.4193/Rhin24.021](#)

Abstract

Background: The impact of mepolizumab on impaired sleep, one of the most bothersome symptoms in patients with chronic rhinosinusitis with nasal polyps (CRSwNP), is unknown. This study aimed to determine the effect of mepolizumab and impact of comorbid upper and lower airway disease and blood eosinophil count (BEC) on sleep-/fatigue-related outcomes in CRSwNP.

Methods: This was an analysis of the Phase III SYNAPSE and MUSCA ([NCT03085797](#)/NCT02281318) trials of mepolizumab in patients with severe CRSwNP and severe asthma, respectively. Endpoints included change from baseline in 22-item Sino-Nasal Outcome Test (SNOT-22) sleep and fatigue domains (SYNAPSE: Weeks 24 and 52; MUSCA: Week 24) in the overall populations and post hoc subgroups (SYNAPSE: comorbid asthma, comorbid non-steroidal anti-inflammatory drug-exacerbated respiratory disease [N-ERD] and BEC; MUSCA: comorbid CRSwNP).

Results: In SYNAPSE, 289/407 patients with severe CRSwNP had comorbid asthma, 108 had N-ERD, and 278 had BEC ≥ 300 cells/ μ L. In MUSCA, 105/551 patients with severe asthma had comorbid CRSwNP. Baseline sleep and fatigue scores were worse in patients with comorbid airway disease and higher BEC. Improvements from baseline in sleep and fatigue scores were greater with mepolizumab versus placebo at Week 52 in SYNAPSE (difference in least squares mean change: -2.7 [sleep], -3.4 [fatigue], and Week 24 in SYNAPSE (-1.6 and -2.2) and MUSCA (-0.8 and -1.2), with consistent results across comorbidity and BEC subgroups.

Conclusion: Mepolizumab improves sleep and fatigue in severe CRSwNP, irrespective of comorbid airway disease and BEC, with consistent effects in severe asthma with and without comorbid CRSwNP.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

17

Comparative Study

Eur Arch Otorhinolaryngol

-
-

•
. 2024 Dec;281(12):6511-6521.

doi: 10.1007/s00405-024-08958-6. Epub 2024 Sep 16.

[Comparison between clinical and cytological findings in chronic rhinosinusitis with nasal polyps treated with Dupilumab](#)

[Andrea Ciofalo](#)¹, [Antonella Loperfido](#)², [Silvia Baroncelli](#)³, [Simonetta Masieri](#)⁴, [Gianluca Bellocchi](#)⁵, [Riccardo Caramia](#)¹, [Francesca Cascone](#)¹, [Luca Filaferro](#)¹, [Federica Lo Re](#)¹, [Carlo Cavaliere](#)¹

Affiliations Expand

- PMID: 39284942
- DOI: [10.1007/s00405-024-08958-6](https://doi.org/10.1007/s00405-024-08958-6)

Abstract

Purpose: Biologics represent a new therapeutic strategy for severe and recurrent chronic rhinosinusitis with nasal polyps (CRSwNP). Usually, their actual therapeutic effectiveness is assessed by reduction in nasal polyps and/or improvement in nasal symptoms and quality of life. However, these measures do not consider nasal immunophlogosis, which can be evaluated through nasal cytology. The purpose of this study was to assess not only the clinical impact but also the cellular changes in the nasal inflammatory infiltrate observed through nasal cytology of CRSwNP patients treated with Dupilumab for 24 months.

Methods: Fifty-five CRSwNP patients treated with Dupilumab were collected. Patients were evaluated before starting treatment and at one, three, six, nine months, one year, one and a half years, and two years after the first drug administration. During follow-up visits patients underwent endoscopic evaluation, nasal symptoms and quality of life assessment, complete blood count and nasal cytology.

Results: During follow-up, significant improvement was found in Nasal Polyps Score (NPS), nasal patency, olfaction, Sino-Nasal Outcome Test (SNOT-22) score, and Visual Analogue Scale (VAS). Regarding nasal cytology, a reduction in eosinophils and mast cells in the cellular infiltrate was observed over the two-year follow-up period compared to baseline.

Conclusion: Dupilumab has demonstrated broad efficacy in the management of CRSwNP from both clinical and cytological findings. Further studies are needed to confirm our findings and evaluate the biologics' impact on nasal mucosal inflammatory cells by nasal cytology with the aim of better identifying each patient's endotype and predicting the response to biologics.

Keywords: Biologics; Chronic rhinosinusitis with nasal polyps; Dupilumab; Eosinophils; Nasal cytology; Type 2 inflammation.

© 2024. The Author(s), under exclusive licence to Springer-Verlag GmbH Germany, part of Springer Nature.

Conflict of interest statement

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

- [45 references](#)

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

18

Review

Curr Opin Allergy Clin Immunol

-
-
-

. 2024 Dec 1;24(6):536-542.

doi: 10.1097/ACI.0000000000001027. Epub 2024 Sep 13.

[eHealth in pediatric respiratory allergy](#)

[Inês Pais-Cunha^{1 2 3}](#), [Cristina Jácome¹](#), [Rafael Vieira^{1 4}](#), [Bernardo Sousa Pinto¹](#), [João Almeida Fonseca^{1 5}](#)

Affiliations Expand

- PMID: 39270048
- DOI: [10.1097/ACI.0000000000001027](#)

Abstract

Purpose of review: This review explores the relevance of eHealth technologies to address unmet needs in pediatric respiratory allergies, particularly allergic rhinitis (AR) and asthma. Given the increasing burden of these conditions, there is a pressing need for effective solutions to enhance disease surveillance, diagnosis, and management.

Recent findings: Recent literature highlights the potential of eHealth tools to transform pediatric respiratory allergy care. The use of digital data for infodemiology, application of machine learning models to improve diagnostic sensitivity, smartphone apps with digital patient reported outcome measure (PROMs) and embedded sensors to monitor disease, healthcare professional dashboards with real-time data monitoring and clinical decision support systems (CDSS) are advances emerging to optimize pediatric respiratory allergy care.

Summary: Integrating eHealth technologies into the pediatric respiratory allergy care pathway is a potential solution for current healthcare challenges to better meet the needs of children with AR and asthma. However, while the potential of eHealth is evident, its widespread implementation in real-world practice requires continued research, collaboration, and efforts to overcome existing barriers.

Copyright © 2024 Wolters Kluwer Health, Inc. All rights reserved.

- [71 references](#)

Supplementary info

Publication types, MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

19

Meta-Analysis

J Allergy Clin Immunol Pract

-
-
-

. 2024 Dec;12(12):3404-3418.

doi: 10.1016/j.jaip.2024.09.001. Epub 2024 Sep 7.

[Intranasal Versus Oral Treatments for Allergic Rhinitis: A Systematic Review With Meta-Analysis](#)

[Maria Inês Torres](#)¹, [Sara Gil-Mata](#)¹, [Antonio Bognanni](#)², [Renato Ferreira-da-Silva](#)¹, [Juan José Yepes-Nuñez](#)³, [Nuno Lourenço-Silva](#)¹, [António Cardoso-Fernandes](#)¹, [André Ferreira](#)⁴, [Henrique Ferreira-Cardoso](#)¹, [Diana Portela](#)¹, [João Teles](#)¹, [Violeta Kvedariene](#)⁵, [María Jose Torres](#)⁶, [Ludger Klimek](#)⁷, [Oliver Pfaar](#)⁸, [Luisa Brussino](#)⁹, [Torsten Zuberbier](#)¹⁰, [João A Fonseca](#)¹, [Holger Schünemann](#)¹¹, [Jean Bousquet](#)¹², [Bernardo Sousa-Pinto](#)¹, [Rafael José Vieira](#)¹; [Allergic Rhinitis and its Impact on Asthma 2024 Guideline Panel](#)

Collaborators, Affiliations Expand

- PMID: 39251016
- DOI: [10.1016/j.jaip.2024.09.001](https://doi.org/10.1016/j.jaip.2024.09.001)

Free article

Abstract

Background: Treatments for allergic rhinitis include intranasal or oral medications.

Objective: To perform a systematic review with meta-analysis comparing the effectiveness of intranasal corticosteroids or antihistamines versus oral antihistamines or leukotriene receptor antagonists in improving allergic rhinitis symptoms and quality of life.

Methods: We searched four bibliographic databases and three clinical trial datasets for randomized controlled trials (1) assessing patients aged 12 years and older with seasonal or perennial allergic rhinitis, and (2) comparing intranasal corticosteroids or antihistamines versus oral antihistamines or leukotriene receptor antagonists. We performed a meta-analysis of the Total Nasal Symptom Score (TNSS), Total Ocular Symptom Score, Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ), development of adverse events, and withdrawals owing to adverse events. Certainty of evidence was assessed using Grading of Recommendations, Assessment, Development, and Evaluation.

Results: We included 35 studies, most of which assessed patients with seasonal allergic rhinitis and displayed an unclear risk of bias. Superiority of intranasal treatments was found for all assessed outcomes. Intranasal corticosteroids were more effective than oral antihistamines at improving the TNSS (mean difference [MD], -0.86; 95% CI, -1.21 to -0.51; $I^2 = 70\%$), Total Ocular Symptom Score (MD, -0.36; 95% CI, -0.56 to -0.17; $I^2 = 0\%$), and RQLQ (MD, -0.88; 95% CI, -1.15 to -0.61; $I^2 = 0\%$), which were mostly associated with clinically meaningful improvements. Superiority of intranasal corticosteroids at improving the TNSS was also found against oral leukotriene receptor antagonists (MD, -1.05; 95% CI, -1.33 to -0.77). Intranasal antihistamines were more effective than oral antihistamines at improving the TNSS (MD, -0.47; 95% CI, -0.81 to -0.14; $I^2 = 0\%$) and RQLQ (MD, -0.31; 95% CI, -0.56 to -0.06; $I^2 = 0\%$).

Conclusions: Randomized controlled trials suggest that intranasal treatments are more effective than oral treatments at improving symptoms and quality of life in seasonal allergic rhinitis.

Keywords: Allergic rhinitis; GRADE approach; Intranasal antihistamines; Intranasal corticosteroids; Leukotriene receptor antagonists; Meta-analysis; Oral antihistamines.

Copyright © 2024 The Authors. Published by Elsevier Inc. All rights reserved.

- [Cited by 1 article](#)

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

20

Clinical Trial

J Allergy Clin Immunol

-
-
-

. 2024 Dec;154(6):1442-1449.

doi: 10.1016/j.jaci.2024.07.026. Epub 2024 Aug 14.

[Dupilumab response onset, maintenance, and durability in patients with severe CRSwNP](#)

[Claus Bachert](#)¹, [Asif H Khan](#)², [Wytske J Fokkens](#)³, [Claire Hopkins](#)⁴, [Philippe Gevaert](#)⁵, [Joseph K Han](#)⁶, [Peter W Hellings](#)⁷, [Stella E Lee](#)⁸, [Jérôme Msihid](#)⁹, [Scott Nash](#)¹⁰, [Harry Sacks](#)¹⁰, [Juby A Jacob-Nara](#)², [Yamo Deniz](#)¹⁰, [Paul J Rowe](#)²

Affiliations Expand

- PMID: 39151476

- DOI: [10.1016/j.jaci.2024.07.026](https://doi.org/10.1016/j.jaci.2024.07.026)

Free article

Abstract

Background: Responder analyses of SINUS phase 3 study data have shown clinically meaningful improvements across multiple outcomes of treatment of chronic rhinosinusitis with nasal polyps (CRSwNP) with dupilumab.

Objective: Our aim was to gain a better understanding of dynamics of the response to dupilumab over 52 weeks.

Methods: We used data from the SINUS-52 (ClinicalTrials.gov identifier [NCT02898454](https://clinicaltrials.gov/ct2/show/study/NCT02898454)) intention-to-treat population to perform a post hoc analysis of patients with severe CRSwNP who had received dupilumab, 300 mg once every 2 weeks, or placebo. Response, which was defined as an improvement from baseline of at least 1 point in Nasal Polyp Score (NPS), nasal congestion (NC) score, and loss of smell (LoS) score, as well as an improvement of at least 8.9 points on the 22-Item Sino-Nasal Outcome Test (SNOT-22), was assessed for rapidity, maintenance, and durability.

Results: The study included 303 patients (150 of whom received dupilumab and 153 of whom received placebo). For each outcome measure, a greater proportion of patients achieved a first response by week 16 (rapidity) with dupilumab versus with placebo; NPS, 75.3% versus 39.2%; NC score, 60.0% versus 24.2%; LoS score, 60.7% versus 15.7%; and SNOT-22 score, 83.3% versus 66.0%, respectively. Of those patients given dupilumab who had a response by week 16, more than 80% maintained their response at week 52 (maintenance). Over 52 weeks, greater proportions of those patients given dupilumab than patients given placebo were responders on at least 80% of time points: NPS, 46.7% versus 2.6%; NC score, 46.7% versus 9.2%; LoS score, 47.3% versus 3.9%; and SNOT-22 score, 62.0% versus 21.6%, respectively (durability).

Conclusion: Most patients with CRSwNP achieve clinically meaningful responses to dupilumab by week 16, and most such patients in our study had maintenance and durability of response with continued treatment over time.

Keywords: Biologic therapy; SINUS-52; chronic rhinosinusitis with nasal polyps; dupilumab; responder analysis.

Copyright © 2024 The Authors. Published by Elsevier Inc. All rights reserved.

Conflict of interest statement

Disclosure statement Supported by Sanofi, France, and Regeneron Pharmaceuticals, Inc, United States. **Disclosure of potential conflict of interest:** C. Bachert is an advisory board member of AstraZeneca, Novartis, and Sanofi. W. J. Fokkens reports research grants from BiInspire Technologies, GlaxoSmithKline, Mylan, Novartis, and Sanofi. C. Hopkins is an advisory board member of AstraZeneca, BiInspire Technologies, GlaxoSmithKline, and Sanofi. P. Gevaert reports clinical trial funding from and is an advisory board member of 3NT, Argenx, Genentech, Novartis, Regeneron Pharmaceuticals, Roche, Sanofi, and Stallergenes Greer. J. K. Han is an advisory board member of AstraZeneca, Genentech,

GlaxoSmithKline, Novartis, Regeneron Pharmaceuticals, and Sanofi. P. W. Hellings is an advisory board member of Regeneron Pharmaceuticals and Sanofi. S. E. Lee reports receiving clinical trial funding from and being an advisory board member of AstraZeneca, Genentech, GlaxoSmithKline, and Sanofi and being an advisory board member of Novartis and Regeneron Pharmaceuticals. A. H. Khan, J. Msihid, J. A. Jacob-Nara, and P. J. Rowe are employees of Sanofi and may hold stock and/or stock options in the company. S. Nash and Y. Deniz are employees and shareholders of Regeneron Pharmaceuticals. H. Sacks is an employee of Regeneron Pharmaceuticals and a shareholder of Optinose.

Supplementary info

Publication types, MeSH terms, Substances, Associated dataExpand

Full text links



[Proceed to details](#)

Cite

Share

21

Editorial

Clin Exp Pediatr

-
-
-

. 2024 Dec;67(12):675-676.

doi: 10.3345/cep.2024.00164. Epub 2024 Jul 31.

[Comorbidities of allergic rhinitis in children](#)

[Yong Ju Lee¹](#)

Affiliations Expand

- PMID: 39091154
- PMCID: [PMC11621728](#)

- DOI: [10.3345/cep.2024.00164](https://doi.org/10.3345/cep.2024.00164)

No abstract available

Conflict of interest statement

Conflicts of interest

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

Comment on

- [Action-plan and as-needed therapy in allergic rhinitis.](#)

Yang HJ.Clin Exp Pediatr. 2024 Jun;67(6):267-273. doi: 10.3345/cep.2023.00654. Epub 2024 May 21.PMID: 38772413 Free PMC article.

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

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

Share

22

J Asthma

-
-
-

. 2024 Dec;61(12):1698-1705.

doi: 10.1080/02770903.2024.2379410. Epub 2024 Jul 31.

[Clinical efficacy and safety study of Loratadine combined with glucocorticoid nasal spray in the treatment of pediatric bronchial asthma with seasonal allergic rhinitis](#)

[Houjuan Yang](#)¹, [Haiyu Mao](#)², [Fei Wang](#)³, [Qing Guo](#)³, [Jiusheng Chu](#)³, [Xiaojun Zhao](#)³, [Dabang Lei](#)⁴

Affiliations Expand

- PMID: 39007891
- DOI: [10.1080/02770903.2024.2379410](https://doi.org/10.1080/02770903.2024.2379410)

Abstract

Objective: To investigate the clinical efficacy and safety of Loratadine combined with Glucocorticoid nasal spray in the treatment of pediatric bronchial asthma with seasonal allergic rhinitis.

Methods: A total of 100 pediatric patients with moderate to severe bronchial asthma and seasonal allergic rhinitis admitted to our hospital between January 2020 and January 2023 were included in this study. All patients met the complete inclusion and exclusion criteria. Based on different treatment interventions, they were divided into the control group ($n = 50$) and the observation group ($n = 50$). Patients in the control group received treatment with glucocorticoid nasal spray, while patients in the observation group received combined intervention with Loratadine in addition to the treatment received by the control group. The clinical treatment outcomes, incidence of adverse reactions, as well as the scores of nasal symptoms, asthma control, and peak expiratory flow rates at different treatment time points (baseline, T1: 30 days after treatment, T2: 60 days after treatment, T3: 90 days after treatment) were compared between the two groups. The combined treatment of Loratadine with Glucocorticoid nasal spray demonstrates significant clinical efficacy in the treatment of pediatric bronchial asthma with seasonal allergic rhinitis. It further promotes the recovery of peak expiratory flow rates, improves symptoms of rhinitis and asthma in pediatric patients. Importantly, the application of this combined treatment does not increase the risk of adverse reactions in pediatric patients, indicating its high safety profile. This treatment approach is worthy of clinical application and further promotion.

Keywords: Loratadine; bronchial asthma; clinical efficacy; glucocorticoid; pediatric; safety; seasonal allergic rhinitis.

Supplementary info

MeSH terms, SubstancesExpand

Full text links



chronic cough

1

J Voice

-
-

. 2024 Dec 5:S0892-1997(24)00376-X.

doi: 10.1016/j.jvoice.2024.10.027. Online ahead of print.

The Relationship Between Self-Reported Nocturnal Cough Symptoms and Acoustic Cough Monitoring

[Brittany N Fletcher](#)¹, [Lauren J Humpert](#)², [Aaron D Friedman](#)³, [Sudip Vhaduri](#)⁴, [Victoria S McKenna](#)⁵

Affiliations Expand

- PMID: 39643557
- DOI: [10.1016/j.jvoice.2024.10.027](https://doi.org/10.1016/j.jvoice.2024.10.027)

Abstract

Objective: This pilot investigation explored the relationship between self-reported clinical cough symptoms and objective acoustic cough data in individuals with nocturnal chronic cough.

Methods: Ten participants diagnosed with chronic cough with a nocturnal component underwent two study sessions, approximately 1 week apart. Participants completed questionnaires regarding cough severity and their perceptions of using a smartphone application (app) to audio record cough. Between sessions, participants utilized the continuous audio recorder while sleeping. The relationship between the number of coughs captured at night and the self-reported impact of cough awakening during sleep were analyzed.

Results: We found strong correlations ($\rho = -0.78, -0.87$) between formalized Leicester Cough Questionnaire scores and acoustically determined cough frequency. However, there were large differences between the average number of self-reported cough awakening events (0-3) and the number of acoustically recorded coughs (0-639). While users expressed comfort with recording and sharing acoustic data (4.8/5 Likert rating), concerns over confidentiality in daytime use were noted (4.1/5).

Conclusion: Formalized cough questionnaires provide insight into chronic cough at night but may fall short in quantifying the sheer frequency of coughs patients are experiencing. Although continuous audio recordings via smartphone emerged as a comfortable means for patients to supply quantifiable data regarding the impact of chronic cough during sleep, future endeavors in cough acoustic monitoring should prioritize privacy considerations for daytime use and work to share information with health care providers.

Keywords: Acoustics—Technology—Upper airway disorders.

Copyright © 2024 The Voice Foundation. Published by Elsevier Inc. All rights reserved.

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.

[Proceed to details](#)

Cite

Share

2

Sci Rep

-
-
-

. 2024 Dec 4;14(1):30225.

doi: 10.1038/s41598-024-80506-y.

[Nationwide study of chronic codeine use and its impact on cough related diseases in South Korea](#)

[Tai Joon An](#)¹, [Yun-Hee Lee](#)², [Joon-Sung Joh](#)³, [Jun-Pyo Myong](#)⁴

Affiliations [Expand](#)

- PMID: 39632868
- PMCID: [PMC11618306](#)
- DOI: [10.1038/s41598-024-80506-y](#)

Abstract

Codeine is widely used to control coughs, although concerns about its overuse arise due to its side-effects. This study aimed to evaluate the status of codeine usage according to various medical conditions. The Korean National Health Insurance Service sample cohort was analyzed. Subjects with more than continuous sixty days of antitussive and codeine

were defined as chronic users. It was evaluated according to age, smoking status, chronic obstructive pulmonary disease (COPD), asthma, allergic rhinitis (AR), bronchiectasis, chronic cough (CC), gastroesophageal reflux disease (GERD), and lung cancer. A total of 89,289 chronic antitussive users were identified, of whom 589 were chronic codeine users. The chronic codeine users were older, more likely to be smokers, and more likely to have multimorbidity ($P < 0.001$, all). After adjusting age, chronic codeine use showed a positive correlation with lung cancer (adjusted odds ratio [aOR]: 6.99), COPD (aOR: 2.04), GERD (aOR: 1.93), and CC (aOR: 1.60). Multimorbidity also revealed positive correlations, increasing as the number of comorbidities rose ($P < 0.001$). Our findings highlight that chronic codeine usage is associated with underlying cough-inducing diseases, emphasizing the need for monitoring and guidelines to ensure safer use, especially among older adults and those with chronic respiratory conditions.

Keywords: Chronic cough; Chronic respiratory diseases; Codeine.

© 2024. The Author(s).

Conflict of interest statement

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

- [34 references](#)
- [3 figures](#)

Supplementary info

MeSH terms, SubstancesExpand

[Proceed to details](#)

Cite

Share

3

Review

Chest

-
-
-

. 2024 Dec 2:S0012-3692(24)05602-2.

doi: 10.1016/j.chest.2024.09.049. Online ahead of print.

The emerging role of alarmin-targeting biologics in the treatment of patients with COPD

[Bartolome R Celli¹](#), [Antonio Anzueto²](#), [Dave Singh³](#), [Nicola A Hanania⁴](#), [Leonardo Fabbri⁵](#), [Fernando J Martinez⁶](#), [Xavier Soler⁷](#), [Michel Djandji⁸](#), [Juby A Jacob-Nara⁹](#), [Paul J Rowe⁹](#), [Yamo Deniz⁷](#), [Amr Radwan⁷](#)

Affiliations Expand

- PMID: 39631681
- DOI: [10.1016/j.chest.2024.09.049](https://doi.org/10.1016/j.chest.2024.09.049)

Abstract

Topic importance: Chronic obstructive pulmonary disease (COPD) is a complex, heterogeneous lung disease characterized by persistent airflow limitation secondary to airways and parenchymal abnormalities, and respiratory symptoms, including dyspnoea, fatigue, chronic cough, and sputum production. Cigarette smoke exposure is a major contributor to COPD although inhalation of toxic particles and other environmental and host factors can contribute to its genesis. Over time, the clinical course is frequently punctuated by exacerbations that further accelerate lung function decline and increase exacerbation risk. Despite current optimal therapy, many patients remain symptomatic, have exacerbations, and increased morbidity, mortality, and health-care costs. This review focuses on current knowledge of COPD pathophysiology, the role of inflammatory mechanisms, and the potential use of biologics to modulate these mechanisms.

Review findings: The inflammatory response in COPD includes both type 1 and type 2 immune cells. Type 2 inflammation is suggested by eosinophilia in a significant proportion of COPD patients. Studies targeting IL-5 in patients with COPD have failed to demonstrate significant reductions in exacerbations, suggesting that eosinophil modulation alone may be insufficient to treat COPD. Based on a better understanding of the disease and role of alarmins, with a broader role in the inflammatory cascade, it is likely that some biologics may benefit certain COPD endotypes. Ongoing trials will provide information about which groups can benefit from the blocking of specific pathways, such as interleukin (IL)-5, IL-4/IL-13, IL-33 or thymic stromal lymphopoietin.

Summary: Biologics targeting inflammatory pathways may be effective treatments for specific patients with COPD.

Keywords: Alarmin; biologic; chronic obstructive pulmonary disease; type 2 inflammation.

Copyright © 2024. Published by Elsevier Inc.

Supplementary info

Publication typesExpand

[Proceed to details](#)

Cite

Share

4

ERJ Open Res

-
-
-

. 2024 Dec 2;10(6):00468-2024.

doi: 10.1183/23120541.00468-2024. eCollection 2024 Nov.

[The development of the Cough Hypersensitivity Questionnaire for chronic cough](#)

[Barnaby Hirons](#)^{1,2}, [Peter S P Cho](#)^{1,2}, [Chris Krägeloh](#)³, [Richard J Siegert](#)³, [Richard Turner](#)^{4,5}, [Katherine Rhatigan](#)^{1,2}, [Harini Kesavan](#)¹, [Ewan Mackay](#)^{1,2}, [Ha-Kyeong Won](#)⁶, [Ju-Young Kim](#)⁷, [Woo-Jung Song](#)⁸, [Surinder S Biring](#)^{1,2}

Affiliations Expand

- PMID: 39624390
- PMCID: [PMC11610079](#)
- DOI: [10.1183/23120541.00468-2024](#)

Abstract

Introduction: Chronic cough is considered a disorder of neuronal hypersensitivity in which patients frequently report abnormal laryngeal and chest sensations, and excessive triggers. To facilitate clinical assessment, we developed the Cough Hypersensitivity Questionnaire (CHQ).

Methods: Candidate questionnaire items were developed following interviews with patients with refractory chronic cough (n=10, United Kingdom), and review by a multidisciplinary team. The CHQ was evaluated in individuals with chronic cough (n=535,

UK/South Korea), for unidimensionality and differential item functioning (with Rasch analysis), internal consistency, concurrent validity (against cough severity visual analogue scale (VAS) and Leicester Cough Questionnaire (LCQ) scores), and content validity (cognitive debriefing interviews, n=13).

Results: Concept elicitation created a pool of 34 items. Eleven items were removed following multidisciplinary team review of patient interviews. Rasch analysis confirmed the CHQ total score to be a unidimensional scale; one item was removed due to differential item functioning. The final 22 binary-item CHQ comprises 6 sensation-related and 16 trigger-related items. Median (interquartile range) total CHQ scores were 9 (6-12); sensations 4 (2-5) and triggers 5 (3-8). Internal consistency was good (person separation index 0.74). The CHQ total score was moderately associated with cough severity VAS (0.42, $p=0.005$) and LCQ total score ($p=-0.52$, $p<0.001$). In cognitive debriefing, patients found that the CHQ was relevant to their condition and simple to complete.

Conclusion: The CHQ is simple to use and has validity for assessing cough triggers and sensations in patients with chronic cough. Further studies are needed to assess its repeatability, responsiveness and clinical utility.

Copyright ©The authors 2024.

Conflict of interest statement

Conflict of interest: R. Turner is an associate editor and W.-J. Song is the current Chief Editor of ERJ Open Research. The remaining authors have nothing to disclose.

- [32 references](#)
- [3 figures](#)

[Proceed to details](#)

Cite

Share

5

ERJ Open Res

-
-
-

. 2024 Dec 2;10(6):00316-2024.

doi: 10.1183/23120541.00316-2024. eCollection 2024 Nov.

[An exploration of clinically meaningful definitions of cough bouts](#)

[Kimberley J Holt](#)^{1,2}, [Rachel J Dockry](#)^{1,2}, [Kevin McGuinness](#)^{1,2}, [Emma Barrett](#)^{2,3}, [Jaclyn A Smith](#)^{1,2}

Affiliations [Expand](#)

- PMID: 39624380
- PMCID: [PMC11610081](#)
- DOI: [10.1183/23120541.00316-2024](#)

Abstract

Rationale: The measurement of cough frequency is widely used in clinical trials, typically expressed as the number of explosive cough sounds per hour. However, this measure does not capture the clustering of coughs into bouts. Coughing bouts contribute to perceived cough severity and the physical complications of coughing, but an agreed standard definition of cough bouts is lacking. The objectives of the present study were to explore the impact of different definitions of cough bouts on the parameters generated, their relationships with reported cough severity and influence of age and gender in refractory chronic cough (RCC).

Methods: We analysed 24-h acoustic recordings and concurrent cough severity visual analogue scales from 91 RCC patients (62% female, median (interquartile range) age 60.0 (54-67.0) years). A custom-built algorithm calculated cough bouts, defined by the intervals between explosive cough sounds. Bouts defined by inter-cough intervals from ≤ 0.5 to ≤ 10 s (0.5 s increments) were explored, and parameters including number of bouts, median/maximum bout length and total bout duration calculated.

Measurements and main results: Using inter-cough intervals of > 3 s to define cough bouts made little difference to cough bout parameters. Correlations between cough severity and bout parameters were weak but most likely to be significant when single coughs were removed. Cough-free time/total time spent coughing tended to have more influence on cough severity than the average cough bout length, irrespective of the interval used.

Conclusion: These analyses favour definitions of cough bouts utilising inter-cough intervals of ≤ 3 s and the exclusion of single coughs from cough bout analysis.

Copyright ©The authors 2024.

Conflict of interest statement

Conflict of interest: K. McGuinness invented the VitaloJAK filtering algorithm that has been licensed by Manchester University NHS Foundation Trust (MFT) and the University of Manchester to Vitalograph Ltd and Vitalograph Ireland (Ltd). MFT receives royalties that may be shared with K. McGuinness as the inventor and the clinical division in which J.A. Smith works. The remaining authors have nothing to disclose.

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

[Proceed to details](#)

Cite

Share

6

COPD

-
-
-

. 2024 Dec;21(1):2425153.

doi: 10.1080/15412555.2024.2425153. Epub 2024 Nov 19.

[**A Study on the Association between Cough Sensitivity and Acute Exacerbations in Patients with Chronic Obstructive Pulmonary Disease**](#)

[Haodong Bai¹](#), [Shuangxi Wang^{1,2}](#), [Bingxian Sha¹](#), [Xianghuai Xu¹](#), [Li Yu¹](#)

Affiliations [Expand](#)

- PMID: 39560068
- DOI: [10.1080/15412555.2024.2425153](https://doi.org/10.1080/15412555.2024.2425153)

Free article

Abstract

Objective: To investigate the relationship between cough sensitivity and acute exacerbation in stable chronic obstructive pulmonary disease (COPD) patients.

Methods: Stable COPD patients who visited our department from July 2022 to June 2023 were included. They were subjected to cough sensitivity test, spirometry, induced sputum cytology examination, questionnaire assessment such as cough symptom score, etc. They were followed up for 12 months, and were divided into the acute exacerbation (AE) group and the stable group according to whether acute exacerbation occurred during the follow-up period. We compared the differences in cough sensitivity, pulmonary function, and questionnaires between the two groups, analyzed the relationship between cough sensitivity and acute exacerbation, and screened the risk factors for AECOPD.

Results: A total of 145 patients with stable COPD were included. AE group ($n = 94$) had lower FEV₁/FVC (50.08 ± 11.11 versus 54.28 ± 11.58 , $p = 0.03$) and cough sensitivity IgC₅ [$-0.01(0.90)$ versus $0.59(0.90)$, $p < 0.01$] than those in the stable group ($n = 51$) patients, the daytime cough symptom score [$2(2)$ versus $1(2)$, $p = 0.02$] and VAS score [$50(40)$ versus $30(50)$, $p < 0.01$] were higher than stable group. Multivariate logistic regression analysis showed IgC₅ ($OR = 0.34$, $95\% CI = 0.16-0.71$, $p < 0.01$) was an independent risk factor for AECOPD. When IgC₅ was used to predict acute exacerbation in stable COPD patients, the AUC was 0.69, the sensitivity was 59.57%, and the specificity was 72.55%.

Conclusion: Although causality is not necessarily demonstrated, baseline cough sensitivity IgC₅ in stable COPD patients is an independent risk factor for AECOPD, and it has some predictive value for future acute exacerbations.

Keywords: COPD; acute exacerbation; cough sensitivity.

Supplementary info

MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

7

Review

Curr Opin Otolaryngol Head Neck Surg

•

-
-

. 2024 Dec 1;32(6):403-409.

doi: 10.1097/MOO.0000000000001009. Epub 2024 Sep 4.

[Current opinion in refractory and/or unexplained chronic cough](#)

[Stephanie Misono](#)¹, [Carolyn K Novaleski](#)²

Affiliations Expand

- PMID: 39235308
- DOI: [10.1097/MOO.0000000000001009](https://doi.org/10.1097/MOO.0000000000001009)

Abstract

Purpose of review: Otolaryngologists are vital to successfully managing chronic cough in adults. This review presents updates regarding rapidly evolving concepts in chronic cough.

Recent findings: Significant growth is occurring in chronic cough research, strengthening the evidence of its major psychosocial impacts. Elucidation of the neural underpinnings of normal and abnormal cough within both the peripheral and central nervous systems highlight the previously underappreciated complexity of cough. Recent clinical practice recommendations emphasize personalized treatment approaches through addressing treatable traits of chronic cough. Investigations are ongoing to better distinguish chronic cough subgroups, and multiple types of important clinical outcome measures are being characterized. Newer research about chronic cough treatment encompasses pharmacologic and nonpharmacologic interventions, including oral and inhaled medications, superior laryngeal nerve blocks, and behavioral therapy.

Summary: As knowledge about chronic cough in adults continues to expand in both research and clinical practice, otolaryngologists can continue to raise awareness of the role of the larynx in cough and promote ongoing multidisciplinary collaborations. In the coming years, more pharmacologic options and personalized treatment approaches will likely emerge for chronic cough.

Copyright © 2024 Wolters Kluwer Health, Inc. All rights reserved.

- [99 references](#)

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

[Proceed to details](#)

Cite

Share

8

J Dermatolog Treat

-
-
-

. 2024 Dec;35(1):2355976.

doi: 10.1080/09546634.2024.2355976. Epub 2024 May 26.

[Association of pruritus and chronic cough: an all of us database study](#)

[Divija Sharma](#)¹, [Juliana Pulsinelli](#)¹, [Joel Correa da Rosa](#)¹, [Zhen Wang](#)¹, [Brian Kim](#)¹, [Benjamin Ungar](#)¹

Affiliations Expand

- PMID: 38797745
- DOI: [10.1080/09546634.2024.2355976](https://doi.org/10.1080/09546634.2024.2355976)

Free article

Abstract

Purpose: Based on a potential shared pathophysiology tied to mast cell activity and neurogenic inflammation that may link pruritus and chronic cough (CC), this study, leveraging the *All of Us* database, examines the association between the two conditions.

Materials and methods: A nested case-control comparison was used to examine the association, identifying cases with SNOMED codes 418363000 (pruritus) and 68154008 (CC). Matching was performed on a 1:4 ratio by age, sex, and ethnicity using the MatchIt package in R, followed by maximum likelihood method to estimate odds ratios (ORs) and 95% confidence intervals from 2x2 contingency tables.

Results: CC patients ($n = 2,388$) were more than twice as likely to be diagnosed with pruritus (OR: 2.65) and pruritus patients ($n = 22,496$) were more than twice as likely to be diagnosed with CC (OR: 2.57), than respective matched controls.

Conclusions: These results highlight the potential bidirectional relationship between CC and pruritus, suggesting possible shared immune and neural pathways. Treatments like difelikefalin and nalbuphine that modulate these pathways, alongside P2X3 targeting agents, are emerging as potential therapeutic approaches for itch and chronic cough given the possible interconnected pathophysiology. This study's insights into the associations between pruritus and CC may pave the way for targeted therapeutic strategies that address their shared mechanisms.

Keywords: Chronic cough; central sensitization; itch; mast cell dysfunction; pruritus.

Supplementary info

MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

9

Heliyon

-
-
-

. 2024 Nov 15;10(22):e40409.

doi: 10.1016/j.heliyon.2024.e40409. eCollection 2024 Nov 30.

[The impact of vaccination status on post-acute sequelae in hospitalized COVID-19 survivors using a multi-disciplinary approach: An observational single center study](#)

[Lucia Ilaria Birtolo](#)¹, [Gianluca Di Pietro](#)¹, [Antonella Ciuffreda](#)¹, [Riccardo Improta](#)¹, [Sara Monosilio](#)¹, [Silvia Prosperi](#)¹, [Sara Cimino](#)¹, [Nicola Galea](#)², [Paolo Severino](#)¹, [Giacchino Galardo](#)³, [Maria Chiara Colaiacomo](#)⁴, [Patrizia Pasculli](#)⁵, [Angelo Petroianni](#)⁶, [Paolo Palange](#)⁶, [Claudio Maria Mastroianni](#)⁵, [Laura de Vito](#)⁷, [Carlo Catalano](#)², [Francesco Pugliese](#)⁸, [Maria Rosa Ciardi](#)⁵, [Paola Celli](#)⁸, [Roberto Badagliacca](#)¹, [Francesco Fedele](#)¹, [Carmine Dario Vizza](#)¹, [Viviana Maestrini](#)¹, [Massimo Mancone](#)¹; [Policlinico Umberto I COVID-19 Group](#)

Collaborators, Affiliations Expand

- PMID: 39641021
- PMCID: [PMC11617281](#)
- DOI: [10.1016/j.heliyon.2024.e40409](#)

Abstract

Background: COVID-19 vaccines reduced mortality, hospitalizations and ICUs admissions. Conversely, the impact of vaccination on Long COVID-19 syndrome is still unclear. This study compared the prevalence of post-acute sequelae at short and long-term follow-up among hospitalized unvaccinated and vaccinated COVID-19 survivors through a multidisciplinary approach.

Methods: After 2 months from discharge, unvaccinated and vaccinated COVID-19 survivors underwent a follow-up visit at a dedicated "post-COVID-19 Outpatient Clinic". The follow-up visit included a cardiovascular evaluation, blood tests, chest computed tomography, 6-min walking test (6MWT), spirometry. A one-year telephone follow-up was performed to assess re-hospitalizations, death and long-lasting symptoms. An additional 1:1 case-control matching analysis adjusted for baseline characteristics was performed.

Results: Between June 2020 and June 2022, a total of 458 unvaccinated and vaccinated patients (229 per group) underwent the follow-up visit. Vaccinated patients had lower rates of ICU admissions (1.7 % vs 9.6 %, $p < 0.001$) and severe respiratory complications requiring intubation (1.3 % vs 7 %, $p = 0.002$) or non-invasive ventilation such as high-flow nasal oxygen therapy (1.7 % vs 7.9 %, $p = 0.02$), CPAP (1.3 % vs 20.1 %, $p < 0.001$), and low-flow oxygen therapy (3.5 % vs 63.3 %, $p < 0.001$) compared to unvaccinated ones. At 2-month follow-up, vaccinated patients **had** fewer persistent ground-glass opacities (2.6 % vs 52.8 %, $p < 0.001$) or consolidations (0.9 % vs 8.3 %, $p < 0.001$). Additionally, unvaccinated patients experienced more frequent myocarditis (4.8 % vs 0.9 %, $p = 0.013$) and pulmonary embolism (1.8 % vs 0 %, $p = 0.042$) and exhibited more significant respiratory impairment as evidenced by desaturation during the 6MWT (10.2 % vs 3.5 %, $p = 0.005$) and altered spirometry (14 % vs 8.7 %, $p = 0.043$) compared to vaccinated ones. At one-year, unvaccinated patients reported more symptoms such as dyspnea (20.5 % vs 10 %, $p = 0.002$), psychological symptoms (10 % vs 3.5 %, $p = 0.005$) and chronic rhinosinusitis/cough (6.6 % vs 2.6 %, $p = 0.04$) as compared to vaccinated ones. The 1:1 case-control matching analysis also confirmed these results.

Conclusions: COVID-19 vaccines improve short-term outcomes and may reduce Long COVID-19 prevalence.

Keywords: Hospitalized; Long-COVID19; Sequelae; Survivors; mRNA vaccines.

© 2024 The Authors.

Conflict of interest statement

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.

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

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

1

Respir Med

-
-
-

. 2024 Dec 4:107906.

doi: 10.1016/j.rmed.2024.107906. Online ahead of print.

[Airway total bacterial density, microbiota community composition and relationship with clinical parameters in bronchiectasis](#)

[Zina Alfahl](#)¹, [Gisli G Einarsson](#)², [J Stuart Elborn](#)², [Deirdre F Gilpin](#)¹, [Katherine O'Neill](#)², [Kathryn Ferguson](#)³, [Adam T Hill](#)⁴, [Michael R Loebinger](#)⁵, [Mary Carroll](#)⁶, [Timothy Gatheral](#)⁷, [Anthony De Soya](#)⁸, [James D Chalmers](#)⁹, [Christopher Johnson](#)¹⁰, [John R Hurst](#)¹¹, [Jeremy S Brown](#)¹¹, [Judy M Bradley](#)², [Michael M Tunney](#)¹²

Affiliations Expand

- PMID: 39643125
- DOI: [10.1016/j.rmed.2024.107906](#)

Abstract

Background and objective: This study explored the relationship between total bacterial density, airway microbiota composition and clinical parameters in bronchiectasis. We determined changes with time during clinical stability and following antibiotic treatment of a pulmonary exacerbation.

Methods: We conducted a multicentre longitudinal cohort study of UK participants with CT confirmed bronchiectasis. Sputum samples and clinical parameters [FEV₁% predicted, lung clearance index, C-reactive protein, white cell count and Quality of Life] were collected when participants were clinically stable and pre/post-antibiotic treatment of an exacerbation. Total bacterial density and microbiota community composition was measured by quantitative polymerase chain reaction and sequencing of the V4 region of bacterial 16S rRNA, respectively.

Results: Among 105 participants at baseline, 65 (62%) were female with a mean age of 65 years and FEV₁ at 69% predicted. In participants who remained clinically stable (n=15), no significant changes were observed in bacterial density, microbiota diversity, richness, evenness, and dominance (p=0.30, 0.45, 0.54, 0.23 and 0.43; respectively) across four time points over a 1-year period. Similarly, for participants with paired pre/post-antibiotic treatment samples (n=19), no significant changes were observed (p=0.30, 0.46, 0.44, 0.71 and 0.58; respectively). However, considerable fluctuation in community composition between samples was apparent for most patients. Total bacterial density and microbiota composition did not correlate with clinical parameters at baseline (n=75).

Conclusions: Stability in bacterial density and microbiota diversity, richness, evenness and dominance was observed over time at a population level but considerable fluctuation was apparent in samples from individual patients.

Keywords: Bronchiectasis; bacterial density; clinical outcomes; microbiome composition; quality of life; quantitative real time PCR.

Copyright © 2024. Published by Elsevier Ltd.

Conflict of interest statement

Declaration of Competing Interest Z.A, G.E., D.G., K.O., K.F., A.H., M.C., T.G., C.J., J.B.: no conflict of interest. J.S.E.: reports grants from European Union IMI Grant (in collaboration with Novartis) and grants from Novartis, and personal fees from Vertex, Galapagos and Ionis, outside the submitted work. M.L.: reports funding from by the Innovative Medicines Initiative (IMI) and EFPIA companies under the European Commission funded project, iABC (grant 115721). Consulting fees from Armata, 30T, Astra Zeneca, Parion, Insmmed, Chiesi, Zambon, Electromed, Recode, AN2, Boehringer Ingelheim and Mannkind. Payment or honoraria for lectures by Insmmed and Unpaid ERS infection group chair. A.D.S.: received grants from AstraZeneca, Pfizer, GSK and Novartis for research into Bronchiectasis and consulting fees from AstraZeneca, Insmmed, GSK, Boehringer, 30T and Bayer. J.C.: received funding from Astrazeneca, Boehringer Ingelheim, Chiesi, Glaxosmithkline, Insmmed, Novartis, Gilead Sciences, Trudell, Genentech and consulting fees from Astrazeneca Boehringer Ingelheim, Chiesi, Glaxosmithkline, Insmmed, Novartis, Pfizer, Zambon, Janssen, Antabio. J.H.: received funding from Astra Zeneca and consulting fees from Astra Zeneca and GSK. Payment for honorary lectures from Astra Zeneca, Boehringer Ingelheim, Chiesi, Sanofi, Takeda and equipment from Nonin. J.M.B.: received funding Northern Ireland Clinical Research Facility, Health and Social Care (Northern Ireland) and the National Institute for Health and Care Research. M.M.T: received funding from the European Union Innovative Medicines Initiative (Grant Agreement number 115721), Novartis, Spexis and Antabio.

[Proceed to details](#)

Cite

Share

2

Sci Rep

-
-
-

. 2024 Dec 4;14(1):30225.

doi: 10.1038/s41598-024-80506-y.

[Nationwide study of chronic codeine use and its impact on cough related diseases in South Korea](#)

[Tai Joon An](#)¹, [Yun-Hee Lee](#)², [Joon-Sung Joh](#)³, [Jun-Pyo Myong](#)⁴

Affiliations Expand

- PMID: 39632868
- PMCID: [PMC11618306](#)
- DOI: [10.1038/s41598-024-80506-y](#)

Abstract

Codeine is widely used to control coughs, although concerns about its overuse arise due to its side-effects. This study aimed to evaluate the status of codeine usage according to various medical conditions. The Korean National Health Insurance Service sample cohort was analyzed. Subjects with more than continuous sixty days of antitussive and codeine were defined as chronic users. It was evaluated according to age, smoking status, chronic obstructive pulmonary disease (COPD), asthma, allergic rhinitis (AR), bronchiectasis, chronic cough (CC), gastroesophageal reflux disease (GERD), and lung cancer. A total of 89,289 chronic antitussive users were identified, of whom 589 were chronic codeine users. The chronic codeine users were older, more likely to be smokers, and more likely to have multimorbidity ($P < 0.001$, all). After adjusting age, chronic codeine use showed a positive correlation with lung cancer (adjusted odds ratio [aOR]: 6.99), COPD (aOR: 2.04), GERD (aOR: 1.93), and CC (aOR: 1.60). Multimorbidity also revealed positive correlations, increasing as the number of comorbidities rose ($P < 0.001$). Our findings highlight that chronic codeine usage is associated with underlying cough-inducing diseases, emphasizing the need for monitoring and

guidelines to ensure safer use, especially among older adults and those with chronic respiratory conditions.

Keywords: Chronic cough; Chronic respiratory diseases; Codeine.

© 2024. The Author(s).

Conflict of interest statement

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

- [34 references](#)
- [3 figures](#)

Supplementary info

MeSH terms, SubstancesExpand

[Proceed to details](#)

Cite

Share

3

BMC Pulm Med

-
-
-

. 2024 Dec 3;24(1):599.

doi: 10.1186/s12890-024-03422-x.

[The characteristics and prognosis of bronchiectasis patients with airflow limitation: a prospective longitudinal study](#)

[Yuanting Cai](#)^{1,2}, [Linbin Xv](#)^{1,2}, [Zili Zhu](#)¹, [Shiyi He](#)¹, [Tianyu Sun](#)², [Chao Cao](#)³

Affiliations Expand

- PMID: 39627776
- PMCID: [PMC11616346](#)
- DOI: [10.1186/s12890-024-03422-x](#)

Abstract

Background: As bronchiectasis progresses, increasing degrees of airflow limitation can occur.

Objectives: This study aimed to investigate whether concomitant airflow limitation was associated with poor prognosis in patients with bronchiectasis and to identify the characteristics of patients with airflow limitation in bronchiectasis.

Design: A prospective longitudinal study was conducted to determine the characteristics and prognosis of bronchiectasis patients with airflow limitation.

Methods: We conducted a prospective longitudinal study. Patients who failed to complete the follow-up were withdrawn from the trial. High-resolution computed tomography (HRCT) was used for diagnosing bronchiectasis, whereas postbronchodilator forced expiratory volume in one second of the predicted value (post-FEV1%) was employed for grading airflow limitation. The main variables included questionnaires, anthropometric measurements, pulmonary function tests, laboratory tests, and CT findings. The primary outcome was frequent exacerbations. Differences among the groups were evaluated via two-tailed Student's t test or ANOVA for continuous variables if the data were normally distributed. In the case of a nonnormal distribution, the Mann-Whitney U test and Kruskal-Wallis test were used. The chi-square test or Fisher's exact test was used for categorical variables. Binary logistic regression analyses were used to identify factors and calculate the odds ratio (OR) for frequent exacerbations.

Results: A total of 189 subjects with bronchiectasis were enrolled in the study, including 97 patients with airflow limitation and 92 patients without airway obstruction. Patients with airflow limitation had greater numbers of exacerbations (1.46 ± 0.83 vs. 1.76 ± 1.10 times, $P = 0.013$) at 12 months after enrolment and greater numbers of hospitalizations (1.10 ± 0.30 vs. 1.36 ± 0.67 times, $P = 0.0016$) at 24 months after enrolment. In addition, acute exacerbations lasted longer (8.69 ± 3.78 vs. 13.11 ± 14.03 days, $P = 0.0171$), and the total number of hospitalizations was greater (1.34 ± 0.77 vs. 1.80 ± 1.67 times, $P = 0.0421$) for patients with a mean follow-up duration of 32 months (Table 3). Bronchiectasis patients with airflow limitation exhibit more severe manifestations of bronchiectasis both clinically and functionally. Furthermore, the cohort of bronchiectasis patients with airflow limitation had a significantly greater infection rate than did the BE group ($P = 0.0244$), with a notable disparity observed in the incidence of *P. aeruginosa* infection ($P < 0.0001$).

Conclusion: The results of our study suggest that patients with airflow limitation are more likely to experience acute exacerbations and hospitalizations than are those without airflow limitation. Patients with bronchiectasis concomitant with airflow limitation should be identified as early as possible, and individualized treatment methods should be formulated.

Keywords: Acute exacerbation; Airflow limitation; Airflow limitation in bronchiectasis; Bronchiectasis; Frequent exacerbations; Hospitalization.

© 2024. The Author(s).

Conflict of interest statement

Declarations. Ethics approval and consent to participate: All methods were carried out in accordance with relevant guidelines and regulations. This study was

approved by the Ethics Commission of Ningbo First Hospital (2021 - R062). Consent was obtained from the participants prior to their participation in the study. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- [26 references](#)
- [2 figures](#)

Supplementary info

MeSH terms, Grants and funding [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

4

ERJ Open Res

-
-
-

. 2024 Dec 2;10(6):00330-2024.

doi: 10.1183/23120541.00330-2024. eCollection 2024 Nov.

[Cough in non-cystic fibrosis bronchiectasis](#)

[Ahmad Kantar](#)^{1,2}, [Woo-Jung Song](#)³, [Andrew Bush](#)⁴, [Grigorios Chatziparasidis](#)^{5,6}

Affiliations [Expand](#)

- PMID: 39624376
- PMCID: [PMC11610066](#)
- DOI: [10.1183/23120541.00330-2024](#)

Abstract

Non-cystic fibrosis bronchiectasis (NCFBE) belongs to the spectrum of chronic suppurative lung diseases and is characterised by persistent wet/sputum-productive cough and airway dilatation. Morphological and structural changes in the airways lead to changes in airflow, impair breathing-induced mucus transport and sliding, and reduce the shear forces of cough. Moreover, mucus hyperviscosity contributes to compromised ciliary activity and the pathogenesis of the disease. This mini-review highlights the role of cough in NCFBE, especially with respect to mucus clearance. Cough is the principal backup mechanism when mucus clearance is impaired due to either reduced function of cilia- and breathing-induced mucus transport, or abnormal mucus, or both. The efficiency of cough in overcoming the cohesive and adhesive properties of mucus is determined by both the forces applied to mucus by airflow and the mucus-airway surface properties. In NCFBE, mucus hyperviscosity contributes to impaired mucus clearance and determines disease pathogenesis; therefore, it may be a therapeutic target. The primary objectives of physiotherapy regimens in NCFBE are mucus hydration and the establishment of an optimal expiratory airflow velocity, which exerts shearing forces on the mucus located on the airway surface. Modifying the rheological properties of mucus and enhancing its transport whenever possible (by breathing manoeuvres, ciliary activity and cough) represent prime goals in preventing disease progression and, indeed reversing, bronchiectasis in the early stages of the disease, as well as preventing pulmonary exacerbations.

Copyright ©The authors 2024.

Conflict of interest statement

Conflict of interest: A. Kantar is currently serving as an Associate Editor for ERJ Open Research. W-J. Song is currently serving as Chief Editor for ERJ Open Research. The remaining authors have nothing to disclose.

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

[Proceed to details](#)

Cite

Share

5

Exp Ther Med

-
-
-

. 2024 Oct 14;28(6):455.

doi: 10.3892/etm.2024.12745. eCollection 2024 Dec.

Characteristics of different pathogenic bacterial infections and their effects on prognosis in adult patients with bronchiectasis

Yueying Niu¹, Xue Lian^{1,2}, Xiaosi Li³, Xiang Ge¹, Haiqin Wang¹

Affiliations Expand

- PMID: 39478731
- PMCID: [PMC11523220](#)
- DOI: [10.3892/etm.2024.12745](#)

Abstract

The present study aimed to analyse the types of pathogens infecting adults with bronchiectasis and the effects of different pathogens on the number of acute exacerbations and the length of hospitalization for 1 year in patients with severe bronchiectasis. A total of 522 patients with bronchiectasis admitted to the Department of Respiratory and Critical Care Medicine at the Second Hospital of Jiaxing (Zhejiang, China) between January 2019 and December 2022 were retrospectively analysed. The patients were divided into a mild to moderate group and a severe group according to the bronchiectasis severity index criteria. The basic and clinical information of all the patients was collected. The patients were followed up for 1 year after the day when the sputum or alveolar lavage fluid samples tested positive for pathogens. The follow-up information included the exacerbation of cough symptoms, the number of hospitalizations and the number of days of antibiotic use in patients with bronchiectasis. A total of 522 patients with bronchiectasis were positive for pathogens, including 192 patients with *Pseudomonas aeruginosa* (*P. aeruginosa*; 36.8%), 60 patients with *Klebsiella pneumoniae* (*K. pneumoniae*; 11.5%), 48 patients with mixed pathogens (≥ 2 pathogens at the same time; 9.2%), 36 patients with *Staphylococcus aureus* (6.9%), 33 patients with *Aspergillus fumigatus* (6.3%), 30 patients with *Haemophilus influenzae* (5.7%), 15 patients with *Acinetobacter baumannii* (*A. baumannii*; 2.9%) and 108 patients with other pathogens (20.7%). Compared with patients with mild to moderate bronchiectasis, patients with severe bronchiectasis were more likely to have *P. aeruginosa* but less likely to have *K. pneumoniae* and other pathogens. The length of hospitalization and duration of antibiotic use in the severe group of patients with bronchiectasis caused by *P. aeruginosa*, *A. fumigatus*, or *A. baumannii* were significantly longer than those in the mild to moderate group. During the 1-year follow-up, the number of acute exacerbations and hospitalizations of patients with severe bronchiectasis caused by *A. baumannii* and *P. aeruginosa* were significantly greater than those of patients with severe bronchiectasis caused by other pathogens. According to logistic regression analysis, *A. baumannii* and *P. aeruginosa* were independent risk factors for acute exacerbation of severe bronchiectasis in the following year. In patients with severe bronchiectasis, the pathogens *A. baumannii*, *P. aeruginosa* and *A. fumigatus* were independent risk factors for future acute exacerbations and increased risk of hospitalization.

Keywords: Acinetobacter baumannii; Pseudomonas aeruginosa; acute exacerbation; bronchiectasis; pathogens.

Copyright: © 2024 Niu et al.

Conflict of interest statement

The authors declare that they have no competing interests.

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

Supplementary info

Grants and fundingExpand

Full text links

[Proceed to details](#)

Cite

Share

6

J Allergy Clin Immunol

-
-
-

. 2024 Dec;154(6):1560-1561.

doi: 10.1016/j.jaci.2024.05.033. Epub 2024 Oct 22.

[Defining the overlap between asthma and bronchiectasis: A call for consensus definition](#)

[Sang Hyuk Kim](#)¹, [Bumhee Yang](#)², [Kyung Hoon Min](#)³, [Hyun Lee](#)⁴

Affiliations Expand

- PMID: 39436332
- DOI: [10.1016/j.jaci.2024.05.033](#)

No abstract available

Conflict of interest statement

Disclosure Statement Disclosure of potential conflict of interest: The authors declare that they have no relevant conflicts of interest.

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

Share

7

Pulm Ther

-
-
-

. 2024 Dec;10(4):439-450.

doi: 10.1007/s41030-024-00275-x. Epub 2024 Oct 10.

[**Survival Outcomes in US Medicare Patients with Non-Cystic Fibrosis Bronchiectasis by Rate of Baseline Exacerbations**](#)

[**Joseph Feliciano**](#)¹, [**Benjamin Lewing**](#)², [**Maitreyee Mohanty**](#)¹, [**Melanie Lauterio**](#)¹, [**Sebastian Fucile**](#)¹, [**Joseph Tkacz**](#)², [**Alan F Barker**](#)³

Affiliations Expand

- PMID: 39390311
- PMCID: [PMC11573945](#)
- DOI: [10.1007/s41030-024-00275-x](#)

Abstract

Introduction: There are limited real-world data on outcomes in patients with non-cystic fibrosis bronchiectasis (NCFBE). This study assessed clinical characteristics and survival in patients with NCFBE by baseline exacerbation rate.

Methods: Patients with bronchiectasis (≥ 1 inpatient or ≥ 2 outpatient claims with a bronchiectasis diagnosis code, or one outpatient claim with bronchiectasis code and a chest computed tomography scan) were from the 100% Medicare Fee-for-Service database (Jan 2014-Dec 2020). Patients had continuous enrollment ≥ 12 months pre-index (baseline) and post-index (follow-up), with index a random bronchiectasis claim preceded by ≥ 12 months bronchiectasis history. Patients with cystic fibrosis were excluded. Patients were stratified by exacerbations during baseline (0, 1, or ≥ 2). Follow-up exacerbation rate and all-cause mortality were assessed. Controls were identified using a multistep direct matching approach. Time to death from index was estimated by Kaplan-Meier analyses.

Results: Exacerbation analysis included 92,529 patients with NCFBE and 92,529 matched controls. Exacerbations were common (43% had ≥ 1 exacerbation), with patients with more baseline exacerbations more likely to have ≥ 2 exacerbations during follow-up (11.4%, 24.2%, and 46.8% of patients with 0, 1, and ≥ 2 baseline exacerbations, respectively). Survival analysis included 110,298 patients with NCFBE and 110,298 controls. Time to death was shorter in patients with more baseline exacerbations ($P < 0.0001$). Five-year survival was 55.3%, 62.6%, and 65.4% for patients with ≥ 2 , 1, and 0 baseline exacerbations, respectively, compared with 64.1% for controls.

Conclusions: In these patients with NCFBE, exacerbations were common. History of exacerbations was associated with future exacerbations and increased all-cause mortality.

Keywords: Claims database; Exacerbations; Mortality; Non-cystic fibrosis bronchiectasis; Survival.

© 2024. The Author(s).

Conflict of interest statement

Declarations Conflict of Interest Joseph Tkacz and Benjamin Lewing are employees of Inovalon, a paid consultant for Insmmed Incorporated. Joseph Feliciano, Maitreyee Mohanty, Melanie Lauterio, and Sebastian Fucile are employees and shareholders of Insmmed Incorporated. Alan F Barker has nothing to disclose. Ethical Approval This retrospective, observational study was verified as exempt from an ethical approval by Solutions IRB according to the Code of Federal Regulations under 45 CFR 46 section 101(b)(4) as the study used previously existing, anonymized, and deidentified patient data. For this type of study, informed consent is waived/not applicable. Medical Writing/Editorial Assistance Medical writing support was provided by Rosie Morley PhD, of Envision Pharma Group, and funded by Insmmed Incorporated.

- [23 references](#)
- [3 figures](#)

Full text links



[Proceed to details](#)

Cite

Share

8

Multicenter Study

J Allergy Clin Immunol Pract

-
-
-

. 2024 Dec;12(12):3315-3327.

doi: 10.1016/j.jaip.2024.08.033. Epub 2024 Aug 27.

[Long-Term Clinical and Sustained REMission in Severe Eosinophilic Asthma Treated With Mepolizumab: The REMI-M Study](#)

[Claudia Crimi¹](#), [Santi Nolasco²](#), [Alberto Noto³](#), [Angelantonio Maglio⁴](#), [Vitaliano Nicola Quaranta⁵](#), [Danilo Di Bona⁶](#), [Giulia Scioscia⁷](#), [Francesco Papia⁸](#), [Maria Filomena Caiaffa⁶](#), [Cecilia Calabrese⁹](#), [Maria D'Amato¹⁰](#), [Corrado Pelaia¹¹](#), [Raffaele Campisi¹²](#), [Carolina Vitale⁴](#), [Luigi Ciampo⁴](#), [Silvano Dragonieri⁵](#), [Elena Minenna⁶](#), [Federica Massaro⁹](#), [Lorena Gallotti¹⁰](#), [Luigi Macchia¹³](#), [Massimo Triggiani¹⁴](#), [Nicola Scichilone¹⁵](#), [Giuseppe Valenti⁸](#), [Girolamo Pelaia¹¹](#), [Maria Pia Foschino Barbaro⁷](#), [Giovanna Elisiana Carpagnano⁵](#), [Alessandro Vatrella⁴](#), [Nunzio Crimi¹⁶](#); [Southern Italy Network on Severe Asthma Therapy](#)

Collaborators, Affiliations Expand

- PMID: 39197750
- DOI: [10.1016/j.jaip.2024.08.033](https://doi.org/10.1016/j.jaip.2024.08.033)

Free article

Abstract

Background: Biological therapies, such as mepolizumab, have transformed the treatment of severe eosinophilic asthma. Although mepolizumab's short-term effectiveness is established, there is limited evidence on its ability to achieve long-term clinical remission.

Objective: To evaluate the long-term effectiveness and safety of mepolizumab, explore its potential to induce clinical and sustained remission, and identify baseline factors associated with the likelihood of achieving remission over 24 months.

Methods: The REMission in Severe Eosinophilic Asthma Treated with Mepolizumab (REMI-M) is a retrospective, real-world, multicenter study that analyzed 303 patients with severe eosinophilic asthma who received mepolizumab. Clinical, demographic, and safety data were collected at baseline, 3, 6, 12, and 24 months. The most commonly used definitions of clinical remission, which included no exacerbations, no oral corticosteroid (OCS) use, and good asthma control with or without assessment of lung function parameters, were assessed. Sustained remission was defined as reaching clinical remission at 12 months and maintaining it until the end of the 24-month period.

Results: Clinical remission rates ranged from 28.6% to 43.2% after 12 months and from 26.8% to 52.9% after 24 months based on the different remission definitions. The proportion of patients achieving sustained remission varied between 14.6% and 29%. Factors associated with the likelihood of achieving clinical remission included the presence of aspirin-exacerbated respiratory disease, better lung function at baseline, male sex, absence of anxiety/depression, gastroesophageal reflux disease, bronchiectasis, and reduced OCS consumption. Adverse events were infrequent.

Conclusions: This study demonstrates the real-world effectiveness of mepolizumab in achieving clinical remission and sustained remission in severe eosinophilic asthma over 24 months. The identification of distinct factors associated with the likelihood of achieving clinical remission emphasizes the importance of comprehensive management of comorbidities and timely identification of patients who may benefit from biologics.

Keywords: Anti-IL-5; Biologics; Eosinophils; Mepolizumab; Remission; Severe asthma; Severe eosinophilic asthma.

Copyright © 2024 The Authors. Published by Elsevier Inc. All rights reserved.

- [Cited by 1 article](#)

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

9

Pediatr Pulmonol

•

-
-

. 2024 Dec;59(12):3268-3277.

doi: 10.1002/ppul.27183. Epub 2024 Jul 23.

[Machine learning-enhanced HRCT analysis for diagnosis and severity assessment in pediatric asthma](#)

[Maria De Filippo](#)^{1,2}, [Salvatore Fasola](#)³, [Federica De Matteis](#)⁴, [Maria Sole Prevedoni Gorone](#)⁵, [Lorenzo Preda](#)^{4,5}, [Martina Votto](#)^{1,2}, [Velia Malizia](#)³, [Gian Luigi Marseglia](#)^{1,2}, [Stefania La Grutta](#)³, [Amelia Licari](#)^{1,2}

Affiliations Expand

- PMID: 39041906
- PMCID: [PMC11601025](#)
- DOI: [10.1002/ppul.27183](#)

Abstract

Objectives: Chest high-resolution computed tomography (HRCT) is conditionally recommended to rule out conditions that mimic or coexist with severe asthma in children. However, it may provide valuable insights into identifying structural airway changes in pediatric patients. This study aims to develop a machine learning-based chest HRCT image analysis model to aid pediatric pulmonologists in identifying features of severe asthma.

Methods: This retrospective case-control study compared children with severe asthma (as defined by ERS/ATS guidelines) to age- and sex-matched controls without asthma, using chest HRCT scans for detailed imaging analysis. Statistical analysis included classification trees, random forests, and conventional ROC analysis to identify the most significant imaging features that mark severe asthma from controls.

Results: Chest HRCT scans differentiated children with severe asthma from controls. Compared to controls (n = 21, mean age 11.4 years), children with severe asthma (n = 20, mean age 10.4 years) showed significantly greater bronchial thickening (BT) scores (p < 0.001), airway wall thickness percentage (AWT%, p < 0.001), bronchiectasis grading (BG) and bronchiectasis severity (BS) scores (p = 0.016), mucus plugging, and centrilobular emphysema (p = 0.009). Using AWT% as the predictor in conventional ROC analysis, an AWT% ≥ 38.6 emerged as the optimal classifier for discriminating severe asthmatics from controls, with 95% sensitivity, specificity, and overall accuracy.

Conclusion: Our study demonstrates the potential of machine learning-based analysis of chest HRCT scans to accurately identify features associated with severe

asthma in children, enhancing diagnostic evaluation and contributing to the development of more targeted treatment approaches.

Keywords: Children; artificial intelligence; chest high-resolution computed tomography; machine learning; severe asthma.

© 2024 The Author(s). Pediatric Pulmonology published by Wiley Periodicals LLC.

Conflict of interest statement

The authors declare that they have no conflicts of interest, financial or otherwise, relevant to this work.

- [28 references](#)
- [3 figures](#)

Supplementary info

MeSH terms, Grants and funding [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

10

Review

Am J Med Sci

-
-
-

. 2024 Dec;368(6):674-678.

doi: 10.1016/j.amjms.2024.07.023. Epub 2024 Jul 17.

[COPD overlap conditions: Clinical and therapeutic implications](#)

[Abdullah Jarrah](#)¹, [Mohammed T Awad](#)², [Cassandra Cramer-Bour](#)³, [Ayman O Soubani](#)³

Affiliations [Expand](#)

- PMID: 39029738
- DOI: [10.1016/j.amjms.2024.07.023](https://doi.org/10.1016/j.amjms.2024.07.023)

Abstract

Chronic Obstructive Pulmonary Disease (COPD) is a complex pulmonary condition characterized by chronic airflow limitation. Within the spectrum of COPD, distinct overlap conditions exist, including Asthma-COPD Overlap (ACO), COPD-Obstructive Sleep Apnea (COPD-OSA), Combined Pulmonary Fibrosis and Emphysema (CPFE), and Bronchiectasis-COPD Overlap (BCO). This review provides a comprehensive overview of the clinical and therapeutic implications of these conditions, highlighting the differences in complications compared with COPD alone in addition to the diagnostic challenges of identifying these conditions. Therapeutically tailored approaches are necessary for COPD overlap conditions considering the unique complications that may arise. Optimal pharmacological management, disease-specific interventions, and comprehensive patient-centered care are crucial components of treatment strategies. This review provides insights for healthcare professionals by enhancing their understanding and management of these conditions. This emphasizes the importance of accurate diagnosis and individualized treatment plans, considering the specific complications associated with each COPD overlap condition.

Keywords: Asthma; Asthma COPD overlap; COPD; Emphysema; OSA.

Copyright © 2024 Southern Society for Clinical Investigation. Published by Elsevier Inc. All rights reserved.

Conflict of interest statement

Declaration of competing interest No conflicts of interest or relationship with the industry to disclose by any of the authors. No funding or financial interests.

Supplementary info

Publication types, MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

11

Case Reports

J Asthma Allergy

-
-
-

. 2024 Nov 30:17:1239-1245.

doi: 10.2147/JAA.S492730. eCollection 2024.

[A Case Series of Patients Undergoing Bronchial Thermoplasty a Second Time for Severe Asthma](#)

[Chuan T Foo](#)^{1,2}, [David Langton](#)^{2,3}, [Francis Thien](#)^{1,2}

Affiliations Expand

- PMID: 39634379
- PMCID: [PMC11616413](#)
- DOI: [10.2147/JAA.S492730](#)

Abstract

Bronchial thermoplasty is a treatment option for patients with severe asthma. We report a case series of 6 patients who underwent bronchial thermoplasty on two separate occasions for poorly controlled asthma. The repeat procedures were well tolerated with no unexpected complications. One patient developed a focal area of mild bronchiectasis on imaging 6-months after repeat treatment, but this was not felt to be clinically relevant. Individual responses to repeat bronchial thermoplasty were varied, with some patients showing great improvement after treatment, whereas others did not. This series highlights the safety and feasibility of performing repeat ablation on previously ablated airways, as well as the potential clinical benefit in a select group of patients.

Keywords: Asthma; mechanism of action; pathophysiology; treatment failure.

© 2024 Foo et al.

Conflict of interest statement

C.F is the recipient of a Monash University post-graduate scholarship. D.L and F.T have no conflict of interest to report.

- [30 references](#)

Supplementary info

Publication typesExpand