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

1

Contemp Clin Trials

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. 2023 Jul 20;107303.

doi: 10.1016/j.cct.2023.107303. Online ahead of print.

Design and methods of a randomized trial testing advancing care for COPD in people living with HIV by implementing evidence-based management through proactive E-consults (ACHIEVE)

Jennifer Ives[1], Subarna Bagchi[2], Sherilynn Soo[3], Cera Barrow[4], Kathleen M Akgün[5], Kristine M Erlandson[6], Matthew Goetz[7], Matthew Griffith[8], Robert Gross[9], Todd Hulgan[10], Abeer Moanna[11], Guy W Soo Hoo[12], Amy Weintrob[13], Cherry Wongtrakool[14], Scott V Adams[15], George Sayre[16], Christian D Helfrich[17], David H Au[18], Kristina Crothers[19]

Affiliations expand

- PMID: 37481201

- DOI: 10.1016/j.cct.2023.107303

Abstract

Chronic obstructive pulmonary disease (COPD) is one of the most common comorbid diseases among aging people with HIV (PWH) and is often mismanaged. To address this gap, we are conducting the study, "Advancing care for COPD in people living with HIV by Implementing Evidence-based management through proactive E-consults (ACHIEVE)." This intervention optimizes COPD management by promoting effective, evidence-based care and de-implementing inappropriate therapies for COPD in PWH receiving care at Veteran Affairs (VA) medical centers. Study pulmonologists are proactively supporting ID providers managing a population of PWH who have COPD, offering real-time evidence-based recommendations tailored to each patient. We are leveraging VA clinical and informatics infrastructures to communicate recommendations between the study team and clinical providers through the electronic health record (EHR) as an E-consult. If effective, ACHIEVE could serve as a model of effective, efficient COPD management among PWH receiving care in VA. This paper outlines the rationale and methodology of the ACHIEVE trial, one of a series of studies funded by the National Heart, Lung, and Blood Institute (NHLBI) within the ImPlementation REsearCh to DEvelop Interventions for People Living with HIV (PRECluDE) consortium to study chronic disease comorbidities in HIV populations.

Keywords: E-consults; HIV; Randomized clinical trial; chronić obstructive pulmonary disease.

2
Review

Lancet

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. 2023 Jul 19;S0140-6736(23)01358-2.

doi: 10.1016/S0140-6736(23)01358-2. Online ahead of print.

Global access and patient safety in the transition to environmentally friendly respiratory inhalers: the Global Initiative for Asthma perspective

Mark L Levy[1], Eric D Bateman[2], Keith Allan[3], Leonard B Bacharier[4], Matteo Bonini[5], Louis-Philippe Boulet[6], Arnaud Bourdin[7], Chris Brightling[8], Guy Brusselle[9], Roland Buhl[10], Muhwa Jeremiah Chakaya[11], Alvaro A Cruz[12], Jeffrey Drazen[13], Francine M Ducharme[14], Liesbeth Duijts[15], Louise Fleming[16], Hiromasa Inoue[17], Fanny W S Ko[18], Jerry A Krishnan[19], Refiloe Masekela[20], Kevin Mortimer[21], Paulo Pitrez[22], Sundeep Salvi[23], Aziz Sheikh[24], Helen K Reddel[25], Arzu Yorgancıoğlu[26]

Affiliations expand

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No abstract available

Conflict of interest statement

Declaration of interests MLL has received payments from publishers Taylor Francis and from Class Publishing; consulting fees from Smart Respiratory, Respiri, Imperial College, AstraZeneca, Novartis, and Teva; speaker or writing fees from Chiesi, AstraZeneca, and Teva; honoraria for manuscript writing and educational events from Consorzio Futuro in Ricerca; fees for expert testimony from HM Coroner, Waltham Forrest, London; support to attend meetings from Teva; and has held leadership roles (unpaid) in GINA, NHS England, and UK All Party Parliamentary Advisory Group (Asthma). EDB has received consulting fees from AstraZeneca, Regeneron, and Sanofi; speaker fees from AstraZeneca, Boehringer Ingelheim, Cipla, Novartis, Regeneron, Orion, and Sanofi Aventis; support to attend meetings from Orion, Sanofi, AstraZeneca, and GINA; and has participated (unpaid) in a board for DSMB for PACE study in COPD. KA declares no competing interests. LBB has received grants from the National Heart, Lung, and Blood Institute and National Institute of Allergy and Infectious Diseases; book royalties from Elsevier; consulting fees from Sanofi, Regeneron, Genentech, GlaxoSmithKline, DBV technologies, Teva, Medscape, Kinaset, OM Pharma, AstraZeneca, and Recludix; speaker fees from Sanofi, Regeneron, and GlaxoSmithKline; payment for advisory board participation from DBV Technologies, AstraZeneca, and Vertex; has participated in American Academy of Allergy Asthma & Immunology (unpaid) and American Board of Allergy and Immunology (paid); and has received medical writing services from Sanofi/Regeneron. MB has received grants from

AstraZeneca and from GlaxoSmithKline; consulting fees from AstraZeneca, GlaxoSmithKline, and Sanofi; and speaker fees from AstraZeneca, Boehringer, Chiesi, GlaxoSmithKline, Menarini, Novartis, and Sanofi. L-PB has received grants from Amgen, AstraZeneca, GlaxoSmithKline, Merck, Novartis, and Sanofi-Regeneron; royalties for texts published by UptoDate and by Taylor and Francis; consulting fees from Astra Zeneca, Novartis, GlaxoSmithKline, Merck, and Sanofi-Regeneron; speaker fees from AstraZeneca, Covis, GlaxoSmithKline, Novartis, Merck, and Sanofi; and has participated (unpaid) in GINA as Chair of Board of Directors, Global Asthma Organisation (Interasma) as President, Canadian Thoracic Society Respiratory Guidelines Committee, and in Laval University as Chair on Knowledge Transfer, Prevention and Education in Respiratory and Cardiovascular Health. AB has received grants, consulting fees and speaker fees from AstraZeneca, Boehringer Ingelheim, Sanofi, Novartis, GlaxoSmithKline, and AB science; support to attend meetings from AstraZeneca, Boehringer Ingelheim, Sanofi, Novartis, GlaxoSmithKline, AB science, and Chiesi; and has participated in an advisory board for AB science. CB has received grants (paid to institution) from GlaxoSmithKline, AstraZeneca, Sanofi, Regeneron, Roche, Genentech, BI, Novartis, Chiesi, 4Dpharma, and Mologic; and has received consulting fees (paid to institution) from GlaxoSmithKline, AstraZeneca, Sanofi, Regeneron, Roche, Genentech, BI, Novartis, Chiesi, 4Dpharma, Mologic, and Areteia. GB has received speaker fees from AstraZeneca Boehringer Ingelheim, Chiesi, GlaxoSmithKline, MSD, Novartis, and Sanofi. RB has received grants (paid to institution) from Boehringer Ingelheim, GlaxoSmithKline, Novartis, and Roche; speaker fees from AstraZeneca, Berlin-Chemie, Boehringer Ingelheim, Chiesi, Cipla, GlaxoSmithKline, Novartis, Sanofi, Roche, and Teva; and has received payment for advisory board participation from AstraZeneca, Berlin-Chemie, Boehringer Ingelheim, Chiesi, Cipla, GlaxoSmithKline, Novartis, Sanofi, Roche, and Teva. AAC has received speaker fees from Chiesi, GlaxoSmithKline, Boehringer Ingelheim, Eurofarma, Abdi Ibrahim, Novartis, Sanofi, and AstraZeneca. JD has received editing fees from Cecil's Textbook of Medicine-Pulmonary and Critical Care, and has been a pro-bono board member of the Nantucket Cottage Hospital. FMD has received grants from Canadian Institutes of Health Research, Thorasys-Medteq, GlaxoSmithKline, Covis Pharma, Breathe, Canadian Lung Association, Children's Hospital Academic Medical Organisation, and Bank Scotia Foundation; consulting fees from Sanofi Regeneron, Ontario Lung Association, Covis Pharma, GlaxoSmithKline, FMSQ, AstraZeneca, Institut national d'excellence en santé et services sociaux, Quebec, and Canadian Thoracic Society; and speaker fees from Federation des Mds specialists du Québec, Jean-Coutu, Réseau Quebecois de l'enseignement en santé respiratoire, Teva, Thorasys, Association des Mds Omnipraticiens du Richelieu St-Laurent, Sanofi/Regeneron, and Covis Pharma. LD has received speaker fees (paid to institution) from AstraZeneca and British Thoracic Society; opponent's fees from Karolinska Institutet, University of Copenhagen, Barcelona Institute for Global Health; and grants (paid to institution) for CoKids Study (ZonMW, number 10150062010006, Stichting Vrienden van Sophia, and HZ2020: EUCAN-Connect grant agreement number 824989; ATHLETE, grant agreement number 874583; LIFECYCLE, grant agreement number 733206). LF has received grants from Asthma UK, National Institute of Health Research, and Asthma and Lung UK; consulting fees (paid to institution) from Sanofi, Regeneron, and AstraZeneca; and speaker fees (paid to institution) from Novartis and AstraZeneca. HI has received grants (paid to

institution) from Boehringer Ingelheim, GlaxoSmithKline, Kyorin, Omron, Ono, and Teijin-Pharma; speaker fees from AstraZeneca, Boehringer-Ingelheim, GlaxoSmithKline, Kyorin, Novartis, Ono, and Sanofi; and payment for advisory board participation from AstraZeneca, GlaxoSmithKline, Omron, and Sanofi. FWSK has received grants (paid to institution) from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline and Novartis; and support to attend meetings from Novartis and from Boehringer Ingelheim. JAK has received grants (paid to institution) from the National Heart, Lung, and Blood Institute, COPD Foundation, Regeneron, Sergey Brin Family Foundation, US Patient Centered Outcomes Research Institute, and American Lung Association; consulting fees from GlaxoSmithKline, AstraZeneca, CereVu Medical, Propeller and ResMed, and BData; speaker fees from University of Chicago, and from American Academy of Asthma, Allergy, and Immunology; support to attend meetings from Global Initiative for Asthma and from American Thoracic Society; and has participated in Respiratory Health Association, Global Initiative for Asthma, and COPD Foundation. RM has received speaker fees from AstraZeneca and Organon; payment for advisory board participation from AstraZeneca and Organon; and has participated (unpaid) in leadership roles within Global Asthma Network. KM has received payment for advisory board participation from AstraZeneca and GlaxoSmithKline. PP has received consulting fees from AstraZeneca, GlaxoSmithKline, Sanofi, Boehringer Ingelheim, and Novartis; support to attend meetings from AstraZeneca and Boehringer Ingelheim; payment for advisory board participation from AstraZeneca; and is an unpaid member of the Board of Directors for the Brazilian Severe Asthma Group. SS has received consulting fees (paid to institution) and speaker fees (paid to institution) from Cipla, India. AS has received support to attend meetings from GINA. HKR has received grants from AstraZeneca, GlaxoSmithKline, Novartis, and Perpetual Philanthropy; consulting fees from Novartis, AstraZeneca, and GlaxoSmithKline; speaker fees from Alkem, AstraZeneca, GlaxoSmithKline, Teva, Boehringer-Ingelheim, Sanofi, Getz, and Chiesi; payment for advisory board participation from AstraZeneca, GlaxoSmithKline, Novartis, Chiesi, and Sanofi; and has participated (unpaid) in Global Initiative for Asthma as Chair of Science Committee, and in National Asthma Council Australia's Guidelines Committee. AY has received consulting fees (paid to institution) from GSK, AstraZeneca, and Chiesi; speaker fees (paid to institution) from GlaxoSmithKline, AstraZeneca, Bilim, and Abdi Ibrahim; and support to attend meetings from GINA. MJC declares no competing interests.

supplementary info

Publication typesexpand

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3
Review

Disabil Rehabil

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. 2023 Jul 22;1-16.

doi: 10.1080/09638288.2023.2233899. Online ahead of print.

Effectiveness of mind-body exercises in chronic respiratory diseases: an overview of systematic reviews with meta-analyses

Alberto Marcos Heredia-Rizo[1,2,3], Javier Martinez-Calderon[1,3], Fernando Piña-Pozo[3,4], Paula González-García[1,2], Cristina García-Muñoz[3,5]

Affiliations expand

- PMID: 37480272

- DOI: 10.1080/09638288.2023.2233899

Abstract

Purpose: To gather evidence on the effectiveness and safety of qigong, tai chi, and yoga to modulate symptoms associated with chronic respiratory diseases.

Methods: A search of systematic reviews was conducted in CINHAL, Embase, PubMed, PsycINFO, SPORTDiscus, and the Cochrane Library from inception to November 2022. Systematic reviews with meta-analyses investigating physical and psychological measures were eligible. The methodological quality of systematic reviews (AMSTAR-2), the spin of information in abstracts, and the overlap of primary studies were explored.

Results: Twenty-seven systematic reviews involving 37 000 participants, 146 studies, and 150 meta-analyses were included. Reviews investigated asthma (n = 4) and chronic obstructive pulmonary disease (COPD) (n = 23). Most reviews discussed their findings

without considering the risk of bias of primary studies. The overlap ranged between slight (5%) and very high (35%). Yoga was better than control interventions to improve symptoms related with asthma. In adults with COPD, qigong improved dyspnoea, exercise endurance, lung function, and quality of life, while tai chi and yoga increased exercise endurance.

Conclusions: The impact of yoga on symptoms associated with asthma varied depending on the lung function parameter and the control group. Qigong, tai chi, and yoga could be effective to improve COPD-related symptoms, especially exercise endurance.IMPLICATIONS FOR REHABILITATIONQigong, tai chi, and yoga could be effective to improve symptoms associated with chronic obstructive pulmonary disease.Mind-body exercises promote self-care management and can be individually tailored.Due to no adverse effects, these interventions can be endorsed for rehabilitation as they appear to yield benefits.

Keywords: 10.17605/OSF.IO/DKG93; Asthma; chronic obstructive pulmonary disease; qigong; systematic review; tai chi; yoga.

4
Sci Rep

. 2023 Jul 21;13(1):11822.

doi: 10.1038/s41598-023-38714-5.

Lifestyle practices that reduce seasonal $PM_{2.5}$ exposure and their impact on COPD

Hajeong Kim[1,2], Jin-Young Huh[1,3], Geunjoo Na[4,5], Shinhee Park[6,7], Seung Won Ra[8], Sung-Yoon Kang[9], Ho Cheol Kim[1], Hwan-Cheol Kim[#,10], Sei Won Lee[#,11]

Affiliations expand

- PMID: 37479736

- DOI: 10.1038/s41598-023-38714-5

Abstract

Particulate matter (PM) is a major air pollutant that has led to global health concerns and can cause and exacerbate chronic obstructive pulmonary disease (COPD). We asked patients with COPD to complete a detailed questionnaire about their lifestyle practices to reduce $PM_{2.5}$ exposure and analyzed the relationship between ambient $PM_{2.5}$ concentrations and lifestyle practices. We prospectively enrolled 104 COPD patients from four hospitals in different areas of Korea. They completed detailed questionnaires twice (at enrollment and the end of the study) and Internet of Things-based sensors were installed in their homes to continuously measure $PM_{2.5}$ for 1 year. The relationship between $PM_{2.5}$ concentrations, lifestyle practices, and COPD exacerbations were analyzed in each season. The $PM_{2.5}$ concentration was higher outdoors than indoors in all seasons except summer, and the difference was largest in winter. The six lifestyle practices that significantly lowered the annual indoor $PM_{2.5}$ concentration compared with the outdoors. The higher the economic status and educational level of patients, the lower the indoor $PM_{2.5}$ concentration. Some lifestyle practices were associated with reduced small airway resistance, presented as R5-R20 determined by impulse oscillometry, and scores of the St. George's Respiratory Questionnaire. Some lifestyle practices are associated with reduced indoor $PM_{2.5}$ concentrations and can even affect clinical outcomes, including small airway resistance and quality of life of COPD patients.

- 43 references

supplementary info

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5
Am J Respir Crit Care Med
.
. 2023 Jul 21.

doi: 10.1164/rccm.202306-0957ED. Online ahead of print.

The Ongoing Quest for Predictive Biomarkers in COPD

Lucile Regard[1,2], Nicolas Roche[3,4], Pierre-Régis Burgel[5]

Affiliations expand

- PMID: 37478331

- DOI: 10.1164/rccm.202306-0957ED

No abstract available

6
Am J Respir Crit Care Med

. 2023 Jul 21.

doi: 10.1164/rccm.202306-1114ED. Online ahead of print.

Addressing the Use of the CAPTURE (A COPD Screening Tool) in COPD Treatment Decisions

Barbara P Yawn[1], Susan Murray[2]

Affiliations expand

- PMID: 37478328

- DOI: 10.1164/rccm.202306-1114ED

No abstract available

Keywords: COPD, treatment, screening, CAPTURE tool.

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From Conundrum to Cures, Pioneering Breakthroughs in Chronic Obstructive Pulmonary Disease Research: Introduction to an *AJRCCM* Special Issue

MeiLan K Han[1]

Affiliations expand

- PMID: 37478015

- DOI: 10.1164/rccm.202307-1194ED

No abstract available

8
BMC Health Serv Res

. 2023 Jul 20;23(1):777.

doi: 10.1186/s12913-023-09808-7.

Greater temporal regularity of primary care visits was associated with reduced hospitalizations and mortality, even after controlling for continuity of care

Maram Khazen[1,2], Wiessam Abu Ahmad[3], Faige Spolter[3], Avivit Golan-Cohen[4,5], Eugene Merzon[4,6], Ariel Israel[4,5], Shlomo Vinker[4,5], Adam J Rose[3]

Affiliations expand

- PMID: 37474968
- PMCID: PMC10360299
- DOI: 10.1186/s12913-023-09808-7

Abstract

Background: Previous studies have shown that more temporally regular primary care visits are associated with improved patient outcomes.

Objective: To examine the association of temporal regularity (TR) of primary care with hospitalizations and mortality in patients with chronic illnesses. Also, to identify threshold values for TR for predicting outcomes.

Design: Retrospective cohort study.

Participants: We used data from the electronic health record of a health maintenance organization in Israel to study primary care visits of 70,095 patients age 40 + with one of three chronic conditions (diabetes mellitus, heart failure, chronic obstructive pulmonary disease).

Main measures: We calculated TR for each patient during a two-year period (2016-2017), and divided patients into quintiles based on TR. Outcomes (hospitalization, death) were observed in 2018-2019. Covariates included the Bice-Boxerman continuity of care score, demographics, and comorbidities. We used multivariable logistic regression to examine TR's association with hospitalization and death, controlling for covariates.

Key results: Compared to patients receiving the most regular care, patients receiving less regular care had increased odds of hospitalization and mortality, with a dose-response curve observed across quintiles (p for linear trend < 0.001). For example, patients with the least regular care had an adjusted odds ratio of 1.40 for all-cause mortality, compared to patients with the most regular care. Analyses stratified by age, sex, ethnic group, area-level SES, and certain comorbid conditions did not show strong differential associations of TR across groups.

Conclusions: We found an association between more temporally regular care in antecedent years and reduced hospitalization and mortality of patients with chronic illness in subsequent years, after controlling for covariates. There was no clear threshold value for

temporal regularity; rather, more regular primary care appeared to be better across the entire range of the variable.

Keywords: Chronic disease care; Outcomes research; Primary care; Temporal regularity of care.

Conflict of interest statement

The authors declare no competing interests.

- 49 references
- 2 figures

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Grant supportexpand

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Editorial

Eur Respir J

. 2023 Jul 20;62(1):2300956.

doi: 10.1183/13993003.00956-2023. Print 2023 Jul.

Predicting steroid responsiveness using airway smooth muscle in COPD: a HISTORIC study

Janice M Leung[1,2], Don D Sin[3,2]

Affiliations expand

- PMID: 37474151

- DOI: 10.1183/13993003.00956-2023

No abstract available

Conflict of interest statement

Conflict of interest: D.D. Sin has received a stipend for giving talks on COPD from AstraZeneca, GlaxoSmithKline and Boehringer Ingelheim. J.M. Leung has no potential conflicts of interest to disclose.

Comment on

- Airway smooth muscle area to predict steroid responsiveness in COPD patients receiving triple therapy (HISTORIC): a randomised, placebo-controlled, double-blind, investigator-initiated trial.
  Stolz D, Papakonstantinou E, Pascarella M, Jahn K, Siebeneichler A, Darie AM, Herrmann MJ, Strobel W, Salina A, Grize L, Savic Prince S, Tamm M.Eur Respir J. 2023 Jul 20;62(1):2300218. doi: 10.1183/13993003.00218-2023. Print 2023 Jul.PMID: 37385657

10
Sci Rep
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2023 Jul 19;13(1):11654.

doi: 10.1038/s41598-023-38355-8.

Immune response to pertussis vaccine in COPD patients

E Feredj[1,2], A Wiedemann[3,4], C Krief[3,4], B Maitre[5,6], G Derumeaux[5], C Chouaid[6], P Le Corvoisier[7], C Lacabaratz[3,4], S Gallien[8,9], J D Lelièvre[#8,3,4], L Boyer[#3,5]

Affiliations expand

- PMID: 37468500
- PMCID: PMC10356756
- DOI: 10.1038/s41598-023-38355-8

Free PMC article

Abstract

Exacerbation triggered by respiratory infection is an important cause of morbidity and mortality in chronic obstructive pulmonary disease (COPD) patients. Strategies aiming to preventing infection may have significant public health impact. Our previous study demonstrated decreased immunological response to seasonal flu vaccination in COPD patients, questioning the efficiency of other vaccines in this group of patients. We performed a prospective, monocenter, longitudinal study that evaluated the humoral and cellular responses upon pertussis vaccination. We included 13 patients with stable COPD and 8 healthy volunteers. No difference in circulating B and T cell subsets at baseline was noted. Both groups presented similar levels of TFH, plasmablasts and pertussis specific antibodies induction after vaccination. Moreover, monitoring T cell immunity after ex-vivo peptide stimulation revealed equivalent induction of functional and specific CD4+ T cells (IFNγ, TNFα and IL-2-expressing T cells) in both groups. Our results highlight the immunological efficiency of pertussis vaccination in this particularly vulnerable population and challenge the concept that COPD patients are less responsive to all immunization

strategies. Healthcare providers should stress the necessity of decennial Tdap booster vaccination in COPD patients.

Conflict of interest statement

C.C has consultant arrangements and has received grants from Astra Zeneca, Boehringer Ingelheim, MSD, Pierre Fabre Oncology, Lilly, Roche, Bristol Myers Squibb, and Novartis. J.D.L has board membership with IVIR-AC Comitee WHO, Member of the French NITAG, Work package leader VRI (HIV vaccine-France), Work package leader EHVA project (HIV vaccine-EU), Work package leader Vaccelerate project (COVID19 vaccine-EU). The rest of the authors declare that they have no relevant conflicts of interest.

- 19 references
- 1 figure

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Editorial

N Engl J Med

. 2023 Jul 20;389(3):274-275.

doi: 10.1056/NEJMe2305752.

Biologics for COPD - Finally Here

Alvar Agusti[1]

Affiliations expand

- PMID: 37467502

- DOI: 10.1056/NEJMe2305752

No abstract available

supplementary info

Publication types, MeSH terms, Substancesexpand

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Review

J Med Internet Res

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. 2023 Jul 19;25:e41092.

doi: 10.2196/41092.

Video-Based Educational Interventions for Patients With Chronic Illnesses: Systematic Review

Nikita Deshpande[1], Meng Wu[2], Colleen Kelly[3], Nicole Woodrick[4], Debra A Werner[5], Anna Volerman[2], Valerie G Press[2]

Affiliations expand

- PMID: 37467015

- DOI: 10.2196/41092

Free article

Abstract

Background: With rising time constraints, health care professionals increasingly depend on technology to provide health advice and teach patients how to manage chronic disease. The effectiveness of video-based tools in improving knowledge, health behaviors, disease severity, and health care use for patients with major chronic illnesses is not well understood.

Objective: The aim of this study was to assess the current literature regarding the efficacy of video-based educational tools for patients in improving process and outcome measures across several chronic illnesses.

Methods: A systematic review was conducted using CINAHL and PubMed with predefined search terms. The search included studies published through October 2021. The eligible studies were intervention studies of video-based self-management patient education for an adult patient population with the following chronic health conditions: asthma, chronic kidney disease, chronic obstructive pulmonary disease, chronic pain syndromes, diabetes, heart failure, HIV infection, hypertension, inflammatory bowel disease, and rheumatologic disorders. The eligible papers underwent full extraction of study characteristics, study design, sample demographics, and results. Bias was assessed with the Cochrane risk-of-bias tools. Summary statistics were synthesized in Stata SE (StataCorp LLC). Data reporting was conducted per the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) checklist.

Results: Of the 112 studies fully extracted, 59 (52.7%) were deemed eligible for inclusion in this review. The majority of the included papers were superiority randomized controlled trials (RCTs; 39/59, 66%), with fewer pre-post studies (13/59, 22%) and noninferiority RCTs (7/59, 12%). The most represented conditions of interest were obstructive lung disease (18/59, 31%), diabetes (11/59, 19%), and heart failure (9/59, 15%). The plurality (28/59, 47%) of video-based interventions only occurred once and occurred alongside adjunct interventions that included printed materials, in-person counseling, and interactive modules. The most frequently studied outcomes were disease severity, health behavior, and patient knowledge. Video-based tools were the most effective in improving patient knowledge (30/40, 75%). Approximately half reported health behavior (21/38, 56%) and patient self-efficacy (12/23, 52%) outcomes were improved by video-based tools, and a

minority of health care use (11/28, 39%) and disease severity (23/69, 33%) outcomes were improved by video-based tools. In total, 48% (22/46) of the superiority and noninferiority RCTs and 54% (7/13) of the pre-post trials had moderate or high risk of bias.

Conclusions: There is robust evidence that video-based tools can improve patient knowledge across several chronic illnesses. These tools less consistently improve disease severity and health care use outcomes. Additional study is needed to identify features that maximize the efficacy of video-based interventions for patients across the spectrum of digital competencies to ensure optimized and equitable patient education and outcomes.

Keywords: chronic disease; health literacy; patient education; self-management; technology; video education; video-based interventions.

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Response to endobronchial valve treatment: it's all about the target lobe

Jorine E Hartman[1,2], Sharyn A Roodenburg[1,2], Marlies van Dijk[1,2], T David Koster[1,2], Karin Klooster[1,2], Dirk-Jan Slebos[1,2]

Affiliations expand

- PMID: 37465561
- PMCID: PMC10350677
- DOI: 10.1183/23120541.00155-2023

Free PMC article

Abstract

Background: Bronchoscopic lung volume reduction using endobronchial valves (EBV) has been shown to be beneficial for severe emphysema patients. The most important predictor of treatment response is absence of collateral ventilation between the treatment target and ipsilateral lobe. However, there are still a substantial number of nonresponders and it would be useful to improve the pre-treatment identification of responders. Presumably, predictors of response will be multifactorial, and therefore our aim was to explore whether we can identify response groups using a cluster analysis.

Methods: At baseline and 1 year follow-up, pulmonary function, exercise capacity and quality of life were measured. A quantitative chest computed tomography scan analysis was performed at baseline and 2-6 months follow-up. The cluster analysis was performed using a hierarchical agglomerative method.

Results: In total, 428 patients (69% female, mean±sd age 61±8 years, forced expiratory volume in 1 s 27±8% predicted, residual volume 254±50% pred) were included in our analysis. Three clusters were generated: one nonresponder cluster and two responder clusters. Despite solid technical procedures, the nonresponder cluster had significantly less clinical response after treatment compared to the other clusters. The nonresponder cluster was characterised by significantly less emphysematous destruction, less air trapping and a higher perfusion of the target lobe, and a more homogeneous distribution of emphysema and perfusion between the target and ipsilateral lobe.

Conclusions: We found that target lobe characteristics are the discriminators between responders and nonresponders, which underlines the importance of visual and quantitative assessment of the potential treatment target lobe when selecting patients for EBV treatment.

Conflict of interest statement

Conflict of interest: D-J. Slebos reports grants or contracts from PulmonX Corp., PneumRx/BTG/Boston Scientific, FreeFLowMedical, Nuvaira, PulmAir, GALA, CSA Medical and Apreo, outside the submitted work; consulting fees from PulmonX Corp., PneumRx/BTG/Boston Scientific, Nuvaira and Apreo, outside the submitted work; payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from PulmonX Corp., PneumRx/BTG/Boston Scientific and Nuvaira, outside the submitted work; support for attending meetings and/or travel from PulmonX Corp., PneumRx/BTG/Boston Scientific and Nuvaira, outside the submitted work; and his institution is in receipt of study material/devises from PulmonX Corp., PneumRx/BTG/Boston Scientific, FreeFLowMedical, Nuvaira, PulmAir, GALA and CSA Medical, outside the submitted work. The remaining authors have nothing to disclose.

- 40 references
- 2 figures

14
Review

J Clin Invest

. 2023 Jul 17;133(14):e170498.

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The lung mesenchyme in development, regeneration, and fibrosis

Elie El Agha[1,2,3], Victor J Thannickal[4,5]

Affiliations expand

- PMID: 37463440
- PMCID: PMC10348757
- DOI: 10.1172/JCI170498

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Abstract

Mesenchymal cells are uniquely located at the interface between the epithelial lining and the stroma, allowing them to act as a signaling hub among diverse cellular compartments of the lung. During embryonic and postnatal lung development, mesenchyme-derived signals instruct epithelial budding, branching morphogenesis, and subsequent structural and functional maturation. Later during adult life, the mesenchyme plays divergent roles wherein its balanced activation promotes epithelial repair after injury while its aberrant activation can lead to pathological remodeling and fibrosis that are associated with multiple chronic pulmonary diseases, including bronchopulmonary dysplasia, idiopathic pulmonary fibrosis, and chronic obstructive pulmonary disease. In this Review, we discuss the involvement of the lung mesenchyme in various morphogenic, neomorphogenic, and dysmorphogenic aspects of lung biology and health, with special emphasis on lung fibroblast subsets and smooth muscle cells, intercellular communication, and intrinsic mesenchymal mechanisms that drive such physiological and pathophysiological events throughout development, homeostasis, injury repair, regeneration, and aging.

Conflict of interest statement

Conflict of interest: The authors have declared that no conflict of interest exists.

- 163 references
- 2 figures

supplementary info

Publication types, MeSH terms, Grant supportexpand

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15
Intensive Care Med

. 2023 Jul 18.

doi: 10.1007/s00134-023-07166-w. Online ahead of print.

Real-world evidence challenges controlled hypoxemia guidelines for critically ill patients with chronic obstructive pulmonary disease

Fang Qian[1], Willem van den Boom[2], Kay Choong See[3]

Affiliations expand

- PMID: 37462696

- DOI: 10.1007/s00134-023-07166-w

No abstract available

- 5 references

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Publication types, Grant supportexpand

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16
Am J Physiol Lung Cell Mol Physiol
.
. 2023 Jul 18.

doi: 10.1152/ajplung.00125.2023. Online ahead of print.

Obesity impacts hypoxia adaptation of the lung

Sophia Pankoke[1], Theresa Schweitzer[2], Rolf Bikker[3], Andreas Pich[2], Christiane Pfarrer[4], Christian Mühlfeld[1], Julia Schipke[1]

Affiliations expand

- PMID: 37461840

- DOI: 10.1152/ajplung.00125.2023

Abstract

Obesity is mostly associated with adverse health consequences, but may also elicit favorable effects under chronic conditions. This "obesity paradox" is under debate for pulmonary diseases. Since confounding factors complicate conclusions from human studies, this study utilized a controlled animal model combining diet-induced obesity and chronic hypoxia as model for pulmonary hypertension and COPD. Male C57BL/6 mice were fed control or high fat diet for 30 weeks, half of the animals were exposed to chronic hypoxia (13% O_2) for 3 weeks. Hypoxia induced right ventricular hypertrophy, thickening of pulmonary arterial and capillary walls, higher lung volumes, and increased hemoglobin concentrations irrespective of the body weight. In contrast, lung proteomes differed substantially between lean and obese-hypoxic mice. Many of the observed changes were linked to vascular and extracellular matrix (ECM) proteins. In lean-hypoxic animals, circulating platelets were reduced and abundances of various clotting-related proteins were altered, indicating a hypercoagulable phenotype. Moreover, the septal ECM composition was changed, and airspaces were significantly distended pointing to lung hyperinflation. These differences were mostly absent in the obese-hypoxic group. However, the obesity-hypoxia-combination induced the lowest blood CO_2 concentrations, indicating hyperventilation for sufficient oxygen supply. Moreover, endothelial surface areas were increased in obese-hypoxic mice. Thus, obesity exerts differential effects on lung

adaptation to hypoxia, which paradoxically include adverse, but also rather protective changes. These differences have a molecular basis in the lung proteome, and may influence pathogenesis of lung diseases. This should be taken into account for future individualized prevention and therapy.

Keywords: COPD; lung function; obesity paradox; proteome analysis; pulmonary hypertension.

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17

Observational Study

BMC Pulm Med

. 2023 Jul 17;23(1):263.

doi: 10.1186/s12890-023-02557-7.

Prognostic value of the post-exercise heart rate recovery and BHDE-index in chronic obstructive pulmonary disease

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Affiliations expand

- PMID: 37461073
- PMCID: PMC10353238
- DOI: 10.1186/s12890-023-02557-7

Free PMC article

Abstract

Background: The BODE index, consisting of body mass index (B), airflow obstruction (O), dyspnea score (D), and exercise capacity (E), can predict outcomes in COPD. However, when spirometry was restricted to prevent cross-infection such as COVID-19 pandemic, a modified index would be needed. Because cardiovascular dysfunction is associated with poor clinical outcomes in COPD, we conducted a novel BHDE-index by replacing spirometry with post-exercise heart rate recovery (HRR, H) and evaluated its predictive performance in this observational study.

Methods: From January 2019 to December 2019, enrolled patients were analyzed as a derivation cohort for the setup of the model. This model was verified in another group of patients generated between January 2020 and December 2020, as the validation cohort. The post exercise HRR was defined as the difference of heart rate immediately after and 1 min after test cessation.

Results: A total of 447 patients with COPD were enrolled. Patients with abnormal HRR were older, with more severe airway obstruction, severe airway symptoms, faster resting heart rate, shorter 6-min walk distance and higher frequency of severe acute exacerbation in previous one year. The prediction performance of the BHDE-index for one-year severe COPD exacerbation was similar to that of the BODE-index in both the derivation and validation groups [area under the receiver operating characteristic curve (AUROC) 0.76 vs. 0.75, p = 0.369; AUROC 0.74 vs. 0.79, p = 0.05]. The prediction performance for 1 year mortality was also similar between BHDE-index and BODE-index in both cohorts [AUROC 0.80 vs. 0.77, p = 0.564; 0.76 vs. 0.70, p = 0.234]. Univariate and multivariate analyses also showed that the BHDE-index was an independent and important predictor of annual severe COPD exacerbation in the derivation and validation cohorts.

Conclusions: The BHDE-index is a good and easy-to-perform prediction model for the risk of severe acute exacerbation and 1-year mortality in COPD wherever spirometry results are unavailable.

Keywords: Chronic obstructive pulmonary disease; Heart rate recovery; Pulmonary function; Pulmonary rehabilitation.

Conflict of interest statement

The authors declare that they have no competing interests.

- 25 references
- 4 figures

supplementary info

Publication types, MeSH terms, Grant supportexpand

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18
Am J Respir Crit Care Med
.
. 2023 Jul 17.

doi: 10.1164/rccm.202211-2166OC. Online ahead of print.

Lung Function Trajectories and Associated Mortality Among Adults with and without Airway Obstruction

Helena Backman[1], Anders Blomberg[2], Anders Lundquist[3], Viktor Strandkvist[4], Sami Sawalha[5], Ulf Nilsson[6], Jonas Eriksson-Ström[7], Linnea Hedman[8], Caroline Stridsman[9], Eva Rönmark[10], Anne Lindberg[11]

Affiliations expand

- PMID: 37460250

- DOI: 10.1164/rccm.202211-2166OC

Abstract

Rationale: Spirometry is essential for diagnosis and assessment of prognosis in COPD.

Objectives: To identify FEV_1 trajectories and their determinants, based on annual spirometry measurements among individuals with and without airway obstruction. Furthermore, to assess mortality in relation to trajectories.

Methods: In 2002-04, individuals with airway obstruction (AO) (FEV_1/VC<0.70, n=993) and age- and sex-matched non-obstructive (NO) referents were recruited from population-based cohorts. Annual spirometries until 2014 were utilized in joint-survival Latent Class Mixed Models to identify lung function trajectories. Mortality data were collected during 15 years of follow-up.

Results: Three trajectories were identified among the AO-cases and two among the NO referents. Trajectory membership was driven by baseline FEV_1%predicted (%pred) in both groups and additionaly, pack-years in AO and current smoking in NO. Longitudinal FEV_1%pred level depended on baseline FEV_1%pred, pack-years and obesity. The trajectories were distributed: 79.6% $T1_{AO}$ *FEV_1-high with normal decline*, 12.8% $T2_{AO}$ *FEV_1-high with rapid decline*, and 7.7% $T3_{AO}$ *FEV1-low with normal decline* (mean 27, 72 and 26 mL/year) among AO-individuals, and 96.7% $T1_{NO}$ *FEV_1-high with normal decline* and 3.3% $T2_{NO}$ *FEV_1-high with rapid decline* (mean 34 and 173 mL/year) among referents. Hazard for death was increased for $T2_{AO}$ (HR1.56) and $T3_{AO}$ (HR3.45) vs. $T1_{AO}$, and for $T2_{NO}$ (HR2.99) vs. $T1_{NO}$.

Conclusions: Three different FEV_1 trajectories were identified among those with airway obstruction and two among the referents, with different outcomes in terms of FEV_1-decline and mortality. The FEV_1 trajectories among airway obstructive and the relationship between low FVC and trajectory outcome are of particular clinical interest.

Keywords: COPD; FEV1; Natural history; Prognosis.

19
Am J Respir Crit Care Med

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doi: 10.1164/rccm.202307-1167ED. Online ahead of print.

Meeting Unmet Needs in COPD Diagnosis and Treatment in Low- and Middle-Income Countries

Obianuju B Ozoh[1], Tochukwu Ayo-Olagunju[2], Kevin Mortimer[3]

Affiliations expand

- PMID: 37459643

- DOI: 10.1164/rccm.202307-1167ED

No abstract available

20
BJPsych Open

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Comparison of outcomes for patients with and without a serious mental illness presenting to hospital for chronic obstruction pulmonary disease: retrospective observational study using administrative data

Sara Goldman[1], Anastasia Saoulidi[1], Sridevi Kalidindi[2], Eugenia Kravariti[1], Fiona Gaughran[3], Tim W R Briggs[4], William K Gray[5]

Affiliations expand

- PMID: 37458249

- DOI: 10.1192/bjo.2023.522

Free article

Abstract

Background: There are few data on the profile of those with serious mental illness (SMI) admitted to hospital for physical health reasons.

Aims: To compare outcomes for patients with and without an SMI admitted to hospital in England where the primary reason for admission was chronic obstructive pulmonary disease (COPD).

Method: This was a retrospective, observational analysis of the English Hospital Episodes Statistics data-set for the period from 1 April 2018 to 31 March 2019, for patients aged 18-74 years with COPD as the dominant reason for admission. Patient with an SMI (psychosis spectrum disorder, bipolar disorder) were identified.

Results: Data were available for 54 578 patients, of whom 2096 (3.8%) had an SMI. Patients with an SMI were younger, more likely to be female and more likely to live in deprived areas than those without an SMI. The burden of comorbidity was similar between the two groups. After adjusting for covariates, SMI was associated with significantly greater risk of length of stay than the median (odds ratio 1.24, 95% CI 1.12-1.37, $P \leq 0.001$) and with 30-day emergency readmission (odds ratio 1.51, 95% confidence interval 1.34-1.69, $P \leq 0.001$) but not with in-hospital mortality.

Conclusion: Clinicians should be aware of the potential for poorer outcomes in patients with an SMI even when the SMI is not the primary reason for admission. Collaborative

working across mental and physical healthcare provision may facilitate improved outcomes for people with SMI.

Keywords: Chronic obstructive pulmonary disease; bipolar disorder; mental illness; psychosis; schizophrenia.

21
Interdiscip Cardiovasc Thorac Surg
. 2023 Jul 19;37(1):ivad111.

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Donors in lung transplantation: does age matter?

Charlotte Ponte[1,2,3], Omar Alkhatiri[1,3], Anne Olland[1,2,3], Pierre-Emmanuel Falcoz[1,2,3]

Affiliations expand

- PMID: 37421406

- DOI: 10.1093/icvts/ivad111

Free article

Abstract

A best-evidence topic was written according to a structured protocol. The question addressed was the following: in patient undergoing lung transplantation, are lungs from donors of age >60 years old (yo) associated with equivalent outcomes-including primary graft dysfunction, respiratory function and survival-than lungs from donors ≤60yo?

Altogether, >200 papers were found using the reported search, of which 12 represented the best evidence to answer the clinical question. The authors, journals, dates, country of publication, patients group studied, study type, relevant outcomes, and results of these papers were tabulated. Amongst the 12 papers reviewed, survival results were different depending on whether donor age was analysed raw or adjusted for recipients' age and initial diagnosis. Indeed, recipients with interstitial lung disease (ILD), pulmonary hypertension or cystic fibrosis (CF) had significantly inferior overall survival when receiving grafts from older donors. When older grafts are allocated to younger donors, a significant decrease in survival has been noticed in the case of single lung transplantation. In addition, 3 papers showed worse results regarding peak forced expiratory volume in 1 second (FEV1) in patients receiving older organs, and 4 showed comparable primary graft dysfunction incidence rates. We conclude that when carefully assessed and allocated to the recipient who could benefit most from the transplant (e.g., a patient with a diagnosis of chronic obstructive pulmonary disease (COPD), who would not require a prolonged cardiopulmonary bypass (CPB)), lung grafts from donors of >60yo offer comparable results to younger donors.

Keywords: Donors >60 years old; Lung transplantation; Outcomes; Respiratory function; Survival.

22
Eur Respir J

. 2023 Jul 20;62(1):2300463.

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Mechanisms of hypoxaemia in severe pulmonary hypertension associated with COPD

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Affiliations expand

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- PMCID: PMC10356966
- DOI: 10.1183/13993003.00463-2023

Free PMC article

Abstract

Severe hypoxaemia, characteristic of COPD with severe pulmonary hypertension, is due to a combination of greater ventilation–perfusion mismatch, increased intrapulmonary shunt and reduced P_{vO_2}, with negligible hypoxic pulmonary vasoconstriction regulation https://bit.ly/3Wnzpik

Conflict of interest statement

Conflict of interest: L. Piccari reports grants and lecture honoraria from Janssen and Ferrer, participation on advisory boards with Janssen, Ferrer and United Therapeutics, and travel support from Janssen, Ferrer and MSD, outside the submitted work. I. Blanco reports lecture honoraria from Janssen, MSD and Ferrer, outside the submitted work. Y. Torralba reports lecture honoraria from TEVA, outside the submitted work. F. Burgos reports consulting fees for participation in a scientific advisory board for Medical Graphics Diagnostics, outside the submitted work. R. Rodríguez-Roisín reports grants from Chiesi Spain, outside the submitted work. J.A. Barberà reports consulting fees from Merck Sharp & Dome, Janssen-Cilag and Acceleron Pharma, lecture honoraria from Ferrer International, Janssen-Cilag and Merck Sharp & Dome, and travel support from Merck Sharp & Dome and Janssen-Cilag, outside the submitted work. All other authors have nothing to disclose.

- 15 references
- 1 figure

supplementary info

23
Eur Respir J
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doi: 10.1183/13993003.00218-2023. Print 2023 Jul.

Airway smooth muscle area to predict steroid responsiveness in COPD patients receiving triple therapy (HISTORIC): a randomised, placebo-controlled, double-blind, investigator-initiated trial

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Affiliations expand

- PMID: 37385657

- DOI: 10.1183/13993003.00218-2023

Abstract

Background: Although inhaled corticosteroids (ICS) are highly effective in asthma, they provide significant, but modest, clinical benefit in COPD. Here, we tested the hypothesis

that high bronchial airway smooth muscle cell (ASMC) area in COPD is associated with ICS responsiveness.

Methods: In this investigator-initiated and -driven, double-blind, randomised, placebo-controlled trial (HISTORIC), 190 COPD patients, Global Initiative for Chronic Obstructive Lung Disease stage B-D, underwent bronchoscopy with endobronchial biopsy. Patients were divided into groups A and B, with high ASMC area (HASMC: >20% of the bronchial tissue area) and low ASMC area (LASMC: ≤20% of the bronchial tissue area), respectively, and followed a run-in period of 6 weeks on open-label triple inhaled therapy with aclidinium (ACL)/formoterol (FOR)/budesonide (BUD) (400/12/400 µg twice daily). Subsequently, patients were randomised to receive either ACL/FOR/BUD or ACL/FOR/placebo and followed for 12 months. The primary end-point of the study was the difference in post-bronchodilator forced expiratory volume in 1 s (FEV_1) over 12 months between patients with LASMC and HASMC receiving or not receiving ICS.

Results: In patients with LASMC, ACL/FOR/BUD did not significantly improve FEV_1 over 12 months, as compared to ACL/FOR/placebo (p=0.675). However, in patients with HASMC, ACL/FOR/BUD significantly improved FEV_1, as compared to ACL/FOR/placebo (p=0.020). Over 12 months, the difference of FEV_1 change between the ACL/FOR/BUD group and the ACL/FOR/placebo group was 50.6 $mL{\cdot}year^{-1}$ within the group of patients with LASMC and 183.0 $mL{\cdot}year^{-1}$ within the group of patients with HASMC.

Conclusion: COPD patients with HASMC respond better to ICS than patients with LASMC, suggesting that this type of histological analysis may predict ICS responsiveness in COPD patients receiving triple therapy.

Conflict of interest statement

Conflict of interest: D. Stolz reports support for the present manuscript from AstraZeneca (unrestricted grant) and University Hospital Basel; outside the submitted work, D. Stolz reports lecture honoraria from CSL Behring, Berlin-Chemie Menarini, Novartis, GlaxoSmithKline, AstraZeneca, Vifor, Merck, Chiesi and Sanofi, and advisory board membership with GlaxoSmithKline and CSL Behring. A.M. Darie reports grants from University Hospital Basel, lecture honoraria from AstraZeneca and GSK, travel support from OrPha Swiss and Janssen, and advisory board participation with Gebro Pharma and MSD, outside the submitted work. M.J. Herrmann reports lecture honoraria from GSK and OM Pharma, travel support from Sanofi, and advisory board participation with OM Pharma, outside the submitted work. All other authors have no potential conflicts of interest to disclose.

Comment in

- Predicting steroid responsiveness using airway smooth muscle in COPD: a HISTORIC study.
Leung JM, Sin DD.Eur Respir J. 2023 Jul 20;62(1):2300956. doi: 10.1183/13993003.00956-2023. Print 2023 Jul.PMID: 37474151 No abstract available.

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24
Clinical Trial

N Engl J Med

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. 2023 Jul 20;389(3):205-214.

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Dupilumab for COPD with Type 2 Inflammation Indicated by Eosinophil Counts

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Collaborators, Affiliations expand

- PMID: 37272521

- DOI: 10.1056/NEJMoa2303951

Abstract

Background: In some patients with chronic obstructive pulmonary disease (COPD), type 2 inflammation may increase exacerbation risk and may be indicated by elevated blood eosinophil counts. Dupilumab, a fully human monoclonal antibody, blocks the shared receptor component for interleukin-4 and interleukin-13, key drivers of type 2 inflammation.

Methods: In a phase 3, double-blind, randomized trial, we assigned patients with COPD who had a blood eosinophil count of at least 300 per microliter and an elevated exacerbation risk despite the use of standard triple therapy to receive dupilumab (300 mg) or placebo subcutaneously once every 2 weeks. The primary end point was the annualized rate of moderate or severe exacerbations of COPD. Key secondary and other end points that were corrected for multiplicity were the change in the prebronchodilator forced expiratory volume in 1 second (FEV_1) and in the scores on the St. George's Respiratory Questionnaire (SGRQ; range, 0 to 100, with lower scores indicating a better quality of life) and the Evaluating Respiratory Symptoms in COPD (E-RS-COPD; range, 0 to 40, with lower scores indicating less severe symptoms).

Results: A total of 939 patients underwent randomization: 468 to the dupilumab group and 471 to the placebo group. The annualized rate of moderate or severe exacerbations was 0.78 (95% confidence interval [CI], 0.64 to 0.93) with dupilumab and 1.10 (95% CI, 0.93 to 1.30) with placebo (rate ratio, 0.70; 95% CI, 0.58 to 0.86; P<0.001). The prebronchodilator FEV_1 increased from baseline to week 12 by a least-squares (LS) mean of 160 ml (95% CI, 126 to 195) with dupilumab and 77 ml (95% CI, 42 to 112) with placebo (LS mean difference, 83 ml; 95% CI, 42 to 125; P<0.001), a difference that was sustained through week 52. At week 52, the SGRQ score had improved by an LS mean of -9.7 (95% CI, -11.3 to -8.1) with dupilumab and -6.4 (95% CI, -8.0 to -4.8) with placebo (LS mean difference, -3.4; 95% CI, -5.5 to -1.3; P = 0.002). The E-RS-COPD score at week 52 had improved by an LS mean of -2.7 (95% CI, -3.2 to -2.2) with dupilumab and -1.6 (95% CI, -2.1 to -1.1) with placebo (LS mean difference, -1.1; 95% CI, -1.8 to -0.4; P = 0.001). The numbers of patients with adverse events that led to discontinuation of dupilumab or placebo, serious adverse events, and adverse events that led to death were balanced in the two groups.

Conclusions: Among patients with COPD who had type 2 inflammation as indicated by elevated blood eosinophil counts, those who received dupilumab had fewer exacerbations, better lung function and quality of life, and less severe respiratory symptoms than those who received placebo. (Funded by Sanofi and Regeneron Pharmaceuticals; BOREAS ClinicalTrials.gov number, NCT03930732.).

- Cited by 1 article

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

1
J Gerontol A Biol Sci Med Sci
.
. 2023 Jul 19;glad172.

doi: 10.1093/gerona/glad172. Online ahead of print.

Association of a blood-based aging biomarker index with death and chronic disease: Cardiovascular Health Study

Xiao Zhang[1,2], Jason L Sanders[3], Robert M Boudreau[1], Alice M Arnold[4], Jamie N Justice[5], Mark A Espeland[5], George A Kuchel[6], Nir Barzilai[7], Lewis H Kuller[1], Oscar L Lopez[8], Stephen B Kritchevsky[5], Anne B Newman[1]

Affiliations expand

- PMID: 37464278

- DOI: 10.1093/gerona/glad172

Abstract

Background: A goal of gerontology is to discover phenotypes that reflect biological aging distinct from disease pathogenesis. Biomarkers that are strongly associated with mortality could be used to define such a phenotype. However, the relation of such an index with multiple chronic conditions warrants further exploration.

Methods: A Biomarker Index (BI) was constructed in the Cardiovascular Health Study (N=3197), with a mean age of 74 years. The BI incorporated circulating levels of new biomarkers, including insulin-like growth factor-1, interleukin-6, amino-terminal pro-B-type natriuretic peptide, cystatin-C, C-reactive protein, tumor necrosis factor-alpha soluble receptor 1, fasting insulin, and fasting glucose, and was built based on their relationships with mortality. Cox proportional hazards models predicting a composite of death and chronic disease involving cardiovascular disease, dementia, and cancer were calculated with 6 years of follow-up.

Results: The hazard ratio (HR, 95% CI) for the composite outcome of death or chronic disease per category of BI was 1.65 (1.52, 1.80) and 1.75 (1.58, 1.94) in women and men, respectively. The HR (95% CI) per 5 years of age was 1.57 (1.48, 1.67) and 1.55 (1.44, 1.67) in women and men, respectively. Moreover, BI could attenuate the effect of age on the composite outcome by 16.7% and 22.0% in women and men, respectively.

Conclusions: BI was significantly and independently associated with a composite outcome of death and chronic disease, and attenuated the effect of age. The BI that is composed of plasma biomarkers may be a practical intermediate phenotype for interventions aiming to modify the course of aging.

Keywords: aging; biomarker; multimorbidity.

. 2023 Jul 17;23(1):760.

doi: 10.1186/s12913-023-09773-1.

A multimorbidity model for estimating health outcomes from the syndemic of injection drug use and associated infections in the United States

John J Chiosi[1,2], Peter P Mueller[3], Jagpreet Chhatwal[4,3], Andrea L Ciaranello[5,4]

Affiliations expand

- PMID: 37461007
- PMCID: PMC10353126
- DOI: 10.1186/s12913-023-09773-1

Free PMC article

Abstract

Background: Fatal drug overdoses and serious injection-related infections are rising in the US. Multiple concurrent infections in people who inject drugs (PWID) exacerbate poor health outcomes, but little is known about how the synergy among infections compounds clinical outcomes and costs. Injection drug use (IDU) converges multiple epidemics into a syndemic in the US, including opioid use and HIV. Estimated rates of new injection-related infections in the US are limited due to widely varying estimates of the number of PWID in the US, and in the absence of clinical trials and nationally representative longitudinal observational studies of PWID, simulation models provide important insights to policymakers for informed decisions.

Methods: We developed and validated a MultimorbiditY model to Reduce Infections Associated with Drug use (MYRIAD). This microsimulation model of drug use and associated infections (HIV, hepatitis C virus [HCV], and severe bacterial infections) uses inputs derived from published data to estimate national level trends in the US. We used Latin hypercube sampling to calibrate model output against published data from 2015 to 2019 for fatal opioid overdose rates. We internally validated the model for HIV and HCV incidence and bacterial infection hospitalization rates among PWID. We identified best fitting parameter sets that met pre-established goodness-of-fit targets using the Pearson's

chi-square test. We externally validated the model by comparing model output to published fatal opioid overdose rates from 2020.

Results: Out of 100 sample parameter sets for opioid use, the model produced 3 sets with well-fitting results to key calibration targets for fatal opioid overdose rates with Pearson's chi-square test ranging from 1.56E-5 to 2.65E-5, and 2 sets that met validation targets. The model produced well-fitting results within validation targets for HIV and HCV incidence and serious bacterial infection hospitalization rates. From 2015 to 2019, the model estimated 120,000 injection-related overdose deaths, 17,000 new HIV infections, and 144,000 new HCV infections among PWID.

Conclusions: This multimorbidity microsimulation model, populated with data from national surveillance data and published literature, accurately replicated fatal opioid overdose, incidence of HIV and HCV, and serious bacterial infections hospitalization rates. The MYRIAD model of IDU could be an important tool to assess clinical and economic outcomes related to IDU behavior and infections with serious morbidity and mortality for PWID.

Keywords: Bacterial Infections; Drug overdose; Endocarditis; HIV; Hepatitis C; Injection drug use; Opioid use disorder; People who inject drugs; Serious injection related infections; Syndemic.

Conflict of interest statement

The authors declare no competing interests.

- 38 references
- 2 figures

supplementary info

MeSH terms, Substances, Grant supportexpand

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3
Eur J Cardiovasc Nurs
. 2023 Jul 19;22(5):529-536.

doi: 10.1093/eurjcn/zvac081.

Cumulative complexity: a qualitative analysis of patients' experiences of living with heart failure with preserved ejection fraction

Faye Forsyth[1], Thomas Blakeman[2], Jenni Burt[3], Carolyn A Chew-Graham[4], Muhammad Hossain[5], Jonathan Mant[1], John Sharpley[6], Emma Sowden[7], Christi Deaton[1]

Affiliations expand

- PMID: 36073202

- DOI: 10.1093/eurjcn/zvac081

Abstract

Aims: To investigate how heart failure with preserved ejection fraction (HFpEF), within the context of limited clinical services, impacts patients' lives.

Methods and results: Secondary thematic analysis informed by the cumulative complexity model (CCM), of interview transcripts from 77 people diagnosed with HFpEF and their carers. Four themes corresponding to the core concepts of workload, capacity, access, and outcome described in the CCM were generated. Theme 1: Shouldering a heavy workload described the many tasks expected of people living with HFpEF. Theme 2: The multiple threats to capacity described how patients and carers strived to engage with this work, but were often faced with multiple threats such as symptoms and mobility limitations. Deficient illness identity (Theme 3) reflects how HFpEF either was not recognized or was perceived as a more benign form of HF and therefore afforded less importance or priority. These themes contributed to a range of negative physical, social, and psychological outcomes and the perception of loss of control described in Theme 4: Spiraling complexity.

Conclusions: The constellation of HFpEF, multi-morbidity, and ageing creates many demands that people with HFpEF are expected to manage. Concurrently, the same

syndromes threaten their ability to physically enact this work. Patients' recollections of their interactions with health professionals suggest that there is a widespread misunderstanding of HFpEF, which can prohibit access to care that could potentially reduce or prevent deterioration.

Keywords: HFpEF; Health inequality; Heart Failure; Older adults; Self-care.

Conflict of interest statement

Conflicts of interest: J.M. has done consultancy work for BMS/Pfizer and Omron. C.D. has consulted for Astra Zeneca. All other authors declare no conflicts of interest.

supplementary info

MeSH terms, Grant supportexpand

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

1
Respir Med

. 2023 Jul 20;107365.

doi: 10.1016/j.rmed.2023.107365. Online ahead of print.

Asthma exacerbations in New Zealand 2010-2019: A national population-based study

Amy Hai Yan Chan[1], Andrew Tomlin[2], Kebede Beyene[3], Jeff Harrison[2]

Affiliations expand

- PMID: 37481169

- DOI: 10.1016/j.rmed.2023.107365

Abstract

Introduction: Asthma is one of the most common long-term conditions in the world, with New Zealand (NZ) having one of the highest rates of asthma symptoms. Despite the significant burden of asthma in NZ, there is a lack of data on asthma exacerbation rates in NZ and how these have varied over time. This study is a national population-based study of asthma exacerbation rates in NZ between 2010 and 2019, and explores how these rates vary amongst different demographic groups.

Methods: A retrospective population-based observational cohort study covering the ten years 2010-2019 to determine asthma prevalence, and asthma exacerbation and hospitalisation rates, using de-identified data from five national healthcare datasets. Exacerbations were defined based on hospital discharge diagnoses or oral corticosteroid dispensing.

Results: Total number of patients with asthma was 447,797 in 2010 to 512,627 in 2019, equating to approximately 10% of the population. Of these 19.4% experienced an exacerbation in 2010 (a population rate of 376.2 per 1000 patient-years); this exacerbation rate increased to 25.1% in 2019 (438.3 per 1000 patient-years). Exacerbations rates were consistently higher for females than males, and among Pacific peoples and Māori. In contrast, hospital admissions 25% lower in 2019 than 2010, decreasing from 1.4% to 0.9%, however over 50% of these admissions were in Māori and Pacific peoples.

Conclusion: Asthma exacerbation rates in NZ have increased over 2010-2019, however hospitalisation rates have decreased. This potentially suggests a move away from secondary to primary care management of exacerbations and provides important information for asthma care planning.

Keywords: Asthma; Descriptive; Epidemiology; Exacerbation; Hospitalisation; Population; Prevalence.

Conflict of interest statement

Declaration of competing interest AC, KB and JH have received research funding from Health Research Council for work related to asthma. AC is also affiliated with Asthma UK Centre of Applied research, the recipient of the Auckland Medical Research Foundation Senior Research Fellowship and on the board of Asthma NZ. AC is a member of Respiratory Effectiveness Group and international member of the Pharmacy Respiratory Task Force. All other authors declare no relevant conflicts of interest.

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2

Review

Lancet

. 2023 Jul 19;S0140-6736(23)01358-2.

doi: 10.1016/S0140-6736(23)01358-2. Online ahead of print.

Global access and patient safety in the transition to environmentally friendly respiratory inhalers: the Global Initiative for Asthma perspective

Mark L Levy[1], Eric D Bateman[2], Keith Allan[3], Leonard B Bacharier[4], Matteo Bonini[5], Louis-Philippe Boulet[6], Arnaud Bourdin[7], Chris Brightling[8], Guy Brusselle[9], Roland Buhl[10], Muhwa Jeremiah Chakaya[11], Alvaro A Cruz[12], Jeffrey Drazen[13], Francine M Ducharme[14], Liesbeth Duijts[15], Louise Fleming[16], Hiromasa Inoue[17], Fanny W S Ko[18], Jerry A Krishnan[19], Refiloe Masekela[20], Kevin Mortimer[21], Paulo Pitrez[22], Sundeep Salvi[23], Aziz Sheikh[24], Helen K Reddel[25], Arzu Yorgancıoğlu[26]

Affiliations expand

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- DOI: 10.1016/S0140-6736(23)01358-2

No abstract available

Conflict of interest statement

Declaration of interests MLL has received payments from publishers Taylor Francis and from Class Publishing; consulting fees from Smart Respiratory, Respiri, Imperial College, AstraZeneca, Novartis, and Teva; speaker or writing fees from Chiesi, AstraZeneca, and Teva; honoraria for manuscript writing and educational events from Consorzio Futuro in Ricerca; fees for expert testimony from HM Coroner, Waltham Forrest, London; support to attend meetings from Teva; and has held leadership roles (unpaid) in GINA, NHS England, and UK All Party Parliamentary Advisory Group (Asthma). EDB has received consulting fees from AstraZeneca, Regeneron, and Sanofi; speaker fees from AstraZeneca, Boehringer Ingelheim, Cipla, Novartis, Regeneron, Orion, and Sanofi Aventis; support to attend meetings from Orion, Sanofi, AstraZeneca, and GINA; and has participated (unpaid) in a board for DSMB for PACE study in COPD. KA declares no competing interests. LBB has received grants from the National Heart, Lung, and Blood Institute and National Institute of Allergy and Infectious Diseases; book royalties from Elsevier; consulting fees from Sanofi, Regeneron, Genentech, GlaxoSmithKline, DBV technologies, Teva, Medscape, Kinaset, OM Pharma, AstraZeneca, and Recludix; speaker fees from Sanofi, Regeneron, and GlaxoSmithKline; payment for advisory board participation from DBV Technologies, AstraZeneca, and Vertex; has participated in American Academy of Allergy Asthma & Immunology (unpaid) and American Board of Allergy and Immunology (paid); and has received medical writing services from Sanofi/Regeneron. MB has received grants from AstraZeneca and from GlaxoSmithKline; consulting fees from AstraZeneca, GlaxoSmithKline, and Sanofi; and speaker fees from AstraZeneca, Boehringer, Chiesi, GlaxoSmithKline, Menarini, Novartis, and Sanofi. L-PB has received grants from Amgen, AstraZeneca, GlaxoSmithKline, Merck, Novartis, and Sanofi-Regeneron; royalties for texts published by UptoDate and by Taylor and Francis; consulting fees from Astra Zeneca, Novartis, GlaxoSmithKline, Merck, and Sanofi-Regeneron; speaker fees from AstraZeneca, Covis, GlaxoSmithKline, Novartis, Merck, and Sanofi; and has participated (unpaid) in GINA as Chair of Board of Directors, Global Asthma Organisation (Interasma) as President, Canadian Thoracic Society Respiratory Guidelines Committee, and in Laval University as Chair on Knowledge Transfer, Prevention and Education in Respiratory and Cardiovascular Health. AB has received grants, consulting fees and speaker fees from AstraZeneca, Boehringer Ingelheim, Sanofi, Novartis, GlaxoSmithKline, and AB science; support to attend meetings from AstraZeneca, Boehringer Ingelheim, Sanofi, Novartis, GlaxoSmithKline, AB science, and Chiesi; and has participated in an advisory board for AB science. CB has received grants (paid to institution) from GlaxoSmithKline, AstraZeneca, Sanofi, Regeneron, Roche, Genentech, BI, Novartis, Chiesi, 4Dpharma, and Mologic; and has received consulting fees (paid to institution) from GlaxoSmithKline, AstraZeneca, Sanofi, Regeneron, Roche, Genentech, BI, Novartis, Chiesi, 4Dpharma, Mologic, and Areteia. GB has received speaker fees from AstraZeneca Boehringer Ingelheim, Chiesi, GlaxoSmithKline, MSD, Novartis, and Sanofi. RB has received grants (paid to institution) from Boehringer Ingelheim, GlaxoSmithKline, Novartis, and Roche; speaker fees from AstraZeneca, Berlin-Chemie, Boehringer Ingelheim, Chiesi, Cipla, GlaxoSmithKline, Novartis, Sanofi, Roche, and Teva; and has received payment for advisory board participation from AstraZeneca, Berlin-

Chemie, Boehringer Ingelheim, Chiesi, Cipla, GlaxoSmithKline, Novartis, Sanofi, Roche, and Teva. AAC has received speaker fees from Chiesi, GlaxoSmithKline, Boehringer Ingelheim, Eurofarma, Abdi Ibrahim, Novartis, Sanofi, and AstraZeneca. JD has received editing fees from Cecil's Textbook of Medicine-Pulmonary and Critical Care, and has been a pro-bono board member of the Nantucket Cottage Hospital. FMD has received grants from Canadian Institutes of Health Research, Thorasys-Medteq, GlaxoSmithKline, Covis Pharma, Breathe, Canadian Lung Association, Children's Hospital Academic Medical Organisation, and Bank Scotia Foundation; consulting fees from Sanofi Regeneron, Ontario Lung Association, Covis Pharma, GlaxoSmithKline, FMSQ, AstraZeneca, Institut national d'excellence en santé et services sociaux, Quebec, and Canadian Thoracic Society; and speaker fees from Federation des Mds specialists du Québec, Jean-Coutu, Réseau Quebecois de l'enseignement en santé respiratoire, Teva, Thorasys, Association des Mds Omnipraticiens du Richelieu St-Laurent, Sanofi/Regeneron, and Covis Pharma. LD has received speaker fees (paid to institution) from AstraZeneca and British Thoracic Society; opponent's fees from Karolinska Institutet, University of Copenhagen, Barcelona Institute for Global Health; and grants (paid to institution) for CoKids Study (ZonMW, number 10150062010006, Stichting Vrienden van Sophia, and HZ2020: EUCAN-Connect grant agreement number 824989; ATHLETE, grant agreement number 874583; LIFECYCLE, grant agreement number 733206). LF has received grants from Asthma UK, National Institute of Health Research, and Asthma and Lung UK; consulting fees (paid to institution) from Sanofi, Regeneron, and AstraZeneca; and speaker fees (paid to institution) from Novartis and AstraZeneca. HI has received grants (paid to institution) from Boehringer Ingelheim, GlaxoSmithKline, Kyorin, Omron, Ono, and Teijin-Pharma; speaker fees from AstraZeneca, Boehringer-Ingelheim, GlaxoSmithKline, Kyorin, Novartis, Ono, and Sanofi; and payment for advisory board participation from AstraZeneca, GlaxoSmithKline, Omron, and Sanofi. FWSK has received grants (paid to institution) from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline and Novartis; and support to attend meetings from Novartis and from Boehringer Ingelheim. JAK has received grants (paid to institution) from the National Heart, Lung, and Blood Institute, COPD Foundation, Regeneron, Sergey Brin Family Foundation, US Patient Centered Outcomes Research Institute, and American Lung Association; consulting fees from GlaxoSmithKline, AstraZeneca, CereVu Medical, Propeller and ResMed, and BData; speaker fees from University of Chicago, and from American Academy of Asthma, Allergy, and Immunology; support to attend meetings from Global Initiative for Asthma and from American Thoracic Society; and has participated in Respiratory Health Association, Global Initiative for Asthma, and COPD Foundation. RM has received speaker fees from AstraZeneca and Organon; payment for advisory board participation from AstraZeneca and Organon; and has participated (unpaid) in leadership roles within Global Asthma Network. KM has received payment for advisory board participation from AstraZeneca and GlaxoSmithKline. PP has received consulting fees from AstraZeneca, GlaxoSmithKline, Sanofi, Boehringer Ingelheim, and Novartis; support to attend meetings from AstraZeneca and Boehringer Ingelheim; payment for advisory board participation from AstraZeneca; and is an unpaid member of the Board of Directors for the Brazilian Severe Asthma Group. SS has received consulting fees (paid to institution) and speaker fees (paid to institution) from Cipla, India. AS has received support to attend meetings from GINA. HKR has received grants from

AstraZeneca, GlaxoSmithKline, Novartis, and Perpetual Philanthropy; consulting fees from Novartis, AstraZeneca, and GlaxoSmithKline; speaker fees from Alkem, AstraZeneca, GlaxoSmithKline, Teva, Boehringer-Ingelheim, Sanofi, Getz, and Chiesi; payment for advisory board participation from AstraZeneca, GlaxoSmithKline, Novartis, Chiesi, and Sanofi; and has participated (unpaid) in Global Initiative for Asthma as Chair of Science Committee, and in National Asthma Council Australia's Guidelines Committee. AY has received consulting fees (paid to institution) from GSK, AstraZeneca, and Chiesi; speaker fees (paid to institution) from GlaxoSmithKline, AstraZeneca, Bilim, and Abdi Ibrahim; and support to attend meetings from GINA. MJC declares no competing interests.

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3
Mol Immunol
. 2023 Jul 20;161:11-24.

doi: 10.1016/j.molimm.2023.07.004. Online ahead of print.

Current practices and future trends in cockroach allergen immunotherapy

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Affiliations expand

- PMID: 37480600

- DOI: 10.1016/j.molimm.2023.07.004

Abstract

Purpose of review: This review evaluates the current modes of allergen-specific immunotherapy for cockroach allergens, in terms of clinical outcomes and explores future trends in the research and development needed for a more targeted cockroach immunotherapy approach with the best efficacy and minimum adverse effects.

Summary: Cockroach allergy is an important risk factor for allergic rhinitis in the tropics, that disproportionately affects children and young adults and those living in poor socio-economic environments. Immunotherapy would provide long-lasting improvement in quality of life, with reduced medication intake. However, the present treatment regime is long and has a risk of adverse effects. In addition, cockroach does not seem to have an immuno-dominant allergen, that has been traditionally used to treat allergies from other sources. Future trends of cockroach immunotherapy involve precision diagnosis, to correctly identify the offending allergen. Next, precision immunotherapy with standardized allergens, which have been processed in a way that maintains an immunological response without allergic reactions. This approach can be coupled with modern adjuvants and delivery systems that promote a Th1/Treg environment, thereby modulating the immune response away from the allergenic response.

Keywords: Allergic rhinitis; Asthma; Cockroach allergy; IgE; Immunotherapy; Recombinant allergens.

Conflict of interest statement

Declaration of Competing Interest KR declare no competing interests. FTC has received consultancy fees from Sime Darby Technology Centre, First Resources Ltd, Genting Plantation, Olam International, and Syngenta Crop Protection, outside the submitted work.

4
Am J Respir Crit Care Med

. 2023 Jul 21.

doi: 10.1164/rccm.202306-0995VP. Online ahead of print.

Type 1 Error on Type 2 Inflammation: Circular Analysis in Asthma Clustering

Brian J Patchett[1,2], Edward S Schulman[3]

Affiliations expand

- PMID: 37478329

- DOI: 10.1164/rccm.202306-0995VP

No abstract available

5
Eur Respir J

. 2023 Jul 20;2300700.

doi: 10.1183/13993003.00700-2023. Online ahead of print.

Revisiting Asthma Pharmacotherapy: Where Do We Stand and Where Do We Want to Go?

Mario Cazzola[1], Clive P Page[2], Maria Gabriella Matera[3], Paola Rogliani[4], Nicola A Hanania[5]

Affiliations expand

- PMID: 37474159

- DOI: 10.1183/13993003.00700-2023

Abstract

Several current guidelines/strategies outline a treatment approach to asthma, which primarily consider the goals of improving lung function and quality of life and reducing symptoms and exacerbations. They suggest a strategy of stepping-up or down treatment, depending on the patient's overall current asthma symptom control and future risk of exacerbation. While this stepwise approach is undeniably practical for daily practice, it does not always address the underlying mechanisms of this heterogeneous disease. In the last decade, there has been an attempt to improve the treatment of severe asthma such as the addition of long-acting antimuscarinic agent to the traditional ICS/LABA treatment, and the introduction of therapies targeting key cytokines. However, despite such strategies several unmet needs in this population remain, motivating research to identify novel targets and develop improved therapeutic and/ or preventative asthma treatments. Pending the availability of such therapies, it is essential to re-evaluate the current conventional 'one-size-fits-all' approach to a more precise asthma management. Although challenging, identifying 'treatable traits" that contribute to respiratory symptoms in individual patients with asthma may allow a more pragmatic approach to establish more personalized therapeutic goals.

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Eur Respir J

. 2023 Jul 20;2300245.

doi: 10.1183/13993003.00245-2023. Online ahead of print.

The impact of steroid-sparing biologic therapies on weight loss in obese individuals with severe eosinophilic asthma

Alexandra M Nanzer[1,2], Victoria Taylor[3], Andrew P Hearn[3,2], Joanne E Kavanagh[3,2], Tanya Patrick[3], Linda Green[3], Louise Thomson[3], Jodie Lam[3], Mariana Fernandez[3], Cris Roxas[3], Grainne d'Ancona[3,2], Brian D Kent[3,4,5], Jaideep Dhariwal[3], David J Jackson[3,2]

Affiliations expand

- PMID: 37474156

- DOI: 10.1183/13993003.00245-2023

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7
Ann Allergy Asthma Immunol
. 2023 Jul 18;S1081-1206(23)00500-8.
doi: 10.1016/j.anai.2023.07.010. Online ahead of print.

An asthma phenotype comprising bronchial wall thickening and mucus plugging confers worse clinical outcomes

Rory Chan[1], Chary Duraikannu[2], Mohamed Jaushal Thouseef[2], Brian Lipworth[3]

Affiliations expand

- PMID: 37473838
- DOI: 10.1016/j.anai.2023.07.010

No abstract available

Keywords: asthma; bronchial wall thickness; exacerbations; mucus plugging.

8
Review

Expert Rev Clin Immunol

. 2023 Jul 20.

doi: 10.1080/1744666X.2023.2239504. Online ahead of print.

Update on virus-induced asthma exacerbations

Francesca Urbani[1], Marianna Cometa[1], Chiara Martelli[1], Federica Santoli[1], Roberto Rana[1], Antonio Ursitti[1], Matteo Bonato[2], Simonetta Baraldo[2], Marco Contoli[1], Alberto Papi[1]

Affiliations expand

- PMID: 37470413

- DOI: 10.1080/1744666X.2023.2239504

Abstract

Introduction: Viral infections are common triggers for asthma exacerbation. Subjects with asthma are more susceptible to viral infections and develop more severe or long-lasting lower respiratory tract symptoms than healthy individuals owing to impaired immune responses. Of the many viruses associated with asthma exacerbation, rhinovirus (RV) is the most frequently identified virus in both adults and children.

Areas covered: We reviewed epidemiological and clinical links and mechanistic studies on virus-associated asthma exacerbations. We included sections on severe acute respiratory syndrome coronavirus 2 (SARS-CoV2), the latest evidence of coronavirus disease 2019 (COVID-19) in asthma patients, and past and future searches for therapeutic and prevention targets.

Expert opinion: Early treatment or prevention of viral infections might significantly reduce the rate of asthma exacerbation, which is one of the key points of disease management. Although it is hypothetically possible nowadays to interfere with every step of the infectious cycle of respiratory tract viruses, vaccination development has provided some of the most encouraging results. Future research should proceed toward the development of a wider spectrum of vaccines to achieve a better quality of life for patients with asthma and to reduce the economic burden on the healthcare system.

Keywords: Asthma; CoV2; Exacerbation; Pathogenesis; Respiratory syncytial virus; Rhinovirus; SAR.

supplementary info

9

Review

J Toxicol Environ Health B Crit Rev

. 2023 Jul 19;1-29.

doi: 10.1080/10937404.2023.2236548. Online ahead of print.

Continent-based systematic review of the short-term health impacts of wildfire emissions

Bela Barros[1], Marta Oliveira[1], Simone Morais[1]

Affiliations expand

- PMID: 37469022

- DOI: 10.1080/10937404.2023.2236548

Abstract

This review systematically gathers and provides an analysis of pollutants levels emitted from wildfire (WF) and their impact on short-term health effects of affected populations. The available literature was searched according to Population, Exposure, Comparator, Outcome, and Study design (PECOS) database defined by the World Health Organization

(WHO) and a meta-analysis was conducted whenever possible. Data obtained through PECOS characterized information from the USA, Europe, Australia, and some Asian countries; South American countries were seldom characterized, and no data were available for Africa and Russia. Extremely high levels of pollutants, mostly of fine fraction of particulate matter (PM) and ozone, were associated with intense WF emissions in North America, Oceania, and Asia and reported to exceed several-fold the WHO guidelines. Adverse health outcomes include emergency department visits and hospital admissions for cardiorespiratory diseases as well as mortality. Despite the heterogeneity among exposure and health assessment methods, all-cause mortality, and specific-cause mortality were significantly associated with WF emissions in most of the reports. Globally, a significant association was found for all-cause respiratory outcomes including asthma, but mixed results were noted for cardiovascular-related effects. For the latter, estimates were only significant several days after WF emissions, suggesting a more delayed impact on the heart. Different research gaps are presented, including the need for the application of standardized protocols for assessment of both exposure and adverse health risks. Mitigation actions also need to be strengthened, including dedicated efforts to communicate with the affected populations, to engage them for adoption of protective behaviors and measures.

Keywords: Climate changes; air pollution; forest fires; general population; particulate matter; public health.

10
Lung
.
2023 Jul 19.

doi: 10.1007/s00408-023-00636-4. Online ahead of print.

Association of World Trade Center (WTC) Occupational Exposure Intensity with Chronic Obstructive Pulmonary Disease (COPD) and Asthma COPD Overlap (ACO)

Rafael E de la Hoz[1,2,3], Moshe Shapiro[4], Anna Nolan[5], Akshay Sood[6], Roberto G Lucchini[4], James E Cone[7], Juan C Celedón[8]

Affiliations expand

- PMID: 37468611

- DOI: 10.1007/s00408-023-00636-4

Abstract

Introduction: Reported associations between World Trade Center (WTC) occupational exposure and chronic obstructive pulmonary disease (COPD) or asthma COPD overlap (ACO) have been inconsistent. Using spirometric case definitions, we examined that association in the largest WTC occupational surveillance cohort.

Methods: We examined the relation between early arrival at the 2001 WTC disaster site (when dust and fumes exposures were most intense) and COPD and ACO in workers with at least one good quality spirometry with bronchodilator response testing between 2002 and 2019, and no physician-diagnosed COPD before 9/11/2001. COPD was defined spirometrically as fixed airflow obstruction and ACO as airflow obstruction plus an increase of ≥ 400 ml in FEV_1 after bronchodilator administration. We used a nested 1:4 case-control design matching on age, sex and height using incidence density sampling.

Results: Of the 17,928 study participants, most were male (85.3%) and overweight or obese (84.9%). Further, 504 (2.8%) and 244 (1.4%) study participants met the COPD and ACO spirometric case definitions, respectively. In multivariable analyses adjusted for smoking, occupation, cohort entry period, high peripheral blood eosinophil count and other covariates, early arrival at the WTC site was associated with both COPD (adjusted odds ratio [OR_{adj}] = 1.34, 95% confidence interval [CI] 1.01-1.78) and ACO (OR_{adj} = 1.55, 95%CI 1.04-2.32).

Conclusion: In this cohort of WTC workers, WTC exposure intensity was associated with spirometrically defined COPD and ACO. Our findings suggest that early arrival to the WTC site is a risk factor for the development of COPD or of fixed airway obstruction in workers with pre-existing asthma.

Keywords: Chronic obstructive pulmonary disease; Longitudinal changes in lung function; Occupational lung disease; Smoke inhalation injury; Spirometry; World Trade Center Attack, 2001.

- 59 references

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11
J Am Board Fam Med
.
. 2023 Jul 19;jabfm.2022.220270R2.

doi: 10.3122/jabfm.2022.220270R2. Online ahead of print.

What Patients Call Their Inhalers Is Associated with "Asthma Attacks"

Victoria E Forth[1], Juan Carlos Cardet[1], Ku-Lang Chang[1], Brianna Ericson[1], Laura P Hurley[1], Nancy E Maher[1], Elizabeth W Staton[1], Bonnie Telón Sosa[1], Elliot Israel[2], PREPARE investigators

Affiliations expand

- PMID: 37468217

- DOI: 10.3122/jabfm.2022.220270R2

Abstract

Background: Clinician-patient miscommunication contributes to worse asthma outcomes. What patients call their asthma inhalers and its relationship with asthma morbidity are unknown.

Methods: Inhaler names were ascertained from Black and Latinx adults with moderate-severe asthma and categorized as "standard" if based on brand/generic name or inhaler type (i.e., controller vs. rescue) or "non-standard" for other terms (i.e., color, device type, e.g., "puffer," or unique names). Clinical characteristics and asthma morbidity measures were evaluated at baseline: self-reported asthma exacerbations one year before enrollment (i.e., systemic corticosteroid bursts, emergency department (ED)/urgent care (UC) visits, or hospitalizations), and asthma control and quality of life. Multivariable regression models tested the relationship between non-standard names and asthma morbidity measures, with adjustments.

Results: Forty-four percent (502/1150) of participants used non-standard inhaler names. These participants were more likely to be Black (p=0.006), from the Southeast (p<0.001), and have fewer years with asthma (p=0.012) relative to those who used standard names. Non-standard inhaler names was associated with an incidence rate ratio (IRR) of 1.29 (95% confidence interval [CI], 1.11-1.50, p=0.001; 1.8 vs. 1.5 events) for corticosteroid bursts for asthma, an IRR=1.43 (95% CI, 1.21-1.69, p<0.001; 1.9 vs. 1.4 events) for ED/UC visits for asthma, and an odds ratio=1.57 (95% CI, 1.12-2.18, p=0.008; 0.5 vs. 0.3 events) for asthma hospitalizations after adjustment.

Conclusions: Patients who use non-standard names for asthma inhalers experience increased asthma morbidity. Ascertaining what patients call their inhalers may be a quick method to identify those at higher risk of poor outcomes.

Keywords: Asthma; Health Literacy; Inhalers; Outcomes Assessment; Physician-Patient Relations.

Conflict of interest statement

Conflict of interest: Ms. Forth reports receiving honoraria from Takeda for work in advisory boards for Alpha 1 antitrypsin and severe COPD. Dr. Cardet reports receiving honoraria from AstraZeneca, Genentech, and GSK for work in advisory boards and educational lectures on asthma. Dr. Fuhlbrigge is an unpaid consultant to AstraZeneca for the development of outcome measures for asthma and COPD clinical trials and a consultant to Novartis on epidemiologic analyses related to asthma control. Dr. Pace has received research grants from and is a consultant for Boehringer Ingelheim and a research grant from AstraZeneca. Dr. Phipatanakul received grants from Genentech, Regeneron, Novartis, Sanofi, Merck, and GSK; consulting fees from Regeneron, Sanofi, GSK, Genentech, and

Novartis; and honoraria for educational events from Genentech, Sanofi, Regeneron, and GSK. Dr. Mosnaim received research grant support from AstraZeneca, Alk-Abello and Genentech and receives research grant support from GlaxoSmithKline, Novartis, Sanofi-Regeneron, and TEVA. Dr. Israel received in-kind medications or devices for NIH or PCORI-sponsored studies from Teva, Circassia, royalties from UpToDate, and consulting fees from AB Science, Allergy and Asthma Network, Amgen, Arrowhead Pharmaceuticals, AstraZeneca, Avillion, Biometry, Equillium, Genentech, GlaxoSmithKline, Merck, NHLBI, Novartis, Pneuma Respiratory, PPS Health, Regeneron, Sanofi Genzyme, Sienna Biopharmaceuticals, TEVA, and Cowen. The other authors have no conflicts of interest to disclose.

12
J Allergy Clin Immunol Pract

. 2023 Jul 17;S2213-2198(23)00785-7.

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Association Between Aspirin Exacerbated Respiratory Disease and Atherosclerotic Cardiovascular Disease: A Retrospective Review of U.S. Claims Data

Michael J Adame[1], Mukaila Raji[2], Yong Shan[3], Yuanyi Zhang[4], Yong-Fang Kuo[5], Julia W Tripple[6]

Affiliations expand

- PMID: 37468040

- DOI: 10.1016/j.jaip.2023.07.014

Abstract

Background: Aspirin exacerbated respiratory disease (AERD) consists of chronic rhinosinusitis with nasal polyps (CRSwNP), asthma, and hypersensitivity to aspirin or non-steroidal anti-inflammatory drugs (NSAIDs). Asthma is associated with increased risk of atherosclerotic cardiovascular diseases (ASCVD). However, there is lack of data on association between AERD and ASCVD.

Objective: To investigate the relationship between AERD and subsequent risk of ASCVD.

Methods: An algorithm to find patients with AERD was generated and validated through chart review at our home institution. This algorithm was applied to a national insurance claims database to obtain data for a retrospective cohort study. Demographic and comorbidity data were obtained for propensity matching. Several methods of analysis were performed on the data.

Results: A total of 571 patients met criteria for AERD, 3909 met criteria for asthma, CRSwNP and no allergy to aspirin or NSAIDs (Group 1), and 75,050 met criteria for asthma, CRS without nasal polyps, and no allergy to aspirin or NSAIDs (Group 2). After covariate adjustment, AERD was significantly associated with ASCVD, including severe ASCVD, over Groups 1 and 2 regardless of asthma severity.

Conclusion: Patients with AERD are at higher risk of ASCVD versus patients with asthma and CRS with or without nasal polyps, underscoring the need for early ASCVD screening and a consideration for aspirin desensitization or use of a non-aspirin antiplatelet agent in the setting of AERD and comorbid ASCVD.

Keywords: Samter's triad; aspirin exacerbated respiratory disease; aspirin hypersensitivity; asthma; atherosclerotic cardiovascular disease; chronic rhinosinusitis with nasal polyps; non-steroidal anti-inflammatory drug hypersensitivity.

13
Exp Gerontol
. 2023 Jul 17;112257.

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The association between sarcopenia and incident chronic lung disease in the general population: A longitudinal study based on CHARLS data

Hongxiang Wang[1], Hongbin Qiu[1], Xia Gu[2], Yiying Zhang[3], Shanjie Wang[4]

Affiliations expand

- PMID: 37467900

- DOI: 10.1016/j.exger.2023.112257

Abstract

Background: Data regarding the association of sarcopenia with chronic lung disease (CLD) has led to inconclusive results. The main goal of this research was to investigate the association between sarcopenia and CLD in middle-aged and elderly individuals in China.

Methods: The study sample consisted of 11,077 individuals without CLD at baseline chosen from the China Health and Retirement Longitudinal Study (CHARLS) data from 2015, followed up until 2018. Sarcopenia was identified utilizing the criteria set by the Asian Working Group on Sarcopenia (AWGS 2019) in 2019. Individuals were categorized into no-sarcopenia, possible-sarcopenia, and sarcopenia groups. The outcome of the study was considered to be incident CLD, which included chronic bronchitis, emphysema, pulmonary heart disease, and asthma. The association between sarcopenia and the risk of CLD was also examined by employing weighted Cox proportional hazard regression models.

Results: A total of 356 (3.20 %) participants developed CLD during the 3.6-year follow-up period. The cumulative incidence of CLD in the no-sarcopenia, possible-sarcopenia, and sarcopenia groups was 2.80 % (230/8222), 4.37 % (55/1260), and 4.45 % (71/1595),

respectively. Individuals with possible sarcopenia {hazard ratio [HR] [95 % confidence interval (CI)]: 1.48 [1.04-2.09]} and sarcopenia [HR (95 % CI): 1.68 (1.12-2.51)] demonstrated a considerably high risk of developing CLD compared to individuals in the no-sarcopenia group. Moreover, individuals diagnosed with sarcopenia, as per the criteria established by the European Working Group on Sarcopenia in Older People (EWGSOP) 2018, were at considerably high risk for developing CLD compared to those in the no-sarcopenia group.

Conclusion: This research involving adult Chinese individuals demonstrated a significant association between, possible sarcopenia and sarcopenia with an elevated risk of incident CLD, thereby emphasizing the importance of monitoring respiratory health in this population.

Key points: Question: Whether muscle mass and sarcopenia are associated with the development of chronic lung disease (CLD) in Asian middle-aged and elderly individuals.

Findings: This longitudinal study encompassing 11,077 adults aged ≥45 years from the China Health and Retirement Longitudinal Study (CHARLS) data with 3.6 years of follow-up revealed a positive association between sarcopenia [HR (95 % CI): 1.68 (1.12-2.51)] at baseline and incidence of CLD. Meaning: The findings suggest that possible sarcopenia and sarcopenia are linked to the development of CLD. Consequently, middle-aged and elderly individuals with possible sarcopenia and sarcopenia can be considered vulnerable regarding the primary prevention strategies for CLD.

Keywords: Chronic lung disease; Muscle mass; Respiratory health; Sarcopenia.

14

Editorial

N Engl J Med

-

. 2023 Jul 20;389(3):274-275.

doi: 10.1056/NEJMe2305752.

Biologics for COPD - Finally Here

Alvar Agusti[1]

Affiliations expand

- PMID: 37467502

- DOI: 10.1056/NEJMe2305752

No abstract available

supplementary info

Publication types, MeSH terms, Substancesexpand

full text links

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15
JMIR Res Protoc

. 2023 Jul 19;12:e48790.

doi: 10.2196/48790.

Effects of Interventions to Prevent Work-Related Asthma, Allergy, and Other

Hypersensitivity Reactions in Norwegian Salmon Industry Workers (SHInE): Protocol for a Pragmatic Allocated Intervention Trial and Related Substudies

Anje Christina Höper[1,2], Jorunn Kirkeleit[3,4], Marte Renate Thomassen[1,4], Kaja Irgens-Hansen[3,4], Bjørg Eli Hollund[3,4], Carl Fredrik Fagernæs[5,6], Sindre Rabben Svedahl[5,6], Thor Eirik Eriksen[1,2], Miriam Grgic[1], Berit Elisabeth Bang[1,7]

Affiliations expand

- PMID: 37467018

- DOI: 10.2196/48790

Free article

Abstract

Background: Workers in the salmon processing industry have an increased risk of developing respiratory diseases and other hypersensitivity responses due to occupational exposure to bioaerosols containing fish proteins and microorganisms, and related allergens. Little is known about effective measures to reduce bioaerosol exposure and about the extent of skin complaints among workers. In addition, while identification of risk factors is a core activity in disease prevention strategies, there is increasing interest in health-promoting factors, which is an understudied area in the salmon processing industry.

Objective: The overall aim of this ongoing study is to generate knowledge that can be used in tailored prevention of development or chronification of respiratory diseases, skin reactions, protein contact dermatitis, and allergy among salmon processing workers. The main objective is to identify effective methods to reduce bioaerosol exposure. Further objectives are to identify and characterize clinically relevant exposure agents, identify determinants of exposure, measure prevalence of work-related symptoms and disease, and identify health-promoting factors of the psychosocial work environment.

Methods: Data are collected during field studies in 9 salmon processing plants along the Norwegian coastline. Data collection comprises exposure measurements, health examinations, and questionnaires. A wide range of laboratory analyses will be used for further analysis and characterization of exposure agents. Suitable statistical analysis will be applied to the various outcomes of this comprehensive study.

Results: Data collection started in September 2021 and was anticipated to be completed by March 2023, but was delayed due to the COVID-19 pandemic. Baseline data from all 9 plants included 673 participants for the health examinations and a total of 869 personal

exposure measurements. A total of 740 workers answered the study's main questionnaire on demographics, job characteristics, lifestyle, health, and health-promoting factors. Follow-up data collection is not completed yet.

Conclusions: This study will contribute to filling knowledge gaps concerning salmon workers' work environment. This includes effective workplace measures for bioaerosol exposure reduction, increased knowledge on hypersensitivity, allergy, respiratory and dermal health, as well as health-promoting workplace factors. Together this will give a basis for improving the work environment, preventing occupational health-related diseases, and developing occupational exposure limits, which in turn will benefit employees, employers, occupational health services, researchers, clinicians, decision makers, and other stakeholders.

Trial registration: ClinicalTrials.gov NCT05039229; https://www.clinicaltrials.gov/study/NCT05039229.

International registered report identifier (irrid): DERR1-10.2196/48790.

Keywords: allergy; bioaerosols; exposure-response; health promotion; hypersensitivity; occupational asthma; occupational skin disease; psychosocial work environment; salmon processing industry.

Review

J Med Internet Res

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-
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doi: 10.2196/41092.

Video-Based Educational Interventions for Patients With Chronic Illnesses: Systematic Review

Nikita Deshpande[1], Meng Wu[2], Colleen Kelly[3], Nicole Woodrick[4], Debra A Werner[5], Anna Volerman[2], Valerie G Press[2]

Affiliations expand

- PMID: 37467015

- DOI: 10.2196/41092

Free article

Abstract

Background: With rising time constraints, health care professionals increasingly depend on technology to provide health advice and teach patients how to manage chronic disease. The effectiveness of video-based tools in improving knowledge, health behaviors, disease severity, and health care use for patients with major chronic illnesses is not well understood.

Objective: The aim of this study was to assess the current literature regarding the efficacy of video-based educational tools for patients in improving process and outcome measures across several chronic illnesses.

Methods: A systematic review was conducted using CINAHL and PubMed with predefined search terms. The search included studies published through October 2021. The eligible studies were intervention studies of video-based self-management patient education for an adult patient population with the following chronic health conditions: asthma, chronic kidney disease, chronic obstructive pulmonary disease, chronic pain syndromes, diabetes, heart failure, HIV infection, hypertension, inflammatory bowel disease, and rheumatologic disorders. The eligible papers underwent full extraction of study characteristics, study

design, sample demographics, and results. Bias was assessed with the Cochrane risk-of-bias tools. Summary statistics were synthesized in Stata SE (StataCorp LLC). Data reporting was conducted per the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) checklist.

Results: Of the 112 studies fully extracted, 59 (52.7%) were deemed eligible for inclusion in this review. The majority of the included papers were superiority randomized controlled trials (RCTs; 39/59, 66%), with fewer pre-post studies (13/59, 22%) and noninferiority RCTs (7/59, 12%). The most represented conditions of interest were obstructive lung disease (18/59, 31%), diabetes (11/59, 19%), and heart failure (9/59, 15%). The plurality (28/59, 47%) of video-based interventions only occurred once and occurred alongside adjunct interventions that included printed materials, in-person counseling, and interactive modules. The most frequently studied outcomes were disease severity, health behavior, and patient knowledge. Video-based tools were the most effective in improving patient knowledge (30/40, 75%). Approximately half reported health behavior (21/38, 56%) and patient self-efficacy (12/23, 52%) outcomes were improved by video-based tools, and a minority of health care use (11/28, 39%) and disease severity (23/69, 33%) outcomes were improved by video-based tools. In total, 48% (22/46) of the superiority and noninferiority RCTs and 54% (7/13) of the pre-post trials had moderate or high risk of bias.

Conclusions: There is robust evidence that video-based tools can improve patient knowledge across several chronic illnesses. These tools less consistently improve disease severity and health care use outcomes. Additional study is needed to identify features that maximize the efficacy of video-based interventions for patients across the spectrum of digital competencies to ensure optimized and equitable patient education and outcomes.

Keywords: chronic disease; health literacy; patient education; self-management; technology; video education; video-based interventions.

17
Asian Pac J Allergy Immunol
.
. 2023 Jul 16.

doi: 10.12932/AP-180222-1335. Online ahead of print.

Practical recommendations for home-nebulized corticosteroid use in children aged ≤ 5 years with asthma: A review and advisory group consensus

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Affiliations expand

- PMID: 37466961

- DOI: 10.12932/AP-180222-1335

Abstract

Background: Despite nebulized budesonide being identified by the Global Initiative for Asthma report as a viable alternative to inhaled corticosteroids (ICS) delivered by pressurized metered-dose inhalers (pMDIs) with spacers, practical guidance on nebulized corticosteroid use in the pediatric population remains scarce.

Objective: To review the current literature and provide practical recommendations for nebulized budesonide use in children aged ≤ 5 years with a diagnosis of asthma.

Methods: A group of 15 expert pediatricians in the respiratory and allergy fields in Thailand developed Delphi consensus recommendations on nebulized budesonide use based on their clinical expertise and a review of the published literature. Studies that

evaluated the efficacy (effectiveness) and/or safety of nebulized budesonide in children aged ≤ 5 years with asthma were assessed. AR patients.

Results: Overall, 24 clinical studies published between 1993 and 2020 met the inclusion criteria for review. Overall, results demonstrated that nebulized budesonide significantly improved symptom control and reduced exacerbations, asthma-related hospitalizations, and the requirement for oral corticosteroids compared with placebo or active controls. Nebulized budesonide was well tolerated, with no severe or drug-related adverse events reported. Following a review of the published evidence and group consensus, a treatment algorithm as per the Thai Pediatric Asthma 2020 Guidelines was proposed, based on the availability of medications in Thailand, to include nebulized budesonide as the initial treatment option alongside ICS delivered by pMDIs with spacers in children aged ≤ 5 years.

Conclusions: ThNebulized budesonide is an effective and well-tolerated treatment option in children aged ≤ 5 years with asthma.

18
Arthritis Care Res (Hoboken)
. 2023 Jul 19.

doi: 10.1002/acr.25193. Online ahead of print.

Increased risk of rheumatoid arthritis in patients with asthma: a genetic association study using two-sample Mendelian randomization analysis

Jiyuan Yan[1], Yi Zhang[2], Xiaofei Zhang[1], Ge Chen[1], Daiqing Wei[1], Ke Duan[3], Zheng Li[1], Lin Peng[1], Jialin Liu[4], Zhong Li[1], Yanshi Liu[1]

Affiliations expand

- PMID: 37465942

- DOI: 10.1002/acr.25193

Abstract

Background: Observational studies have explored the association between asthma and some types of arthritis, including rheumatoid arthritis and osteoarthritis, but the results are largely contradictory.

Objective: We aimed to investigate the causal effects of asthma on arthritis including osteoarthritis, rheumatoid arthritis, gout and ankylosing spondylitis.

Methods: Two-sample Mendelian randomization (MR) analysis was used to investigate the causal effects of asthma on each arthritis. The genetic instruments for asthma were obtained from a large genome-wide association study of asthma. Inverse-variance weighted (IVW) method was used as the main analysis of MR. Bonferroni-adjusted P value threshold was used to account for multiple comparisons.

Results: MR-IVW analysis suggested that adult-onset asthma (AOA) was associated with increased risk of rheumatoid arthritis. The odds ratio for rheumatoid arthritis associated with AOA and childhood-onset asthma (COA) were 1.018 (95% CI, 1.011 to 1.025; P < 0.001) and 1.006 (95% CI, 1.001 to 1.012; P = 0.046), respectively. For osteoarthritis, gout, or ankylosing spondylitis, all the MR analyses showed no significant causal effects of AOA or COA on them. We also performed a reverse MR analysis to explore the causal effects of rheumatoid on all asthma, allergic asthma or non-allergic asthma, and found no significant causal effects on them.

Conclusion: Genetically predicted AOA predisposes patients to an increased risk of rheumatoid arthritis, but has no causal effects on osteoarthritis, gout, and ankylosing spondylitis. The result of COA on rheumatoid arthritis is suggestive of potential causal relationship but needs to be confirmed in further studies.

19
BMC Pulm Med

. 2023 Jul 18;23(1):266.

doi: 10.1186/s12890-023-02556-8.

Comorbid asthma in patients with chronic rhinosinusitis with nasal polyps: did dupilumab make a difference?

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Affiliations expand

- PMID: 37464395
- PMCID: PMC10354942
- DOI: 10.1186/s12890-023-02556-8

Free PMC article

Abstract

Background: The clinical heterogeneity of chronic rhinosinusitis (CRS) and bronchial asthma is attributable to different underlying inflammatory profiles. However, the similarity between CRS with nasal polyps (CRSwNP) and type-2 asthma pathophysiology speculates that one biological therapy could affect both comorbidities. Despite dupilumab, a monoclonal antibody that targets IL-4α and IL-13 receptors, being used in patients with nasal polyps and severe asthma, real-life data about its efficacy in improving the quality of life and patient symptoms is still lacking. This study's primary objective was to evaluate dupilumab treatment's effect on the frequency of olfactory symptoms and health-related quality of life tests as measured by the Sino-nasal outcome test (SNOT-22) in patients with NP. The secondary objective was the effect of dupilumab on asthma symptom control as measured by the asthma control test (ACT).

Methods: A prospective study was conducted of 166 patients with CRSwNP, with or without asthma. The following variables were collected at baseline and after at least six months of continuous dupilumab therapy; SNOT-22, olfactory symptoms frequency, and ACT score.

Results: Asthma prevalence in patients with CRSwNP was high (59.63%), and being female with a history of frequent use of oral corticosteroid (OCS) courses and repeated unsuccessful nasal and para-nasal surgeries for polyposis increased the likelihood of having underlying asthma by 2, 1 and 4 times more, respectively. Additionally, being asthmatic required a longer duration of dupilumab treatment. However, both the health-related quality of life and olfactory symptoms improved equally in both groups.

Conclusion: Even with associated comorbid asthma in patients with CRSwNP, treatment with dupilumab could improve the quality of life, olfactory symptoms, and asthma symptom control.

Keywords: Asthma; Asthma control test; Chronic rhinosinusitis; Dupilumab; Nasal polyps; Sinonasal outcome test.

Conflict of interest statement

All authors declare no conflict of interest. Each author has revised and approved the final version of the manuscript independently.

- 51 references
- 6 figures

20
Eur Ann Allergy Clin Immunol
.
. 2023 Jul 17.

doi: 10.23822/EurAnnACI.1764-1489.304. Online ahead of print.

Severe asthma: follow-up after one year from the Italian Registry of Severe Asthma (IRSA)

M B Bilò[1,2], M Martini[1,2], L Antonicelli[3], M Aliani[4], M Carone[4], L Cecchi[5], F de Michele[6], G Polese[7], A Vaghi[8], A Musarra[9], C Micheletto[10], IRSA Follow-up Study Group

Collaborators, Affiliations expand

- PMID: 37462932

- DOI: 10.23822/EurAnnACI.1764-1489.304

Free article

Abstract

Background. Asthma affects millions of people worldwide, with a subgroup suffering from severe asthma (SA). Biologics have revolutionized SA treatment, but challenges remain in managing different patient traits. This study analyzed data from the Italian Registry on Severe Asthma (IRSA) to investigate changes in SA characteristics and effectiveness of treatments after one year of follow-up, and to identify factors associated with response to treatments in a real-world setting. **Methods.** Data on SA patients with one year of follow-up were extracted from IRSA. Asthma control, exacerbations, lung function, and treatments, were assessed at follow-up and analyzed against baseline characteristics. **Results.** After one year of follow-up, notable improvements were observed in all the outcomes of SA of the included patients (n = 570). The effectiveness of biologic therapies was particularly evident, as they contributed significantly to these positive outcomes. Additionally, certain factors were found to be associated with improvement, namely T2 phenotype, baseline eosinophil count (BEC), and area of residence. On the other hand, comorbidities (obesity, gastro-esophageal reflux disease) and poor lung function were risk factors. Notably, poor-responders to biologics exhibited lower level of education, BEC, and exacerbations, and higher frequency of atopy and ACT score ≥ 20. **Conclusions.** The findings demonstrate the effectiveness of biologics in asthma management, when implemented as part of a planned follow-up strategy aimed at optimizing and fine-tuning the therapy. Moreover, the study highlights the importance of

considering key traits such as the T2 phenotype, BEC, education, and comorbidities when tailoring SA treatment. Overall, this study contributes to enhancing our understanding of SA management and guiding the development of personalized treatment approaches for patients with SA.

21
Intern Med J
. 2023 Jul 18.

doi: 10.1111/imj.16177. Online ahead of print.

Predictors of severe and recurrent adult anaphylaxis, and gaps in the cascade of care: a retrospective, single-centre study 2009-2018

Jacqueline Loprete[1], Jonathan Montemayor[1], Valerie Bramah[1], Callum McEwan[1], Robyn Richardson[1], Jessica Green[1], Andrew Carr[1,2], Winnie Tong[1,2]

Affiliations expand

- PMID: 37461369

- DOI: 10.1111/imj.16177

Abstract

Background: Anaphylaxis is a severe, potentially fatal, systemic allergic reaction. Understanding predictors of recurrent and severe anaphylaxis in adults, and identifying gaps in ongoing anaphylaxis care, is needed to minimise its impact.

Aims: To evaluate the risk factors in adults with severe and recurrent anaphylaxis presentations and to evaluate the management of patients in regard to the recommended cascade of care.

Methods: We completed a retrospective audit of adults with confirmed anaphylaxis who presented to an inner-city emergency department from 1 January 2009 through 31 December 2018. Data recorded included demographics, background history, medication use, severity, co-factors, triggers, management, discharge disposition and referral for follow-up. Data were managed in REDCap and analysed using Stata. Associations were assessed through odds ratios (ORs) and t tests.

Results: Six hundred sixteen individuals had 689 episodes of anaphylaxis over the audit period. Age over 65 (OR: 5.4 (95% confidence interval, CI: 2.3-13.2), P < 0.0001) and history of asthma (OR: 1.6 (95% CI: 1.03-2.5), P = 0.03) were independent risk factors for severe anaphylaxis. History of food allergy (P < 0.001) and food as the trigger were associated with recurrent presentations (OR: 2.1, 95% CI: 1.1-3.9, P = 0.01). Only 19% of patients met the recommended cascade of care, with post-adrenaline monitoring and recommending follow-up with an allergy specialist demonstrating the largest gaps. There were increased presentations with time but no difference in triggers or severity.

Conclusions: Increased age and asthma were identified as risk factors for severe presentations. History of food allergy was a risk factor for recurrent presentations. Further research is needed on the gaps in care for adults with anaphylaxis to identify the reasons why, so we can better care for these patients.

Keywords: allergy; anaphylaxis; emergency medicine; immunology.

- 21 references

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22
Randomized Controlled Trial

PLoS One

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doi: 10.1371/journal.pone.0288623. eCollection 2023.

Impact of airway challenges on cardiovascular risk in asthma - a randomized controlled trial

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Affiliations expand

- PMID: 37459335
- PMCID: PMC10351735
- DOI: 10.1371/journal.pone.0288623

Free PMC article

Abstract

Background: People experiencing asthma exacerbations are at increased risk of cardiovascular events. To better understand the relationship between asthma exacerbations and cardiovascular risk, this randomized case-control, cross-over controlled trial assessed the immediate systemic inflammatory and vascular responses to acutely induced pulmonary inflammation and bronchoconstriction in people with asthma and controls.

Methods: Twenty-six people with asthma and 25 controls underwent three airway challenges (placebo, mannitol, and methacholine) in random order. Markers of cardiovascular risk, including serum C-reactive protein, interleukin-6, and tumor necrosis factor, endothelial function (flow-mediated dilation), microvascular function (blood-flow following reactive hyperemia), and arterial stiffness (pulse wave velocity) were evaluated at baseline and within one hour following each challenge. The systemic responses in a) asthma/control and b) positive airway challenges were analyzed. (ClinicalTrials.gov reg# NCT02630511).

Results: Both the mannitol and methacholine challenges resulted in clinically significant reductions in forced expiratory volume in 1 second (FEV1) in asthma (-7.6% and -17.9%, respectively). Following positive challenges, reduction in FEV1 was -27.6% for methacholine and -14.2% for mannitol. No meaningful differences in predictors of cardiovascular risk were observed between airway challenges regardless of bronchoconstrictor response.

Conclusion: Neither acutely induced bronchoconstriction nor pulmonary inflammation and bronchoconstriction resulted in meaningful changes in systemic inflammatory or vascular function. These findings question whether the increased cardiovascular risk associated with asthma exacerbations is secondary to acute bronchoconstriction or inflammation, and suggest that other factors need to be further evaluated such as the cardiovascular impacts of short-acting inhaled beta-agonists.

Conflict of interest statement

MB has received consulting fees from AstraZeneca, GSK, Sanofi, Covis, BI, and Valeo, payment or honoraria from AstraZeneca, GSK, Valeo, Covis, and has held leadership or fiduciary role for Alberta Health Services and the Canadian Thoracic Society. MSK holds grants from The Lung Association of Alberta and Northwest Territories, has received speaker honoraria from GSK and was a board member for the Lung Association of Alberta and Northwest Territories. This does not alter our adherence to PLOS ONE policies on sharing data and materials.

- 42 references
- 3 figures

supplementary info

Publication types, MeSH terms, Substances, Associated data, Grant supportexpand

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23
JMIR Res Protoc
. 2023 Jul 17;12:e48302.

doi: 10.2196/48302.

Intravenous Magnesium: Prompt Use for Asthma in Children Treated in the Emergency Department (IMPACT-ED): Protocol for a Multicenter Pilot Randomized Controlled Trial

Michael D Johnson[#1], Bradley J Barney[#2], Joseph E Rower[#3], Yaron Finkelstein[#4,5], Joseph J Zorc[#6]

Affiliations expand

- PMID: 37459153
- DOI: 10.2196/48302

Free article

Abstract

Background: Children managed for asthma in an emergency department (ED) may be less likely to be hospitalized if they receive intravenous magnesium sulfate (IVMg). Asthma guidelines recommend IVMg for severely sick children but note a lack of evidence to support this recommendation. All previous trials of IVMg in children with asthma have been too small to answer whether IVMg is effective and safe. A few major questions

remain about IVMg. First, it has not been tested early in the course of ED treatment, when the impact on hospitalization would be greatest. Second, the clinical impact of hypotension, a known adverse effect of IVMg, has not been well characterized in previous research. Third, no trials have compared different IVMg doses or serial serum magnesium (total and ionized) concentrations to optimize dosing, so the most effective dose is unknown. A large, conclusive, randomized, placebo-controlled clinical trial of IVMg might be challenging due to the need to enroll and complete study procedures quickly, a lack of understanding of blood pressure changes after IVMg, and a lack of pharmacologic information to guide the optimal doses of IVMg to be tested. Therefore, a pilot study to inform the above gaps is warranted before conducting a definitive trial.

Objective: The objectives of this study are to (1) demonstrate the feasibility of enrolling children with severe acute asthma in the ED in a multicenter, randomized controlled trial of a placebo, low-dose IVMg, or high-dose IVMg; (2) demonstrate the feasibility of timely delivery of study medication, assessment of blood pressure, and evaluation of adverse events in a standardized protocol; and (3) externally validate a previously constructed pharmacokinetic model and develop a combined pharmacokinetic/pharmacodynamic model for IVMg using magnesium (total and ionized) serum concentrations and their correlation with measures of efficacy and safety.

Methods: This pilot trial tests procedures and gathers information to plan a definitive trial. The pilot trial will enroll as many as 90 children across 3 sites, randomize each child to 1 of 3 study arms, measure blood pressure frequently, and collect 3 blood samples from each participant with corresponding clinical asthma scores.

Results: The project was funded by the National Heart, Lung, and Blood Institute (1 R34HL152047-2) in March 2022. Enrollment began in September 2022, and 43 children have been enrolled as of April 2023. We will submit the results for publication in late 2023.

Conclusions: The results of this study will guide the planning of a large, definitive, multicenter trial powered to evaluate if IVMg reduces hospitalization. Blood pressure measurements will inform a monitoring plan for the larger trial, and blood samples and asthma scores will be used to validate pharmacologic models to select the optimal dose of IVMg to be evaluated in the definitive trial.

Trial registration: ClinicalTrials.gov NCT05166811; https://clinicaltrials.gov/ct2/show/NCT05166811.

International registered report identifier (irrid): DERR1-10.2196/48302.

Keywords: asthma; child; emergency service; feasibility studies; hospitalization; hypotension; magnesium; multicenter studies; randomized controlled trials.

24
J Community Health
. 2023 Jul 17.

doi: 10.1007/s10900-023-01256-y. Online ahead of print.

E-cigarette Use Among Community-Recruited Adults with a History of Asthma in North Central Florida

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Affiliations expand

- PMID: 37458851
- DOI: 10.1007/s10900-023-01256-y

Abstract

Use of e-cigarettes have become an important public health concern in the US, particularly among those with health issues like asthma, which has remained high over the last decade. We examined associations between lifetime e-cigarette use and traditional cigarette use, cannabis use, and related health factors among community members with a history of asthma in North Central Florida. Data came from HealthStreet, a University of Florida community engagement program. Adults with a history of asthma (n = 1,475) were interviewed between 2014 and 2021. Bivariate and logistic regression analyses were conducted to examine differences between participants with and without a history of lifetime e-cigarette use. In this sample, lifetime prevalence of e-cigarette use was 19.9%. Over half of the sample reported ever smoking traditional cigarettes (54.4%) or cannabis (55.4%). Compared to those who identified as White, those who identified as Black/African American had lower odds for lifetime e-cigarette use (aOR = 0.30, 95% CI: 0.22, 0.42). Those reporting lifetime traditional cigarette use (aOR = 10.60, 95% CI: 6.93, 16.68) or cannabis use (aOR = 1.81, 95% CI: 1.27, 2.61) had higher odds for reporting lifetime e-cigarette use. Overall, among a community sample of adults with a history of asthma, nearly a fifth reported lifetime e-cigarette use. The use of e-cigarettes was most common among those with lifetime traditional cigarette use and cannabis use. Findings can inform prevention and intervention efforts in this population.

Keywords: Asthma; Cannabis; Cigarettes; Smoking; e-cigarettes.

- 24 references

supplementary info

Grant supportexpand

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25
Review

Expert Rev Respir Med

. 2023 Jul 20;1-13.

doi: 10.1080/17476348.2023.2237872. Online ahead of print.

Oscillometry in severe asthma: the state of the art and future perspectives

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Affiliations expand

- PMID: 37452692

- DOI: 10.1080/17476348.2023.2237872

Abstract

Introduction: Approximately 3-10% of people with asthma have severe asthma (SA). Patients with SA have greater impairment in daily life and much higher costs. Even if asthma affects the entire bronchial tree, small airways have been recognized as the major site of airflow limitation. There are several tools for studying small airway dysfunction (SAD), but certainly the most interesting is oscillometry. Despite several studies, the clinical usefulness of oscillometry in asthma is still in question. This paper aims to provide evidence supporting the use of oscillometry to improve the management of SA in clinical practice.

Areas covered: In the ATLANTIS study, SAD was strongly evident across all severity. Various tools are available for evaluation of SAD, and certainly an integrated use of these can provide complete and detailed information. However, the most suitable method is oscillometry, implemented for clinical routine by using either small pressure impulses or small pressure sinusoidal waves.

Expert opinion: Oscillometry, despite its different technological implementations is the best tool for determining the impact of SAD on asthma and its control. Oscillometry will also be increasingly useful for choosing the appropriate drug, and there is ample room for a more widespread diffusion in clinical practice.

Keywords: asthma; biologics; management; oscillometry; small airways disfunction; therapy.

26
J Asthma
.
. 2023 Jul 20;1-7.

doi: 10.1080/02770903.2023.2236696. Online ahead of print.

Doxycycline may be more clinically effective in type 2 chronic rhinosinusitis nasal polyp comorbid with asthma

Gülden Paçacı Çetin[1], Bahar Arslan[1], İnsu Yılmaz[1]

Affiliations expand

- PMID: 37437223

- DOI: 10.1080/02770903.2023.2236696

Abstract

Objective: Chronic rhinosinusitis with nasal polyp (CRSwNP) is one of the major phenotypes of chronic rhinosinusitis (CRS) with a high symptom burden. Doxycycline can be used as add-on therapy in CRSwNP. We aimed to evaluate short-term efficacy of oral doxycycline on visual analog scale (VAS) and SNOT-22 (Sino-nasal outcome test) score for CRSwNP.

Methods: Visual analog score (VAS) for nasal symptoms and total SNOT-22 scores of 28 patients who applied with the diagnosis of CRSwNP and received 100 mg doxycycline for 21 days were analyzed in this retrospective cohort study. Doxycycline efficacy was also evaluated in subgroups determined according to asthma, presence of atopy, total IgE and eosinophil levels.

Results: After 21-day doxycycline treatment, there was a significant improvement in VAS score for post-nasal drip, nasal discharge, nasal congestion, and sneeze, and total SNOT-22 score ($p = 0.001$, $p < 0.001$, $p < 0.001$, $p < 0.001$, $p < 0.001$, respectively). No significant improvement was observed in VAS score for the loss of smell ($p = 0.18$). In the asthmatic subgroup, there were significant improvements in all VAS scores and total SNOT-22 score after doxycycline. In the non-asthmatic subgroup, there was no significant change in any of the VAS scores, but total SNOT-22 score was significantly improved (42 [21-78] vs. 18 [9-33]; $p = 0.043$). Improvement in VAS score for loss of smell is significant in only some subgroups like asthmatic patients, non-atopic patients, and patients with eosinophil >300 cell/µL.

Conclusions: Doxycycline can be considered as an add-on treatment for symptom control in patients especially with CRSwNP comorbid with asthma.

Keywords: Polyp; asthma; chronic rhinosinusitis; doxycycline; symptom score.

Reliability and validity of the London Chest Activity of Daily Living scale for adults with asthma

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Affiliations expand

- PMID: 37417908

- DOI: 10.1080/02770903.2023.2234990

Abstract

Introduction: Dyspnea during activities of daily living (ADL) is frequently reported by adults with asthma. However, instruments that specifically assess that in people with asthma have not yet been validated.

Objectives: To investigate the validity and reliability, including standard error of measurement (SEM) and Minimum Detectable Change (MDC), of the London Chest Activity of Daily Living (LCADL) scale for adults with asthma.

Methods: Adults with asthma answered the LCADL scale which was performed twice by the same rater. Spirometry, 6-min walk test (6MWT), St George's Respiratory Questionnaire (SGRQ), modified Medical Research Council (mMRC) dyspnea scale, Asthma Quality of Life questionnaire (AQLQ), Asthma Control Test (ACT), and Glittre-ADL test were assessed. For statistical analyses, Spearman correlation, Wilcoxon test, Intraclass Correlation Coefficient (ICC), Cronbach's alpha coefficient, SEM, MDC were performed.

Results: Seventy participants were included (30% men, 44 ± 15 years old, BMI 27[23-31]kg/m^2, FEV_1 80 ± 17%predicted). For convergent validity, the LCADL scale was moderately correlated with SGRQ, AQLQ, and Glittre-ADL (r = 0.57, -0.46, and 0.41 respectively; $p < 0.0001$). The LCADL scale correlated weakly with the mMRC scale, ACT, and spirometry measures ($-0.23 < r < 0.39$; $p < 0.001$). Weak to strong correlations between the domains of the LCADL scale and the domains of the SGRQ were observed ($0.26 < r < 0.73$; $p < 0.001$). There was no difference between the test-retest of the scale ($p = 0.65$) and reliability analysis shows an ICC_3 of 0.71, a Cronbach's alpha coefficient of 0.87, an SEM of 6.23 points, and an MDC of 17.27 points.

Conclusion: The LCADL scale is valid and reliable for assessing dyspnea during ADL in adults with asthma.

Keywords: Validity and reliability; activities of daily living; asthma; dyspnea.

28
Eur Respir J
. 2023 Jul 20;62(1):2300218.

doi: 10.1183/13993003.00218-2023. Print 2023 Jul.

Airway smooth muscle area to predict steroid responsiveness in COPD patients receiving triple therapy (HISTORIC): a randomised, placebo-controlled, double-blind, investigator-initiated trial

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Affiliations expand

- PMID: 37385657

- DOI: 10.1183/13993003.00218-2023

Abstract

Background: Although inhaled corticosteroids (ICS) are highly effective in asthma, they provide significant, but modest, clinical benefit in COPD. Here, we tested the hypothesis that high bronchial airway smooth muscle cell (ASMC) area in COPD is associated with ICS responsiveness.

Methods: In this investigator-initiated and -driven, double-blind, randomised, placebo-controlled trial (HISTORIC), 190 COPD patients, Global Initiative for Chronic Obstructive Lung Disease stage B-D, underwent bronchoscopy with endobronchial biopsy. Patients were divided into groups A and B, with high ASMC area (HASMC: >20% of the bronchial tissue area) and low ASMC area (LASMC: ≤20% of the bronchial tissue area), respectively, and followed a run-in period of 6 weeks on open-label triple inhaled therapy with aclidinium (ACL)/formoterol (FOR)/budesonide (BUD) (400/12/400 µg twice daily). Subsequently, patients were randomised to receive either ACL/FOR/BUD or ACL/FOR/placebo and followed for 12 months. The primary end-point of the study was the difference in post-bronchodilator forced expiratory volume in 1 s (FEV_1) over 12 months between patients with LASMC and HASMC receiving or not receiving ICS.

Results: In patients with LASMC, ACL/FOR/BUD did not significantly improve FEV_1 over 12 months, as compared to ACL/FOR/placebo (p=0.675). However, in patients with HASMC, ACL/FOR/BUD significantly improved FEV_1, as compared to ACL/FOR/placebo (p=0.020). Over 12 months, the difference of FEV_1 change between the ACL/FOR/BUD group and the ACL/FOR/placebo group was 50.6 mL·year^{-1} within the group of patients with LASMC and 183.0 mL·year^{-1} within the group of patients with HASMC.

Conclusion: COPD patients with HASMC respond better to ICS than patients with LASMC, suggesting that this type of histological analysis may predict ICS responsiveness in COPD patients receiving triple therapy.

Conflict of interest statement

Conflict of interest: D. Stolz reports support for the present manuscript from AstraZeneca (unrestricted grant) and University Hospital Basel; outside the submitted work, D. Stolz reports lecture honoraria from CSL Behring, Berlin-Chemie Menarini, Novartis, GlaxoSmithKline, AstraZeneca, Vifor, Merck, Chiesi and Sanofi, and advisory board membership with GlaxoSmithKline and CSL Behring. A.M. Darie reports grants from University Hospital Basel, lecture honoraria from AstraZeneca and GSK, travel support from OrPha Swiss and Janssen, and advisory board participation with Gebro Pharma and MSD, outside the submitted work. M.J. Herrmann reports lecture honoraria from GSK and OM Pharma, travel support from Sanofi, and advisory board participation with OM Pharma, outside the submitted work. All other authors have no potential conflicts of interest to disclose.

Comment in

- Predicting steroid responsiveness using airway smooth muscle in COPD: a HISTORIC study.
Leung JM, Sin DD.Eur Respir J. 2023 Jul 20;62(1):2300956. doi: 10.1183/13993003.00956-2023. Print 2023 Jul.PMID: 37474151 No abstract available.

29
Med J Aust
.
. 2023 Jul 17;219(2):49-52.

doi: 10.5694/mja2.52000. Epub 2023 Jun 12.

Sleepwalking towards more harm from asthma

Christine R Jenkins[1,2], Philip G Bardin[3], John Blakey[4,5], Kerry L Hancock[6], Peter Gibson[7], Vanessa M McDonald[8]

Affiliations expand

- PMID: 37308167

- DOI: 10.5694/mja2.52000

No abstract available

Keywords: Asthma; Chronic disease; Community care; Primary care.

- 41 references

supplementary info

Publication types, MeSH termsexpand

full text links

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

1

Mol Immunol

. 2023 Jul 20;161:11-24.

doi: 10.1016/j.molimm.2023.07.004. Online ahead of print.

Current practices and future trends in cockroach allergen immunotherapy

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Affiliations expand

- PMID: 37480600

- DOI: 10.1016/j.molimm.2023.07.004

Abstract

Purpose of review: This review evaluates the current modes of allergen-specific immunotherapy for cockroach allergens, in terms of clinical outcomes and explores future trends in the research and development needed for a more targeted cockroach immunotherapy approach with the best efficacy and minimum adverse effects.

Summary: Cockroach allergy is an important risk factor for allergic rhinitis in the tropics, that disproportionately affects children and young adults and those living in poor socio-economic environments. Immunotherapy would provide long-lasting improvement in quality of life, with reduced medication intake. However, the present treatment regime is long and has a risk of adverse effects. In addition, cockroach does not seem to have an immuno-dominant allergen, that has been traditionally used to treat allergies from other sources. Future trends of cockroach immunotherapy involve precision diagnosis, to correctly identify the offending allergen. Next, precision immunotherapy with standardized allergens, which have been processed in a way that maintains an immunological response without allergic reactions. This approach can be coupled with modern adjuvants and delivery systems that promote a Th1/Treg environment, thereby modulating the immune response away from the allergenic response.

Keywords: Allergic rhinitis; Asthma; Cockroach allergy; IgE; Immunotherapy; Recombinant allergens.

Conflict of interest statement

Declaration of Competing Interest KR declare no competing interests. FTC has received consultancy fees from Sime Darby Technology Centre, First Resources Ltd, Genting Plantation, Olam International, and Syngenta Crop Protection, outside the submitted work.

2
Environ Sci Pollut Res Int

. 2023 Jul 21.

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Associations between air pollution and outpatient visits for allergic rhinitis in Lanzhou, China

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Affiliations expand

- PMID: 37479938

- DOI: 10.1007/s11356-023-28457-1

Abstract

There is emerging evidence indicating that short-term exposure to air pollution is associated with the development and occurrence of allergic rhinitis (AR), but limited studies have been conducted in China, and their results were inconsistent. So, quasi-Poisson time series regressions with distributed lag non-linear models (DLNM) were applied to evaluate the lag association between six air pollutants and daily outpatient visits for AR in Lanzhou, China, from January 1, 2014, to December 31, 2019. Stratified analyses were further performed by gender, age, and season. Overall, we found that short-term exposure to air pollutants including $PM_{2.5}$, PM_{10}, SO_2, NO_2, $O_3$8h, and CO was significantly associated with an increased risk of AR outpatient visits. The strongest associations were observed at a lag of 0-7 days for $PM_{2.5}$ (relative risk [RR] = 1.035, 95% confidence intervals [CI]: 1.019-1.052), PM_{10} (RR = 1.006, 95% CI: 1.002-1.011), at a lag of 0-2 days for SO_2 (RR = 1.048, 95% CI: 1.017-1.081), NO_2 (RR = 1.025, 95% CI: 1.010-1.041), at a lag of 0-6 days for $O_3$8h (RR = 1.028, 95% CI: 1.016-1.041), and at a lag of 0-7 days for CO (RR = 1.128, 95% CI: 1.054-1.206). Stratified analyses indicated that males and adults (15-59 years old) appeared to be more sensitive to $PM_{2.5}$, SO_2, NO_2, $O_3$8h, and CO exposure than females and those in other age groups. The effect of CO exposure was statistically significant in all subgroups. Associations between $PM_{2.5}$, PM_{10}, NO_2, and $O_3$8h and AR outpatients were more pronounced in the warm season than in the cold season. The influences of $PM_{2.5}$, PM_{10}, SO_2, NO_2, $O_3$8h, and CO were found to be significantly relevant to AR-associated outpatient. Different pollutants played different roles for different genders, ages, and seasons.

Keywords: AR; Air pollution; Lanzhou; Outpatient visits.

- 21 references

full text links

3
Int Forum Allergy Rhinol
.
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doi: 10.1002/alr.23244. Online ahead of print.

Intramuscular corticosteroid injections should be an option under the policy level recommendation in the international consensus statement on allergic rhinitis

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Affiliations expand

- PMID: 37478135
- DOI: 10.1002/alr.23244

No abstract available

4
Biomark Med
.
. 2023 Jul 21.

doi: 10.2217/bmm-2023-0152. Online ahead of print.

Serum ATG5 concentration relates to Th2 cell, nasal symptoms and therapeutic outcomes in allergic rhinitis patients

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Affiliations expand

- PMID: 37477539

- DOI: 10.2217/bmm-2023-0152

Abstract

Objective: This study aimed to explore the correlation of serum ATG5 levels with the disease risk, Th2/Th1 imbalance, symptoms and therapeutic outcomes of allergic rhinitis (AR) patients. **Methods:** Serum ATG5 levels in 160 AR patients, 30 disease controls and 30 healthy controls were measured by ELISA. AR patients received oral antihistamine, intranasal corticosteroid, leukotriene receptor antagonist monotherapy or their combination as needed for 4 weeks. **Results:** AR patients had elevated ATG5 levels compared with disease controls and healthy controls ($p < 0.001$). In AR patients, ATG5 levels were positively correlated with total nasal symptom scores, IL-4 levels and the IL-4/IFN-γ axis (all $p < 0.05$); the reduction in the ATG5 level was positively related to the total nasal symptom score decline from week 0 to week 4 ($p = 0.038$). **Conclusion:** Serum ATG5 levels have diagnostic and disease-monitoring value in AR management due to their relationship with Th2 cells and symptoms.

Keywords: ATG5; T-helper cell imbalance; allergic rhinitis; nasal symptoms; symptomatic remission.

5
Int Forum Allergy Rhinol
. 2023 Jul 20.

doi: 10.1002/alr.23243. Online ahead of print.

"Intramuscular corticosteroid injections should be an option under the policy level recommendation in the International Consensus Statement on Allergic Rhinitis"

Sarah K Wise, Fuad Baroody

- PMID: 37475593
- DOI: 10.1002/alr.23243

No abstract available

6
Asian Pac J Allergy Immunol
.
. 2023 Jul 16.

doi: 10.12932/AP-070123-1524. Online ahead of print.

Combined effect of hygienic and polygenic risk scores in children with allergic rhinitis

Eom Ji Choi[1], Kun Baek Song[2], Eun Young Baek[1], Min Ji Park[3], Jisun Yoon[4], Sungsu Jung[5], Si Hyeon Lee[6], Mi-Jin Kang[7], Hea Young Oh[8], So-Yeon Lee[1], Kang Seo Park[9], Soo-Jong Hong[1]

Affiliations expand

- PMID: 37466963

- DOI: 10.12932/AP-070123-1524

Abstract

Background: Although the development of allergic rhinitis (AR) is associated with multiple genetic and hygienic environmental factors, previous studies have focused mostly on the effect of a single factor on the development of AR.

Objective: This study aimed to investigate the combined effect of multiple genetic and hygienic environmental risk factors on AR development in school children.

Methods: We conducted a cross-sectional study, comprising 1,797 children aged 9-12 years. Weighted environmental risk score (ERS) was calculated by using four hygienic environmental factors, including antibiotic use during infancy, cesarean section delivery, breast milk feeding, and having older siblings. Weighted polygenic risk score (PRS) was calculated by using four single nucleotide polymorphisms (SNPs), including interleukin-13 (rs20541), cluster of differentiation 14 (rs2569190), toll-like receptor 4 (rs1927911), and glutathione S-transferase P1 (rs1695). Multivariable logistic regression analysis was used.

Results: More than three courses of antibiotic use during infancy increased the risk of current AR (adjusted odd ratio [aOR], 2.058; 95% confidence interval [CI]: 1.290-3.284). Having older siblings, especially > 2 (aOR, 0.526; 95%CI: 0.303-0.913) had a protective effect. High ERS (> median; aOR, 2.079; 95%CI: 1.466-2.947) and PRS (> median; aOR, 1.627; 95%CI: 1.117-2.370) increased the risk of current AR independently. Furthermore, children who had both high ERS and PRS showed a higher risk of current AR (aOR, 3.176; 95%CI: 1.787-5.645).

Conclusions: Exposure to multiple hygienic risk factors during infancy increases the risk of AR in genetically susceptible children.

7
BMC Pulm Med

. 2023 Jul 18;23(1):266.

doi: 10.1186/s12890-023-02556-8.

Comorbid asthma in patients with chronic rhinosinusitis with nasal polyps: did dupilumab make a difference?

Mona Al-Ahmad[#1,2], Asmaa Ali[#3,4,5], Mustafa Khalaf[3], Abdulmohsen Alterki[6], Tito Rodriguez-Bouza[7]

Affiliations expand

- PMID: 37464395
- PMCID: PMC10354942
- DOI: 10.1186/s12890-023-02556-8

Free PMC article

Abstract

Background: The clinical heterogeneity of chronic rhinosinusitis (CRS) and bronchial asthma is attributable to different underlying inflammatory profiles. However, the similarity between CRS with nasal polyps (CRSwNP) and type-2 asthma pathophysiology speculates that one biological therapy could affect both comorbidities. Despite dupilumab, a monoclonal antibody that targets IL-4α and IL-13 receptors, being used in patients with nasal polyps and severe asthma, real-life data about its efficacy in improving the quality of life and patient symptoms is still lacking. This study's primary objective was to evaluate dupilumab treatment's effect on the frequency of olfactory symptoms and health-related quality of life tests as measured by the Sino-nasal outcome test (SNOT-22) in patients with NP. The secondary objective was the effect of dupilumab on asthma symptom control as measured by the asthma control test (ACT).

Methods: A prospective study was conducted of 166 patients with CRSwNP, with or without asthma. The following variables were collected at baseline and after at least six months of continuous dupilumab therapy; SNOT-22, olfactory symptoms frequency, and ACT score.

Results: Asthma prevalence in patients with CRSwNP was high (59.63%), and being female with a history of frequent use of oral corticosteroid (OCS) courses and repeated unsuccessful nasal and para-nasal surgeries for polyposis increased the likelihood of having underlying asthma by 2, 1 and 4 times more, respectively. Additionally, being asthmatic required a longer duration of dupilumab treatment. However, both the health-related quality of life and olfactory symptoms improved equally in both groups.

Conclusion: Even with associated comorbid asthma in patients with CRSwNP, treatment with dupilumab could improve the quality of life, olfactory symptoms, and asthma symptom control.

Keywords: Asthma; Asthma control test; Chronic rhinosinusitis; Dupilumab; Nasal polyps; Sinonasal outcome test.

Conflict of interest statement

All authors declare no conflict of interest. Each author has revised and approved the final version of the manuscript independently.

- 51 references
- 6 figures

supplementary info

MeSH terms, Substancesexpand

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8
Review

Eur Arch Otorhinolaryngol

. 2023 Jul 18.

doi: 10.1007/s00405-023-08117-3. Online ahead of print.

General classification of rhinopaties: the need for standardization according to etiology and nasal cytology

M Gelardi[1], V Fiore[1], R Giancaspro[2], F M Di Canio[1], C Fiorentino[1], S Patruno[1], A Ruzza[1], M Cassano[1]

Affiliations expand

- PMID: 37462742

- DOI: 10.1007/s00405-023-08117-3

Abstract

Background: Rhinitis is as an inflammation of the nasal mucosa, characterized by high prevalence, widespread morbidity, and a significant financial burden on health care systems. Nevertheless, it is often considered as no more than a mere annoyance. This point of view has progressively led to underestimate and trivialize the disease. Therefore, there are numerous, mostly overlapping classifications of rhinopaties, but clear and standardized guidelines for diagnosis and treatment are still lacking. In the context of Precision Medicine, the development of a classification system focused on the endotypes of rhinitis to be widely adopted appears of utmost importance, also by virtue of study of the nasal immunophlogosis that, thanks to nasal cytology (NC), has recently allowed to better define the different forms of rhinitis, giving a new nosological dignity to several rhinopaties.

Aim: We aimed to summarize the current knowledge regarding rhinitis and to propose a systematic classification of rhinitis, based on both etiology and cytological findings.

Keywords: Allergic rhinitis; Classification of rhinopathies; Nasal cytology; Rhinitis; Rhinopathies; Vasomotor rhinitis.

- 31 references

supplementary info

Publication typesexpand

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9
J Dtsch Dermatol Ges
. 2023 Jul 18.

doi: 10.1111/ddg.15123. Online ahead of print.

Current situation of allergological health care at German hospitals

Moritz Maximilian Hollstein[1], Anna Schober[2], Regina Treudler[3], Sven Becker[4], Jelena Epping[5], Eckard Hamelmann[6], Christian Taube[7], Martin Wagenmann[8], Bettina Wedi[9], Margitta Worm[10], Alexander Zink[2], Timo Buhl[1], Thomas Werfel[11], Stephan Traidl[11]

Affiliations expand

- PMID: 37462333

- DOI: 10.1111/ddg.15123

Abstract

Background: Allergic medical care in Germany is organized on an interdisciplinary basis. An overview of the current care situation is necessary to manage and improve interdisciplinary cooperation.

Methods: Between January and February 2022, questionnaires were sent online and by mail to chief physicians of inpatient clinical departments to which most allergological diseases are assigned (dermatology, otorhinolaryngology [ENT], pulmonology, pediatrics, environmental/occupational medicine, gastroenterology; n = 899).

Results: The response rate was 52.1%. Allergology departments of dermatology, ENT and pulmonology were predominantly located in metropolitan areas (> 100,000 inhabitants), whereas responses of pediatric departments were mostly from smaller towns. 76.8% of the respondents reported existing interdisciplinary treatment plans with other specialties. Pediatric and pulmonology clinics stated disproportionately few interdisciplinary treatment concepts with dermatology and ENT clinics, especially in smaller cities with < 100,000 inhabitants. Diagnosis and therapy of allergic rhinitis were performed in particular by the departments of ENT, asthma mainly by the pulmonology departments. Care of other allergological diseases was most frequently reported by chief physicians of dermatology and pediatrics.

Conclusions: In metropolitan areas, participating departments provide allergology care in a cooperative manner. A large spectrum of care is covered in cooperation with dermatological clinics. In more rural areas, cooperation is rarer; here, mainly pediatric departments provide allergological care, which may explain the more limited range of services compared to metropolitan areas.

- 19 references

full text links

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

1
Ital J Pediatr
.
. 2023 Jul 22;49(1):92.

doi: 10.1186/s13052-023-01473-0.

Chronic respiratory disorders due to aberrant innominate artery: a case series and critical review of the literature

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Affiliations expand

- PMID: 37480082

- PMCID: PMC10362608

- DOI: 10.1186/s13052-023-01473-0

Abstract

Background: Tracheal compression (TC) due to vascular anomalies is an uncommon, but potentially serious cause of chronic respiratory disease in childhood. Vascular slings are congenital malformations resulting from abnormal development of the great vessels; in this group of disorders the most prevalent entity is the aberrant innominate artery (AIA). Here we provide a report on diagnosis and treatment of AIA in nine children with unexplained chronic respiratory symptoms. We describe the cases, perform a literature review, and provide a discussion on the diagnostic workup and treatment that can help manage AIA.

Methods: Clinical history, diagnostic procedures and treatment before and after the AIA diagnosis were retrospectively reviewed in nine children (5 boys and 4 girls), who were referred for recurrent-to-chronic respiratory manifestations over 10 years (2012-2022). We performed a comprehensive report on the ongoing clinical course and treatment as well as an electronic literature search on the topic.

Results: Diagnoses at referral, before AIA was identified, were chronic dry barking cough associated with recurrent pneumonia (n = 8, 89%), lobar/segmental atelectasis (n = 3, 33%), atopic/non atopic asthma (n = 3, 33%); pneumomediastinum with subcutaneous emphysema complicated the clinical course in one case. When referred to our Unit, all patients had been previously treated with repeated antibiotic courses (n = 9, 100%), alone (n = 6, 67%) or combined with prolonged antiasthma medications (n = 3, 33%) and/or daily chest physiotherapy (n = 2, 22%), but reported only partial clinical benefit. Median ages at symptom onset and at AIA diagnosis were 1.5 [0.08-13] and 6 [4-14] years, respectively, with a relevant delay in the definitive diagnosis (4.5 years). Tracheal stenosis at computed tomography (CT) was ≥ 51% in 4/9 cases and ≤ 50% in the remaining 5 subjects. Airway endoscopy was performed in 4 cases with CT evidence of tracheal stenosis ≥ 51% and confirmed CT findings. In these 4 cases, the decision of surgery was made based on endoscopy and CT findings combined with persistence of clinical symptoms despite medical treatment. The remaining 5 children were managed conservatively.

Conclusions: TC caused by AIA may be responsible for unexplained chronic respiratory disease in childhood. Early diagnosis of AIA can decrease the use of expensive investigations or unsuccessful treatments, reduce disease morbidity, and accelerate the path toward a proper treatment.

Keywords: Aberrant innominate artery; Chronic dry cough; Recurrent pneumonia; Recurrent respiratory infections; Tracheal compression.

Conflict of interest statement

The authors declare that they have no competing interests.

- 46 references
- 3 figures

full text links

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2
JAMA Otolaryngol Head Neck Surg
.
. 2023 Jul 20;e231757.

doi: 10.1001/jamaoto.2023.1757. Online ahead of print.

Atypical Activation of Laryngeal Somatosensory-Motor Cortex During Vocalization in People With Unexplained Chronic Cough

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Affiliations expand

- PMID: 37471077
- PMCID: PMC10360007

- DOI: 10.1001/jamaoto.2023.1757

Free PMC article

Abstract

Importance: Unexplained chronic cough is common and has substantial negative quality-of-life implications, yet its causes are not well understood. A better understanding of how peripheral and central neural processes contribute to chronic cough is essential for treatment design.

Objective: To determine if people with chronic cough exhibit signs of abnormal neural processing over laryngeal sensorimotor cortex during voluntary laryngeal motor activity such as vocalization.

Design, setting, and participants: This was a cross-sectional study of a convenience sample of participants with chronic cough and healthy participants. Testing was performed in an acoustically and electromagnetically shielded chamber. In a single visit, electroencephalographic (EEG) signals were recorded from participants with chronic cough and healthy participants during voice production. The chronic cough group participants presented with unexplained cough of 8 weeks or longer duration with prior medical evaluation including negative results of chest imaging. None of the participants had a history of any neurologic disease known to impair vocalization or swallowing. Data collection for the healthy control group occurred from February 2 to June 28, 2018, and for the chronic cough group, from November 22, 2021, to June 21, 2022. Data analysis was performed from May 1 to October 30, 2022.

Exposure: Participants with or without chronic cough.

Main outcome measures: Event-related spectral perturbation over the laryngeal area of somatosensory-motor cortex from 0 to 30 Hz (ie, θ, α, and β bands) and event-related coherence as a measure of synchronous activity between somatosensory and motor cortical regions.

Results: The chronic cough group comprised 13 participants with chronic cough (mean [SD] age, 63.5 [7.8] years; 9 women and 4 men) and the control group, 10 healthy age-matched individuals (mean [SD] age, 60.3 [13.9] years; 6 women and 4 men). In the chronic cough group, the typical movement-related desynchronization over somatosensory-motor cortex during vocalization was significantly reduced across θ, α, and β frequency bands when compared with the control group.

Conclusions and relevance: This cross-sectional study found that the typical movement-related suppression of brain oscillatory activity during vocalization is weak or absent in people with chronic cough. Thus, chronic cough affects sensorimotor cortical activity during the asymptomatic voluntary activation of laryngeal muscles.

Conflict of interest statement

Conflict of Interest Disclosures: Dr Misono reported grants from the US National Institutes of Health (NIH) and the American College of Surgeons/Triological Society during the conduct of the study. Dr Konczak reported grants from the NIH and the University of Minnesota during the conduct of the study. No other disclosures were reported.

3
Sci Rep

. 2023 Jul 19;13(1):11654.

doi: 10.1038/s41598-023-38355-8.

Immune response to pertussis vaccine in COPD patients

E Feredj[1,2], A Wiedemann[3,4], C Krief[3,4], B Maitre[5,6], G Derumeaux[5], C Chouaid[6], P Le Corvoisier[7], C Lacabaratz[3,4], S Gallien[8,9], J D Lelièvre[#,8,3,4], L Boyer[#,3,5]

Affiliations expand

- PMID: 37468500
- PMCID: PMC10356756
- DOI: 10.1038/s41598-023-38355-8

Free PMC article

Abstract

Exacerbation triggered by respiratory infection is an important cause of morbidity and mortality in chronic obstructive pulmonary disease (COPD) patients. Strategies aiming to preventing infection may have significant public health impact. Our previous study demonstrated decreased immunological response to seasonal flu vaccination in COPD patients, questioning the efficiency of other vaccines in this group of patients. We performed a prospective, monocenter, longitudinal study that evaluated the humoral and cellular responses upon pertussis vaccination. We included 13 patients with stable COPD and 8 healthy volunteers. No difference in circulating B and T cell subsets at baseline was noted. Both groups presented similar levels of TFH, plasmablasts and pertussis specific antibodies induction after vaccination. Moreover, monitoring T cell immunity after ex-vivo peptide stimulation revealed equivalent induction of functional and specific CD4+ T cells (IFNγ, TNFα and IL-2-expressing T cells) in both groups. Our results highlight the immunological efficiency of pertussis vaccination in this particularly vulnerable population and challenge the concept that COPD patients are less responsive to all immunization strategies. Healthcare providers should stress the necessity of decennial Tdap booster vaccination in COPD patients.

Conflict of interest statement

C.C has consultant arrangements and has received grants from Astra Zeneca, Boehringer Ingelheim, MSD, Pierre Fabre Oncology, Lilly, Roche, Bristol Myers Squibb, and Novartis. J.D.L has board membership with IVIR-AC Comitee WHO, Member of the French NITAG, Work package leader VRI (HIV vaccine-France), Work package leader EHVA project (HIV vaccine-EU), Work package leader Vaccelerate project (COVID19 vaccine-EU). The rest of the authors declare that they have no relevant conflicts of interest.

- 19 references
- 1 figure

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MeSH terms, Substancesexpand

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4
ERJ Open Res
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. 2023 Jul 17;9(4):00157-2023.

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Burden of chronic cough in the UK: results from the 2018 National Health and Wellness Survey

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Affiliations expand

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- PMCID: PMC10350679
- DOI: 10.1183/23120541.00157-2023

Free PMC article

Abstract

Background: Chronic cough, defined as daily cough for at least 8 weeks, negatively affects quality of life and work productivity and increases healthcare resource utilisation. We aimed to determine the prevalence and burden of chronic cough in the UK.

Methods: Study participants were general population respondents to the 2018 UK National Health and Wellness Survey (NHWS). Respondents completed survey questions relating to health, quality of life, work productivity and activity impairment, and use of healthcare resources. Prevalence estimates were projected to the UK population using post-stratification sampling weights to adjust for sampling bias. The population with chronic cough was matched 1:3 with a group without chronic cough, using propensity score matchingon age, sex and the modified Charlson Comorbidity Index.

Results: Of 15 000 NHWS respondents, 715 reported chronic cough in the previous 12 months and 918 during their lifetime. Weighted to the UK adult population, the 12-month prevalence of chronic cough was 4.9% and lifetime prevalence was 6.2%. Prevalence of chronic cough was higher among older respondents and those with smoking histories. Chronic cough respondents experienced higher rates of severe anxiety and depression in the past 2 weeks than matched controls. Poor sleep quality and loss of work productivity were also observed. More chronic cough respondents visited a healthcare provider in the past 6 months than respondents without chronic cough with a mean of 5.8 and 3.7 visits per respondent, respectively.

Conclusion: Adults with chronic cough report lower quality of life, reduced work productivity and greater healthcare resource utilisation than matched controls without chronic cough.

Conflict of interest statement

Conflict of interest: L. McGarvey has received consulting fees from Bayer, Bellus, Merck, Sanofi, Shionogi, Nocion and Chiesi, lecture fees from Glaxo Smith Kline, Merck and Bionorica, and grant support from Merck. Conflict of interest: A.H. Morice has received consulting fees from Bayer, Bellus, Boehringer Ingelheim, Merck, Pfizer, Proctor & Gamble and Shionogi, lecture fees from Boehringer Ingelheim and AstraZeneca, and grant support from Proctor & Gamble, Merck, Afferent and Infirst; and is an associate editor of this journal. Conflict of interest: A. Martin and V.W. Li are employees of Cerner Enviza (formerly Kantar LLC). Conflict of interest: M.J. Doane was an employee of Cerner Enviza (formerly Kantar LLC) during the development and conduct of this study. Conflict of interest: E. Urdaneta, H. Ding and E. Fonseca are employees of Merck Sharp & Dohme LLC, a subsidiary of Merck & Co., Inc., Rahway, NJ, USA, and shareholders in Merck & Co., Inc. Conflict of interest: J. Schelfhout was an employee of Merck Sharp & Dohme LLC, a subsidiary of Merck & Co., Inc., Rahway, NJ, USA and shareholder in Merck & Co., Inc, at the time of the study.

- 36 references
- 3 figures

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5
Int Forum Allergy Rhinol
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Postnasal drip and chronic cough in chronic rhinitis patients treated with temperature-controlled radiofrequency neurolysis

Daniel Gorelik[1], Jumah G Ahmad[2], Samuel E Razmi[3], Masayoshi Takashima[1], Yin Yiu[1], Apurva Thekdi[1], Murugappan Ramanathan[4], Aatin K Dhanda[1], Michael T Yim[5], Omar G Ahmed[1]

Affiliations expand

- PMID: 37461130

- DOI: 10.1002/alr.23238

Abstract

Objective: To evaluate the contribution of postnasal drip (PND) and chronic cough (CC) to the symptomatology of patients with chronic rhinitis treated with temperature-controlled radiofrequency (TCRF) neurolysis of the posterior nasal nerve (PNN), and correlate PND and CC scores with components of the reflective total nasal symptom score (rTNSS).

Methods: Pooled data from three prospective studies: two single-arm studies and the index active treatment arm of a randomized controlled trial. Adult patients with baseline rTNSS ≥6 were treated with TCRF neurolysis at non-overlapping regions of the PNN. PND and CC symptoms were evaluated on a 0-none to 3-severe scale.

Results: Data from 228 patients (57.9% female, 42.1% male) were included. Mean baseline rTNSS was 8.1 (95% CI, 7.8-8.3), which decreased to 3.2 (95% CI, 2.9-3.5) at 6 months. At baseline, 97.4% of patients had PND and 80.3% had CC. Median baseline PND and CC symptom scores were 3 (IQR, 2-3) and 2 (IQR, 1-2), respectively. At 6 months, this had decreased to 1 (IQR, 0-2) and 0 (IQR, 0-1), respectively; significantly improved from

baseline (both P <.001). Spearman correlation coefficients with components of rTNSS (rhinorrhea, congestion, itching, sneezing) were 0.16-0.22 for CC and 0.19-0.46 for PND, indicating only weak to moderate correlation.

Conclusion: PND and CC contribute to symptomatology of chronic rhinitis patients, and are significantly improved after TCRF neurolysis of the PNN. Inclusion of PND and CC symptoms in a chronic rhinitis assessment instrument could provide important additional information for characterization of the disease state and outcomes after any therapeutic treatment.

Keywords: Postnasal drip; chronic cough; chronic rhinitis; posterior nasal nerve; rTNSS; temperature-controlled radiofrequency neurolysis.

6
Clin Respir J
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doi: 10.1111/crj.13663. Online ahead of print.

Treatment with inhaled antibiotics in bronchiectasis, side effects, and evaluation of the tolerance test; analysis from the BATTLE randomized controlled trial

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Affiliations expand

- PMID: 37460410

- DOI: 10.1111/crj.13663

Abstract

Introduction: Tobramycin inhalation solution (TIS) is a treatment option for patients with frequent exacerbations of bronchiectasis. A possible side effect of TIS is the development of chronic cough and bronchospasm, whereby the guidelines suggest a (in hospital) tolerance test with the first dose of TIS. However, data on respiratory adverse events are not consistent. In the present analysis from the BATTLE study (NCT02657473), we evaluated the added value of the tolerance test and aimed to observe the development of inhaled treatment related bronchial hyperreactivity.

Methods: Fifty-seven patients from the BATTLE study were analyzed. Patients were randomized to receive TIS or placebo OD for 1 year. A tolerance test was performed with spirometry measurements before and after the first dose and with a bronchodilator in advance. Adverse events were strictly monitored.

Results: Fifty-seven patients (100%) passed the tolerance test with no decrease in spirometry measurements or development of local intolerability. During the study treatment, a total of five TIS-treated patients (17.8%) withdrew due to airway hyperresponsiveness after a mean of 9.2 (SD13.9) weeks and one placebo-treated patient (3.5%) after 2 weeks (TIS vs. placebo; p = 0.66). The other TIS-related adverse events were not clinically significant.

Conclusion: The use of inhaled medication is well tolerated in the heterogenous bronchiectasis population, without signs of airway hyperresponsiveness after the first dose of inhaled medication. From this observation, it can be concluded that there is no additional value for this advised tolerance test. However, closely monitoring on adverse effects during the first weeks after starting TIS is recommended.

Keywords: airway hyperresponsiveness; bronchiectasis; side effects; tobramycin inhalation solution; tolerance test.

- 15 references

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

1
Respir Med
.
. 2023 Jul 20;107366.

doi: 10.1016/j.rmed.2023.107366. Online ahead of print.

Monotherapy: Key cause of macrolide-resistant Mycobacterium avium complex disease

Daniel Loewenstein[1], Lars van Balveren[1], Arthur Lemson[2], Nicolien Hanemaaijer[1], Wouter Hoefsloot[2], Jakko van Ingen[3]

Affiliations expand

- PMID: 37481170

- DOI: 10.1016/j.rmed.2023.107366

Abstract

Background: Macrolide-resistant Mycobacterium avium complex (MAC) disease is very difficult to cure. Macrolide-resistance emerges in patients and is largely preventable by appropriate screening and treatment practices.

Methods: Patients with macrolide-resistant MAC isolates between March 2019 and March 2022 were retrieved from the mycobacteriology reference laboratory database at Radboudumc, Nijmegen, the Netherlands. Clinical consultation reports were extracted from the database to assess the cause of macrolide resistance.

Results: Sixteen patients with macrolide-resistant MAC disease were included, from a total of 815 patients with MAC isolates (2%); Macrolide monotherapy in bronchiectasis or CF was the most frequent cause of development of macrolide-resistance MAC disease (n = 8; 50%). Short (n = 3; mean duration 9 months, range 6-12) or guideline non-compliant (n = 2) treatment regimens and patient non-adherence (n = 2) were other key causes of macrolide-resistance.

Conclusions: Macrolide monotherapy after inappropriate screening is the most frequent cause of macrolide-resistant Mycobacterium avium complex disease in the Netherlands. Educational efforts are needed to prevent this.

Conflict of interest statement

Declaration of competing interest There is no conflict of interest.

2
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Treatment with inhaled antibiotics in bronchiectasis, side effects, and evaluation of the tolerance test; analysis

from the BATTLE randomized controlled trial

Lotte C Terpstra[1], Daphne van der Geest[1], Inez Bronsveld[2], Harry Heijerman[2], Wim G Boersma[1]

Affiliations expand

- PMID: 37460410

- DOI: 10.1111/crj.13663

Abstract

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Conclusion: The use of inhaled medication is well tolerated in the heterogenous bronchiectasis population, without signs of airway hyperresponsiveness after the first dose of inhaled medication. From this observation, it can be concluded that there is no additional value for this advised tolerance test. However, closely monitoring on adverse effects during the first weeks after starting TIS is recommended.

Keywords: airway hyperresponsiveness; bronchiectasis; side effects; tobramycin inhalation solution; tolerance test.

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Eur Respir J

. 2023 Jul 20;62(1):2202053.

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European Respiratory Society statement on airway clearance techniques in adults with bronchiectasis

Beatriz Herrero-Cortina[1,2,3], Annemarie L Lee[4,5], Ana Oliveira[6,7,8,9], Brenda O'Neill[10], Cristina Jácome[11,12], Simone Dal Corso[13,14], William Poncin[15,16,17], Gerard Muñoz[18,19], Deniz Inal-Ince[20], Victoria Alcaraz-Serrano[21,22], Gregory Reychler[15,16,17], Angela Bellofiore[23,24], Annette Posthumus[25]; Patient representative; Thomy Tonia[26], James D Chalmers[27], Arietta Spinou[28,29]

Affiliations expand

- PMID: 37142337

- DOI: 10.1183/13993003.02053-2022

Abstract

Airway clearance techniques (ACTs) are part of the main management strategy for patients with bronchiectasis. Despite being a priority for patients, accessibility, implementation and reporting of ACTs are variable in clinical settings and research studies. This European Respiratory Society statement summarises current knowledge about ACTs in adults with bronchiectasis and makes recommendations to improve the future evidence base. A task force of 14 experts and two patient representatives (10 countries) determined the scope of this statement through consensus and defined six questions. The questions were answered based on systematic searches of the literature. The statement provides a comprehensive review of the physiological rationale for ACTs in adults with bronchiectasis, and the mechanisms of action along with the advantages and disadvantages of each ACT. Evidence on ACTs in clinical practice indicates that the most frequently used techniques are active cycle of breathing techniques, positive expiratory pressure devices and gravity-assisted drainage, although there is limited evidence on the type of ACTs used in specific countries. A review of 30 randomised trials for the effectiveness of ACTs shows that these interventions increase sputum clearance during or after treatment, reduce the impact of cough and the risk of exacerbations, and improve health-related quality of life. Furthermore, strategies for reducing the risk of bias in future studies are proposed. Finally, an exploration of patients' perceptions, barriers and enablers related to this treatment is also included to facilitate implementation and adherence to ACTs.

Conflict of interest statement

Conflict of interest: J.D. Chalmers has received research grants from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Gilead Sciences, Grifols, Novartis and Insmed, and received consultancy or speaker fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Insmed, Janssen, Novartis and Zambon. T. Tonia reports acting as the ERS Methodologist. The remaining authors have nothing to disclose.