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COPD

Curr Opin Pulm Med

. 2022 Jul 16.

doi: 10.1097/MCP.0000000000000890. Online ahead of print.

Emerging phenotypes of pulmonary hypertension associated with COPD a field guide

Agustín Roberto García[1], Lucilla Piccari[2]

Affiliations expand

- PMID: 35838373

- DOI: 10.1097/MCP.0000000000000890

Abstract

Purpose of review: Pulmonary hypertension (PH) is a common complication of chronic obstructive lung disease (COPD), but clinical presentation is variable and not always 'proportional' to the severity of the obstructive disease. This review aims to analyze heterogeneity in clinical features of PH-COPD, providing a guide for diagnosis and management according to phenotypes.

Recent findings: Recent works have focused on severe PH in COPD, providing insights into the characteristics of patients with predominantly vascular disease. The recently recognized 'pulmonary

vascular phenotype', characterized by severe PH and mild airflow obstruction with severe hypoxemia, has markedly worse prognosis and may be a candidate for large trials with pulmonary vasodilators. In severe PH, which might be best described by a pulmonary vascular resistance threshold, there may also be a need to distinguish patients with mild COPD (pulmonary vascular phenotype) from those with severe COPD ('Severe COPD-Severe PH' phenotype).

Summary: Correct phenotyping is key to appropriate management of PH associated with COPD. The lack of evidence regarding the use of pulmonary vasodilators in PH-COPD may be due to the existence of previously unrecognized phenotypes with different responses to therapy. This review offers the clinician caring for patients with COPD and PH a phenotype-focused approach to diagnosis and management, aimed at personalized care.

- 98 references

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J Med Econ

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. 2022 Jul 15;1-29.

doi: 10.1080/13696998.2022.2098630. Online ahead of print.

Impact of influenza infection on the short- and long-term health of patients with chronic obstructive pulmonary disease

Chris Wallick[1], Tu My To[1], Stephan Korom[1], Henry Masters 3rd[1], Nicola A Hanania[2], Dalia Moawad[1]

Affiliations expand

- PMID: 35837794

- DOI: 10.1080/13696998.2022.2098630

Abstract

Background: Influenza is a common cause of acute respiratory infection that leads to exacerbation of underlying chronic obstructive pulmonary disease (COPD). To elucidate the short- and long-term effects of influenza in patients with COPD, we examined health care resource utilization (HRU) and costs up to 13-months following influenza infection.

Methods: We conducted a retrospective cohort study using U.S. insurance claims data from MarketScan®. Patients with an influenza diagnosis during the 2012-2014 influenza seasons and continuous enrollment in a health plan from 12 months before to 13 months after the index influenza diagnosis were identified and propensity score-matched 1:5 to controls without evidence of influenza. COPD- and pneumonia-related outcomes were assessed over 13 months following influenza diagnosis.

Results: COPD-associated outcomes after diagnosis were significantly worse in patients with influenza (n = 7087) vs controls (n = 35,435) during the first month (exacerbation: 16.1% vs 3.4%; outpatient visits: 57.1% vs 35.2%; emergency department (ED) visits: 10.5% vs 1.8%; and inpatient visits: 5.6% vs 0.7%) and months 2-13 (exacerbation: 25.1% vs 21.1%; outpatient visits: 86.1% vs 85.8%; ED visits: 20.0% vs 15.7%; and inpatient visits: 6.5% vs 5.3%). COPD- and pneumonia-associated costs for months 1 and 2-13 were higher in patients with influenza.

Limitations: The study was subject to residual imbalance between cohorts despite propensity score matching. Use of diagnostic codes to select patients and identify complications could introduce inaccuracies in estimating events.

Conclusions: HRU and costs were higher in COPD patients with influenza during the first month and over the entire year following infection. This suggests influenza has an impact on respiratory health in patients with COPD that lasts beyond the acute infection.

Keywords: COPD; I; I1; I10; I12; chronic obstructive pulmonary disease; claims database; costs; health care resource utilization; influenza; long-term.

BMC Prim Care

. 2022 Jul 14;23(1):174.

doi: 10.1186/s12875-022-01787-8.

Patient perspectives on the management of COPD and Type 2 Diabetes in general practice: an interview study

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Affiliations expand

- PMID: 35836109

- DOI: 10.1186/s12875-022-01787-8

Abstract

Background: The Danish healthcare system has undergone fundamental organisational changes. In recent years, treatment of most patients with chronic obstructive pulmonary disease (COPD) and type 2 diabetes (T2D) in Denmark has been transferred from specialised hospitals to general practices, and only the most complicated cases are treated at hospital outpatients clinics or are admitted. This transfer aimed to reduce costs without compromising quality of care and ensure that the treatment was managed by general practitioners (GPs) who had personal knowledge of the patient. In this paper, we explore patients' perceptions of the quality of care provided by their GPs.

Methods: A qualitative research study was conducted with semi-structured interviews of 24 informants; nine were diagnosed with COPD and 15 were diagnosed with T2D. Snowball sampling was used for recruitment. Data were analysed using systematic text condensation.

Results: The interviews revealed four main themes: 1) The informants perceived the quality of their treatment in general practice to be high due to their personal relationship with their GPs. 2) The informants valued their GP's knowledge about them, their lives, and their illnesses. 3) The informants expressed a high degree of satisfaction with the quality of care received in general practice. 4) The informants expressed that geographical distance to the general practice was of minor importance to them.

Conclusion: The patients perceived that the quality of the care and treatment they received were high following the transfer of COPD and T2D treatment to general practice. A strong, trusting relationship between the GP and the patient and the increased availability of the GP both contributed to their satisfaction with the GPs' services.

Keywords: General practice; Organisational Changes; Primary Care; Qualitative research.

- 20 references

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Biochem Cell Biol

. 2022 Jul 14.

doi: 10.1139/bcb-2021-0251. Online ahead of print.

Pristimerin alleviates cigarette smoke-induced inflammation in chronic obstructive pulmonary disease via inhibiting NF-κB pathway

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Affiliations expand

- PMID: 35833632

- DOI: 10.1139/bcb-2021-0251

Abstract

Cigarette smoke (CS) is a risk factor for chronic obstructive pulmonary disease (COPD), which can exacerbate inflammation and oxidative stress. Pristimerin (Pris) is a natural compound with antioxidant and anti-inflammatory effects. We managed to evaluate the protective effects of Pris on CS-induced COPD. The CS-induced COPD mice model and cell model were constructed. The effects of Pris treatment on lung function, inflammatory cell infiltration, myeloperoxidase (MPO), and pathological changes of lung tissues in mice model were evaluated. The impacts of Pris treatment on inflammatory factors, chemokines, and oxidative stress parameters in mice lung tissues and cells were determined by kits. The viability of human bronchial epithelial cells after Pris treatment was tested by CCK-8. The activation of NF-κB pathway was confirmed by Western blot

and immunofluorescence. CS treatment impaired lung function, reduced weight of mice, and enhanced inflammatory cell infiltration, MPO, and lung tissue damage, but these effects of CS were reversed by Pris treatment. Furthermore, Pris treatment downregulated the levels of malondialdehyde, IL-6, IL-1β, TNF-α, CXCL1, and CXLC2, but upregulated superoxide dismutase and catalase levels. Pris treatment could overturn CS-induced activation of the NF-κB pathway. Pris alleviates CS-induced COPD by inactivating NF-κB pathway.

Keywords: NF-κB pathway; bronchopneumopathie chronique obstructive; chronic obstructive pulmonary disease; cigarette smoke; fumée de cigarette; inflammation; oxidative stress; pristimerin; pristimérine; stress oxydant; voie NF-κB.

Respirology

. 2022 Jul 13.

doi: 10.1111/resp.14328. Online ahead of print.

Chronic obstructive pulmonary disease (COPD) mortality trends worldwide: An update to 2019

Federico Mei[1,2], Michela Dalmartello[3], Martina Bonifazi[1,2], Paola Bertuccio[4], Fabio Levi[5], Paolo Boffetta[6,7], Eva Negri[3,7,8], Carlo La Vecchia[3], Matteo Malvezzi[3]

Affiliations expand

- PMID: 35831204

- DOI: 10.1111/resp.14328

Abstract

Background and objective: Chronic obstructive pulmonary disease (COPD) incidence, prevalence, mortality and socioeconomic burden are considerable and vary across countries. The aim of the present study was to update the analysis of COPD mortality worldwide using data from the World Health Organization (WHO) up to 2019.

Methods: We obtained COPD mortality and population data for 22 European countries and the European Union (EU) as a whole, 10 American countries and six other countries from the WHO mortality database. We calculated age-standardized mortality rates in both sexes and examined trends by country with joinpoint analysis between 1994 and 2019.

Results: Between 2005-2007 and 2015-2017, overall COPD mortality decreased in EU men (-16.3%) but increased in women (12.7%) to reach rates of 14.0/100,000 in men and of 6.4/100,000 in women. In the United States, mortality declined in men to 21.3/100,000 but rose in women to 18.3/100,000. Mortality declined in most Latin American countries and all Asian countries, while an increase in Australian women was observed.

Conclusion: A steady decrease in COPD mortality was observed in most of countries for men, whilst a different trend was observed in women in several countries. These trends are largely explained by changes in smoking habits, with an additional contribution of air pollution and occupational exposures. Despite past and ongoing tobacco control initiatives, this condition still remains a leading cause of death, in particular in countries with lower socio-demographic indices.

Keywords: COPD; chronic obstructive pulmonary disease; epidemiology; mortality; trend; worldwide.

- 44 references

SUPPLEMENTARY INFO

Grant supportexpand

FULL TEXT LINKS

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Ann Am Thorac Soc

. 2022 Jul 13.

doi: 10.1513/AnnalsATS.202110-1127OC. Online ahead of print.

Unsupervised Learning Identifies CT Measurements as Primary Drivers of Progression, Exacerbation, and Mortality in COPD

Nancy F Yuan[1], Kyle Hasenstab[2], Tara Retson[3], Douglas J Conrad[4], David A Lynch[5], Albert Hsiao[3]

Affiliations expand

- PMID: 35830591

- DOI: 10.1513/AnnalsATS.202110-1127OC

Abstract

Rationale: Chronic obstructive pulmonary disease (COPD) is a heterogeneous syndrome, with phenotypic manifestations that tend to be distributed along a continuum. Unsupervised machine learning based on broad selection of imaging and clinical phenotypes may be used to identify primary variables that define disease axes and stratify patients with COPD.

Objectives: To identify primary variables driving COPD heterogeneity using principal component analysis (PCA), and to define disease axes and assess the prognostic value of these axes across three outcomes: progression, exacerbation, and mortality.

Methods: We included 7331 patients between 39 and 85 years, of which 40.3% are black and 45.8% are female smokers with a mean of 44.6 pack years from the COPDGene Phase 1 cohort (2008-2011) in our analysis. Out of a total of 916 phenotypes, 147 continuous clinical, spirometric, and CT features were selected. For each component (PC), we computed a principal component score (PCS) based on feature weights. We used PCS distributions to define disease axes along which we divided the patients into quartiles. To assess the prognostic value of these axes, we applied logistic regression analyses to estimate 5-year (n=4159) and 10-year (n=1487) odds of progression. Cox regression and Kaplan-Meier analyses were performed to estimate 5-year and 10-year risk of exacerbation (n=6532) and all-cause mortality (n=7331).

Results: The first PC, accounting for 43.7% of variance, was defined by CT measures of air trapping and emphysema. The second PC, accounting for 13.7% of variance, was defined by spirometric and CT measures of vital capacity and lung volume. The third PC, accounting for 7.9%

of the variance, was defined by CT measures of lung mass, airway thickening, and body habitus. Stratification of patients across each disease axis revealed up to 3.2-fold [2.4, 4.3] greater odds of 5-year progression, 5.4-fold [4.6, 6.3] greater risk of 5-year exacerbation, and 5.0-fold [4.2, 6.0] greater risk of 10-year mortality between the highest and lowest quartiles.

Conclusions: Unsupervised learning analysis of the COPDGene cohort reveals CT measurements may bolster patient stratification along the continuum of COPD phenotypes. Each of the disease axes also individually demonstrate prognostic potential, predictive of future FEV1 decline, exacerbation, and mortality.

Review

Amino Acids

. 2022 Jul 13.

doi: 10.1007/s00726-022-03185-x. Online ahead of print.

N-Acetyl-L-cysteine in human rheumatoid arthritis and its effects on nitric oxide (NO) and malondialdehyde (MDA): analytical and clinical considerations

Dimitrios Tsikas[1], Marie Mikuteit[2]

Affiliations expand

- PMID: 35829920

- DOI: 10.1007/s00726-022-03185-x

Abstract

N-Acetyl-L-cysteine (NAC) is an endogenous cysteine metabolite. The drug is widely used in chronic obstructive pulmonary disease (COPD) and as antidote in acetaminophen (paracetamol) intoxication. Currently, the utility of NAC is investigated in rheumatoid arthritis (RA), which is generally considered associated with inflammation and oxidative stress. Besides clinical laboratory parameters, the effects of NAC are evaluated by measuring in plasma or serum nitrite, nitrate or their sum (NOx) as measures of nitric oxide (NO) synthesis. Malondialdehyde (MDA) and relatives such as 4-hydroxy-nonenal and 15(S)-8-iso-prostaglandin $F_{2\alpha}$ serve as measures of oxidative stress, notably lipid peroxidation. In this work, we review recent clinico-pharmacological studies on NAC in rheumatoid arthritis. We discuss analytical, pre-analytical and clinical issues and their potential impact on the studies outcome. Major issues include analytical inaccuracy due to interfering endogenous substances and artefactual formation of MDA and relatives during storage in long-term studies. Differences in the placebo and NAC groups at baseline with respect to these biomarkers are also a serious concern. Modern applied sciences are based on data generated using commercially available instrumental physico-chemical and immunological technologies and assays. The publication process of scientific work rarely undergoes rigorous peer review of the analytical approaches used in the study in terms of accuracy/trueness. There is pressing need of considering previously reported reference concentration ranges and intervals as well as specific critical issues such as artefactual formation of particular biomarkers during sample storage. The latter especially applies to surrogate biomarkers of oxidative stress, notably MDA and relatives. Reported data on NO, MDA and clinical parameters, including C-reactive protein, interleukins and tumour necrosis factor α, are contradictory in the literature. Furthermore, reported studies do not allow any valid conclusion about utility of NAC in RA. Administration of NAC patients with rheumatoid arthritis is not recommended in current European and American guidelines.

Keywords: Artefacts; Guidelines; Malondialdehyde; Nitrate; Nitric oxide; Nitrite; Oxidative stress; Peer reviewing; Rheumatoid arthritis; Sample storage.

- 54 references

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

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Tuberc Respir Dis (Seoul)

. 2022 Jul 13.

doi: 10.4046/trd.2022.0074. Online ahead of print.

Long-term outcome of chronic obstructive pulmonary disease: A review

Yong Suk Jo[1]

Affiliations expand

- PMID: 35822318

- DOI: 10.4046/trd.2022.0074

Free article

Abstract

Chronic obstructive pulmonary disease (COPD) is a chronic airway inflammation characterized by fixed airflow limitation and chronic respiratory symptoms, such as cough, sputum, and dyspnea. COPD is a progressive disease characterized by a decline in lung function. During the natural course of the disease, acute deterioration of symptoms leading to hospital visits can occur and influence further disease progression and subsequent exacerbation. Moreover, COPD is not only restricted to pulmonary manifestations but can present with other systemic diseases as comorbidities or systemic manifestations, including lung cancer, cardiovascular disease, pulmonary hypertension, sarcopenia, and metabolic abnormalities. These pulmonary and extrapulmonary conditions lead to the aggravation of dyspnea, physical inactivity, decreased exercise capacity, functional decline, reduced quality of life, and increased mortality. In addition, pneumonia, which is attributed to both COPD itself and an adverse effect of treatment (especially the use of inhaled and/or systemic steroids), can occur and lead to further deterioration in the prognosis of COPD. This review summarizes the long-term outcomes of patients with COPD. In addition, recent studies on the prediction of adverse outcomes are summarized in the last part of the review.

Keywords: Chronic Obstructive Pulmonary Disease; exacerbation, mortality; lung function; outcome.

Tuberc Respir Dis (Seoul)

. 2022 Jul 13.

doi: 10.4046/trd.2022.0029. Online ahead of print.

Phenotype of Chronic Obstructive Pulmonary Disease Based on Computed Tomography-Defined Underlying Pathology

Won-Dong Kim [1]

Affiliations expand

- PMID: 35822317

- DOI: 10.4046/trd.2022.0029

Free article

Abstract

Chronic obstructive pulmonary disease (COPD) is a complex and heterogeneous disease and not all patients respond to available drugs. Identifying respondents to therapy is critical to delivering the most appropriate treatment and avoiding unnecessary medication. Recognition of an individual patient's dominant characteristics by phenotype is a useful tool to better understand their disease and tailor treatment accordingly. To look for a suitable phenotype, it is important to understand what makes COPD complex and heterogeneous. The pathology of COPD includes small airway

disease and/or emphysema, so COPD is not a single disease entity. In addition, there are two types of panlobular and centrilobular emphysema in COPD. It is therefore conceivable that the coexistence of different pathological subtypes could be the reason for the complexity and heterogeneity of COPD. Then it is necessary to look for the phenotype based on the difference in the underlying pathology. Review of the literature has shown that there is a difference in the clinical manifestation and the therapeutic response to pharmacological therapy depending on the presence of computed tomography (CT)-defined airway wall thickening in COPD patients. Defining the phenotype of COPD based on the underlying pathology is encouraging as most clinical manifestations can be distinguished by the presence of increased airway wall thickness. Pharmacological therapy has shown significant effects in COPD with airway wall thickening, but limited use in COPD without airway disease. The Phenotype of COPD based on the underlying pathology can be a useful tool to better understand the disease and adjust treatment accordingly.

Keywords: Centrilobular Emphysema; Chronic Obstructive Pulmonary Disease; Emphysema; Panlobular Emphysema; Phenotype; Small Airway Disease.

Review

Intern Emerg Med

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. 2022 Jul 12.

doi: 10.1007/s11739-022-03037-2. Online ahead of print.

Ergogenic value of oxygen supplementation in chronic obstructive pulmonary disease

Dimitrios Megaritis[1], Peter D Wagner[2,3], Ioannis Vogiatzis[2]

Affiliations expand

- PMID: 35819698

- DOI: 10.1007/s11739-022-03037-2

Abstract

Patients with COPD exhibit limited exercise endurance time compared to healthy age-matched individuals. Oxygen supplementation is often applied to improve endurance time during pulmonary rehabilitation in patients with COPD and thus a comprehensive understanding of the mechanisms leading to improved endurance is desirable. This review analyses data from two studies by our research group investigating the effect of oxygen supplementation on cerebrovascular, systemic, respiratory and locomotor muscle oxygen availability on the same cohort of individuals with advanced COPD, and the mechanisms associated with improved endurance time in hyperoxia, which was essentially doubled (at the same power output). In hyperoxia at isotime (the time at which patients became exhausted in normoxia) exercise was associated with greater respiratory and locomotor muscle (but not frontal cortex) oxygen delivery (despite lower cardiac output), lower lactate concentration and less tachypnoea. Frontal cortex oxygen saturation was higher, and respiratory drive lower. Hence, improved endurance in hyperoxia appears to be facilitated by several factors: increased oxygen availability to the respiratory and locomotor muscles, less metabolic acidosis, and lower respiratory drive. At exhaustion in both normoxia and hyperoxia, only cardiac output and breathing pattern were not different between conditions. However, minute ventilation in hyperoxia exceeded the critical level of ventilatory constraints (V_E/MVV > 75-80%). Lactate remained lower and respiratory and locomotor muscle oxygen delivery greater in hyperoxia, suggesting greater muscle oxygen availability improving muscle function. Taken together, these findings suggest that central haemodynamic and ventilatory limitations and not contracting muscle conditions dictate endurance time in COPD during exercise in hyperoxia.

Keywords: COPD; Exercise tolerance; Oxygen supplementation.

- 34 references

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Ann Intensive Care

. 2022 Jul 11;12(1):66.

doi: 10.1186/s13613-022-01044-2.

"Physiological effects of high-intensity versus low-intensity noninvasive positive pressure ventilation in patients with acute exacerbation of chronic obstructive pulmonary disease: a randomised controlled trial"

Radhouane Toumi[#123], Khaoula Meddeb[#123], Mohamed Boussarsar[#456]

Affiliations expand

- PMID: 35819641
- PMCID: PMC9276907
- DOI: 10.1186/s13613-022-01044-2

Free PMC article

No abstract available

Conflict of interest statement

The authors declare that they have no competing interests.

Comment on

- doi: 10.1186/s13613-022-01018-4
- 4 references

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Ann Intensive Care

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. 2022 Jul 11;12(1):67.

doi: 10.1186/s13613-022-01041-5.

Response to a letter on "Physiological effects of high-intensity versus low-intensity noninvasive positive pressure ventilation in patients with acute exacerbation of chronic obstructive pulmonary disease: a randomised controlled trial"

Zujin Luo[1,2], Zhixin Cao[2], Chen Wang[3,4,5,6]

Affiliations expand

- PMID: 35819559

- DOI: 10.1186/s13613-022-01041-5

Expert Rev Respir Med

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. 2022 Jul 12;1-8.

doi: 10.1080/17476348.2022.2099378. Online ahead of print.

Validity of the Activities-specific Balance Confidence Scale in individuals with chronic obstructive pulmonary disease

Sanaa A Alsubheen[1], Marla K Beauchamp[1,2], Cindy Ellerton[2,3], Roger Goldstein[2,3,4,5], Jennifer A Alison[6,7], Gail Dechman[8,9], Kimberley J Haines[10], Samantha L Harrison[11], Anne E Holland[12,13,14], Annemarie L Lee[14,15,16], Alda Marques[17], Lissa Spencer[6,18], Michael Stickland[19,20], Elizabeth H Skinner[10,15], Dina Brooks[3,4,5,13]

Affiliations expand

- PMID: 35792741

- DOI: 10.1080/17476348.2022.2099378

Abstract

Background: Limited research assessed the validity of the Activities-specific Balance Confidence, ABC) Scale in individuals with chronic obstructive pulmonary disease, COPD) at risk of falls. We report on the scale's construct and criterion validity.

Methods: Construct validity was established by assessing known groups, convergent, and divergent validity. A receiver operating characteristic, (ROC) curve and logistic regression examined the criterion validity of the scale.

Results: In 223 individuals with COPD, the ABC Scale significantly, ($p < 0.001$) discriminated between groups, with lower scores for females [Mean difference (MD) = 10%], rollator use [MD = 13%], and fallers [MD = 12%], and had a strong association [r = 0.58, $p < 0.001$] with Berg Balance Scale. The scale distinguished fallers from non-fallers with a cutoff value of 58% [Area Under the Curve = 0.64, 95% CI = 0.57-0.72, $p < 0.001$] and significantly identified fall status [B, SE = -0.03, 0.01, $p < 0.001$] with an odds ratio of 0.97 [95%CI = 0.96-0.99]. The sensitivity, specificity, and test accuracy were: 61, 58, and 60%, respectively.

Conclusion: The ABC Scale showed evidence for known groups, convergent, and divergent validity and can assist in identifying fall status in individuals with COPD.

Keywords: ABC Scale; COPD; balance confidence; fall status; validity.

Editorial

Am J Respir Crit Care Med

. 2022 Jul 15;206(2):131-132.

doi: 10.1164/rccm.202204-0743ED.

Premature Aging of the Airway Epithelium in Chronic Obstructive Pulmonary Disease in People Living with HIV

Robert J Kaner[1,2]

Affiliations expand

- PMID: 35579631

- DOI: 10.1164/rccm.202204-0743ED

No abstract available

Comment on

- Airway Aging and Methylation Disruptions in HIV-associated Chronic Obstructive Pulmonary Disease.
  Hernández Cordero AI, Yang CX, Yang J, Horvath S, Shaipanich T, MacIsaac J, Lin DTS, Kobor MS, Guillemi S, Harris M, Lam W, Lam S, Montaner J, Man SFP, Sin DD, Leung JM.Am J Respir Crit Care Med. 2022 Jul 15;206(2):150-160. doi: 10.1164/rccm.202106-1440OC.PMID: 35426765

Editorial

Am J Respir Crit Care Med

. 2022 Jul 15;206(2):139-141.

doi: 10.1164/rccm.202204-0695ED.

Chronic Obstructive Pulmonary Disease–Obstructive Sleep Apnea Overlap: More Than a Casual Acquaintance

Octavian C Ioachimescu[1,2], Walter T McNicholas[3,4]

Affiliations expand

- PMID: 35549667

- DOI: 10.1164/rccm.202204-0695ED

No abstract available

Comment on

- Impact of Positive Airway Pressure Therapy Adherence on Outcomes in Patients with Obstructive Sleep Apnea and Chronic Obstructive Pulmonary Disease.
Sterling KL, Pépin JL, Linde-Zwirble W, Chen J, Benjafield AV, Cistulli PA, Cole KV, Emami H, Woodford C, Armitstead JP, Nunez CM, Wedzicha JA, Malhotra A.Am J Respir Crit Care Med. 2022 Jul 15;206(2):197-205. doi: 10.1164/rccm.202109-2035OC.PMID: 35436176

Am J Respir Crit Care Med

. 2022 Jul 15;206(2):197-205.

doi: 10.1164/rccm.202109-2035OC.

Impact of Positive Airway Pressure Therapy Adherence on Outcomes in Patients with Obstructive Sleep Apnea and Chronic Obstructive Pulmonary Disease

Kimberly L Sterling[1], Jean-Louis Pépin[2], Walter Linde-Zwirble[3], Jiaming Chen[1], Adam V Benjafield[4], Peter A Cistulli[5], Kate V Cole[1], Hussein Emami[1], Caleb Woodford[6], Jeff P Armitstead[4], Carlos M Nunez[1], Jadwiga A Wedzicha[7], Atul Malhotra[8]

Affiliations expand

- PMID: 35436176

- DOI: 10.1164/rccm.202109-2035OC

Abstract

Rationale: The co-occurrence of obstructive sleep apnea and chronic obstructive pulmonary disease, termed overlap syndrome, has a poor prognosis. However, data on positive airway pressure (PAP) treatments and their impact on outcomes and costs are lacking. **Objectives:** This retrospective observational study investigated the effects of PAP on health outcomes, resource usage, and costs in patients with overlap syndrome. **Methods:** Deidentified adjudicated claims data for patients with overlap syndrome in the United States were linked to objectively measured PAP user data. Patients were considered adherent to PAP therapy if they met Centers for Medicare and Medicaid Services criteria for eight 90-day timeframes from device setup through 2-year follow-up. Propensity score matching was used to create comparable groups of adherent and nonadherent patients. Healthcare resource usage was based on the number of doctor visits, all-cause emergency room visits, all-cause hospitalizations, and PAP equipment and supplies, and proxy costs were

obtained. **Measurements and Main Results:** A total of 6,810 patients were included (mean age, 60.8 yr; 56% female); 2,328 were nonadherent. Compared with the year before therapy, there were significant reductions in the number of emergency room visits, hospitalizations, and severe acute exacerbations during 2 years of PAP therapy in patients who were versus were not adherent (all $P < 0.001$). This improvement in health status was paralleled by a significant reduction in the associated healthcare costs. **Conclusions:** PAP usage by patients with overlap syndrome was associated with reduced all-cause hospitalizations and emergency room visits, severe acute exacerbations, and healthcare costs.

Keywords: PAP therapy; costs; health outcomes; obstructive sleep apnea; overlap syndrome.

Comment in

- Chronic Obstructive Pulmonary Disease-Obstructive Sleep Apnea Overlap: More Than a Casual Acquaintance.
  Ioachimescu OC, McNicholas WT.Am J Respir Crit Care Med. 2022 Jul 15;206(2):139-141. doi: 10.1164/rccm.202204-0695ED.PMID: 35549667 No abstract available.

Am J Respir Crit Care Med

. 2022 Jul 15;206(2):150-160.

doi: 10.1164/rccm.202106-1440OC.

Airway Aging and Methylation Disruptions in HIV–associated Chronic Obstructive Pulmonary Disease

Ana I Hernández Cordero[1], Chen Xi Yang[1], Julia Yang[1], Steve Horvath[2,3], Tawimas Shaipanich[4], Julia MacIsaac[5], David T S Lin[5], Michael S Kobor[5], Silvia Guillemi[6,7], Marianne Harris[6,7], Wan Lam[8], Stephen Lam[6], Julio Montaner[6,7], S F Paul Man[1,4], Don D Sin[1,4], Janice M Leung[1,4]

Affiliations expand

- PMID: 35426765

- DOI: 10.1164/rccm.202106-1440OC

Abstract

Rationale: Age-related diseases like chronic obstructive pulmonary disease (COPD) occur at higher rates in people living with human immunodeficiency virus (PLWH) than in uninfected populations. **Objectives:** To identify whether accelerated aging can be observed in the airways of PLWH with COPD, manifest by a unique DNA methylation signature. **Methods:** Bronchial epithelial brushings from PLWH with and without COPD and HIV-uninfected adults with and without COPD (N = 76) were profiled for DNA methylation and gene expression. We evaluated global Alu and LINE-1 methylation and calculated the epigenetic age using the Horvath clock and the methylation telomere length estimator. To identify genome-wide differential DNA methylation and gene expression associated with HIV and COPD, robust linear models were used followed by an expression quantitative trait methylation (eQTM) analysis. **Measurements and Main Results:** Epigenetic age acceleration and shorter methylation estimates of telomere length were found in PLWH with COPD compared with PLWH without COPD and uninfected patients with and without COPD. Global hypomethylation was identified in PLWH. We identified 7,970 cytosine bases located next to a guanine base (CpG sites), 293 genes, and 9 expression quantitative trait methylation-gene pairs associated with the interaction between HIV and COPD. Actin binding LIM protein family member 3 (*ABLIM3*) was one of the novel candidate genes for HIV-associated COPD highlighted by our analysis. **Conclusions:** Methylation age acceleration is observed in the airway epithelium of PLWH with COPD, a process that may be responsible for the heightened risk of COPD in this population. Their distinct methylation profile, differing from that observed in patients with COPD alone, suggests a unique pathogenesis to HIV-associated COPD. The associations warrant further investigation to establish causality.

Keywords: COPD; HIV; airway epithelium; epigenomics; gene expression.

Comment in

- Premature Aging of the Airway Epithelium in Chronic Obstructive Pulmonary Disease in People Living with HIV.
  Kaner RJ.Am J Respir Crit Care Med. 2022 Jul 15;206(2):131-132. doi: 10.1164/rccm.202204-0743ED.PMID: 35579631 No abstract available.

SUPPLEMENTARY INFO

Grant supportexpand

FULL TEXT LINKS

ASTHMA

Editorial

J Allergy Clin Immunol

. 2022 Jul 12;S0091-6749(22)00913-7.

doi: 10.1016/j.jaci.2022.07.002. Online ahead of print.

Chronic rhinosinusitis is associated with non-cystic fibrosis bronchiectasis - a new clinical implication?

Jarkko Mäntylä[1], Paula Kauppi[1], Sanna Toppila-Salmi[2]

Affiliations expand

- PMID: 35839844

- DOI: 10.1016/j.jaci.2022.07.002

No abstract available

Keywords: allergic rhinitis; asthma; bronchiectasis; chronic obstructive pulmonary disease; chronic rhinosinusitis; gastro-esophageal reflux disease; obstructive sleep apnea; pneumonia.

SUPPLEMENTARY INFO

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Indian J Pediatr

. 2022 Jul 15.

doi: 10.1007/s12098-022-04282-1. Online ahead of print.

Serum Periostin Level in Children with Asthma

Ketan Kumar[1], Meenu Singh[2], Joseph L Mathew[1], Pankaj C Vaidya[1], Savita Verma Attri[3]

Affiliations expand

- PMID: 35838943

- DOI: 10.1007/s12098-022-04282-1

Abstract

Objectives: To determine the average serum periostin level in children with asthma between 6 and 16 y of age, and to find out if the levels correlated with markers of eosinophilic inflammation, asthma control, and severity.

Methods: Children under follow-up at a tertiary care centre were enrolled. Children with conditions causing elevated serum periostin other than asthma, or history of systemic steroid use in the past 6 mo were excluded. Serum total IgE and periostin were estimated by ELISA.

Results: The median (IQR) serum periostin level was 52.6 (45.4, 58.3) ng/mL. Levels did not vary with age, gender, duration of symptoms, positive family history, or history of exacerbations in the last 6 mo. There was no significant correlation with anthropometric parameters or their z scores, or markers of eosinophilic inflammation in blood including serum total IgE, eosinophil percentage or absolute eosinophil count. There was no difference in median periostin levels of children with different asthma symptom control or asthma severity.

Conclusions: In a group of 26 Indian children with physician-diagnosed asthma, serum periostin showed no significant correlation to markers of eosinophilic inflammation.

Keywords: Biomarker; Childhood asthma; Eosinophilic inflammation; Noninvasive test; T2-high pathway.

- 25 references

Review

Cochrane Database Syst Rev

. 2022 Jul 12;7:CD010834.

doi: 10.1002/14651858.CD010834.pub4.

Anti-IL-5 therapies for asthma

Hugo A Farne[1], Amanda Wilson[2], Stephen Milan[3], Emma Banchoff[4], Freda Yang[5], Colin Ve Powell[6]

Affiliations expand

- PMID: 35838542

- DOI: 10.1002/14651858.CD010834.pub4

Abstract

in English, Spanish

Background: This is the second update of previously published reviews in the Cochrane Library (2015, first update 2017). Interleukin-5 (IL-5) is the main cytokine involved in the proliferation, maturation, activation and survival of eosinophils, which cause airway inflammation and are a classic feature of asthma. Studies of monoclonal antibodies targeting IL-5 or its receptor (IL-5R) suggest they reduce asthma exacerbations, improve health-related quality of life (HRQoL) and lung function in appropriately selected patients, justifying their inclusion in the latest guidelines.

Objectives: To compare the effects of therapies targeting IL-5 signalling (anti-IL-5 or anti-IL-5Rα) with placebo on exacerbations, health-related quality-of-life (HRQoL) measures and lung function in adults and children with chronic asthma, and specifically in those with eosinophilic asthma refractory to existing treatments.

Search methods: We searched CENTRAL, MEDLINE, Embase, and two trials registers, manufacturers' websites, and reference lists of included studies. The most recent search was 7 February 2022.

Selection criteria: We included randomised controlled trials comparing mepolizumab, reslizumab and benralizumab versus placebo in adults and children with asthma.

Data collection and analysis: Two review authors independently extracted data and analysed outcomes using a random-effects model. We used standard methods expected by Cochrane.

Main results: Seventeen studies on about 7600 participants met the inclusion criteria. Six used mepolizumab, five used reslizumab, and six used benralizumab. One study using benralizumab was terminated early due to sponsor decision and contributed no data. The studies were predominantly on people with severe eosinophilic asthma, which was similarly but variably defined. One was in children aged 6 to 17 years; nine others included children over 12 years but did not report results by age group separately. We deemed the overall risk of bias to be low, with all studies contributing data of robust methodology. We considered the certainty of the evidence for all comparisons to be high overall using the GRADE scheme, except for intravenous (IV) mepolizumab and subcutaneous (SC) reslizumab because these are not currently licensed delivery routes. The anti-IL-5 treatments assessed reduced rates of 'clinically significant' asthma exacerbation (defined by treatment with systemic corticosteroids for three days or more) by approximately half in participants with severe eosinophilic asthma on standard care (at least medium-dose inhaled corticosteroids (ICS)) with poorly controlled disease (either two or more exacerbations in the preceding year or Asthma Control Questionnaire (ACQ) score of 1.5 or more), except for reslizumab SC. The rate ratios for these effects were 0.45 (95% confidence interval (CI) 0.36 to 0.55; high-certainty evidence) for mepolizumab SC, 0.53 (95% CI 0.44 to 0.64; moderate-certainty evidence) for mepolizumab IV, 0.43 (95% CI 0.33 to 0.55; high-certainty evidence) for reslizumab IV, and 0.59 (95% CI 0.52 to 0.66; high-certainty evidence) for benralizumab SC. Non-eosinophilic participants treated with benralizumab also showed a significant reduction in exacerbation rates, an effect not seen with reslizumab IV, albeit in only one study. No data were available for non-eosinophilic participants treated with mepolizumab. There were improvements in validated HRQoL scores with all anti-IL-5 agents in severe eosinophilic asthma. This met the minimum clinically important difference (MCID) for the broader St. George's Respiratory Questionnaire (SGRQ; 4-point change) for benralizumab only, but the improvement in the ACQ and Asthma Quality of Life Questionnaire (AQLQ), which focus on asthma symptoms, fell short of the MCID (0.5 point change for both ACQ and AQLQ) for all of the interventions. The evidence for an improvement in HRQoL scores in non-eosinophilic participants treated with benralizumab and reslizumab was weak, but the tests for subgroup difference were negative. All anti-IL-5 treatments produced small improvements in mean pre-bronchodilator forced expiratory flow in one second (FEV_1) of between 0.08 L and 0.15 L in eosinophilic participants, which may not be sufficient to be detected by patients. There were no excess serious adverse events with any anti-IL-5 treatment; in fact, there was a reduction in such events with benralizumab, likely arising from fewer asthma-related hospital admissions. There was no difference compared to placebo in adverse events leading to discontinuation with mepolizumab or reslizumab, but significantly more discontinued benralizumab than placebo, although the absolute numbers were small (42/2026 (2.1%) benralizumab versus 11/1227 (0.9%) placebo). The implications for efficacy or adverse events are unclear.

Authors' conclusions: Overall this analysis supports the use of anti-IL-5 treatments as an adjunct to standard care in people with severe eosinophilic asthma and poor symptom control. These treatments roughly halve the rate of asthma exacerbations in this population. There is limited evidence for improved HRQoL scores and lung function, which may not meet clinically detectable

levels. The studies did not report safety concerns for mepolizumab or reslizumab, or any excess serious adverse events with benralizumab, although there remains a question over adverse events significant enough to prompt discontinuation. Further research is needed on biomarkers for assessing treatment response, optimal duration and long-term effects of treatment, risk of relapse on withdrawal, non-eosinophilic patients, children (particularly under 12 years), comparing anti-IL-5 treatments to each other and, in patients meeting relevant eligibility criteria, to other biological (monoclonal antibody) therapies. For benralizumab, future studies should closely monitor rates of adverse events prompting discontinuation.

- 455 references

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Am J Rhinol Allergy

. 2022 Jul 15;19458924221112211.

doi: 10.1177/19458924221112211. Online ahead of print.

Efficacy and Safety of Dupilumab Versus Omalizumab in Chronic Rhinosinusitis With Nasal Polyps and Asthma: EVEREST Trial Design

Lucia De Prado Gomez[1], Asif H Khan[2], Anju T Peters[3], Claus Bachert[4], Martin Wagenmann[5], Enrico Heffler[6,7], Claire Hopkins[8], Peter W Hellings[4,9], Mei Zhang[10], Jun Xing[10], Paul Rowe[10], Juby A Jacob-Nara[10]

Affiliations expand

- PMID: 35837739

- DOI: 10.1177/19458924221112211

Abstract

Background: Chronic rhinosinusitis with nasal polyps (CRSwNP) and asthma are chronic type 2 inflammatory diseases that are frequently associated with each other. Dupilumab inhibits the dual signaling pathways of interleukin (IL)-4 and IL-13, which are key and central drivers of type 2 inflammation in CRSwNP. Omalizumab blocks the action of immunoglobulin E. Head-to-head studies are required to investigate the comparative efficacy and safety of these interventions. EVEREST (EValuating trEatment RESponses of dupilumab vs omalizumab in Type 2 patients) trial is designed to evaluate whether the efficacy of dupilumab is superior to omalizumab in treating patients with CRSwNP and comorbid asthma (ClinicalTrials.gov Identifiers: NCT04998604).

Objective: Here, we describe the EVEREST study design to compare the efficacy and safety of dupilumab compared to omalizumab over 24 weeks of treatment in patients with severe CRSwNP and comorbid asthma.

Methods: EVEREST is a global, phase 4 multicenter, randomized (1:1), double-blind, active-controlled trial. Approximately 422 adult patients with severe CRSwNP, symptoms of nasal congestion and loss of smell, and coexisting asthma will be recruited across 15 countries. The primary objective is to assess the efficacy of dupilumab compared to omalizumab in reducing the nasal polyp size and improving the sense of smell. The key secondary objectives are to evaluate the comparative efficacy in improving CRSwNP symptoms (eg, nasal congestion) and lung function. The safety will be evaluated in terms of treatment-emergent adverse events (AEs), serious AEs, and AEs of special interest.

Conclusions: EVEREST is the first head-to-head trial assessing the comparative efficacy and safety of 2 biologics in patients with severe CRSwNP and comorbid asthma. The study will provide evidence to help optimize treatment plans for patients that suffer from severe CRSwNP and comorbid asthma.

Keywords: Asthma; CRSwNP; EVEREST trial; biologics; chronic rhinosinusitis with nasal polyps; dupilumab; omalizumab; phase 4; study design; type 2 inflammatory.

. 2022 Jul 14;12(1):12032.

doi: 10.1038/s41598-022-16165-8.

Effects of human adipose tissue- and bone marrow-derived mesenchymal stem cells on airway inflammation and remodeling in a murine model of chronic asthma

Joon Young Choi[#1], Jung Hur[#2], Sora Jeon[3], Chang Kwon Jung[#4,5], Chin Kook Rhee[#6]

Affiliations expand

- PMID: 35835804

- DOI: 10.1038/s41598-022-16165-8

Abstract

It is challenging to overcome difficult-to-treat asthma, and cell-based therapies are attracting increasing interest. We assessed the effects of mesenchymal stem cell (MSC) treatments using a murine model of chronic ovalbumin (OVA)-challenged asthma. We developed a murine model of chronic allergic asthma using OVA sensitization and challenge. Human adipose-derived MSCs (hADSCs) or human bone marrow-derived MSCs (hBMSCs) were administered. We measured the levels of resistin-like molecule-β (RELM-β). We also measured RELM-β in asthma patients and normal controls. OVA-challenged mice exhibited increased airway hyper-responsiveness, inflammation, and remodeling. hBMSC treatment remarkably decreased airway hyper-responsiveness but hADSC treatment did not. Both MSCs alleviated airway inflammation, but hBMSCs tended to have a more significant effect. hBMSC treatment reduced Th2-cytokine levels but hADSC treatment did not. Both treatments reduced airway remodeling. The RELM-β level decreased in the OVA-challenged control group, but increased in both treatment groups. We found that the serum level of RELM-β was lower in asthma patients than controls. MSC treatments alleviated the airway inflammation, hyper-responsiveness, and remodeling associated with chronic asthma. hBMSCs were more effective than hADSCs. The RELM-β levels increased in both treatment groups; the RELM-β level may serve as a biomarker of MSC treatment efficacy.

- 51 references

Proceed to details

Editorial

Eur Respir J

. 2022 Jul 13;60(1):2200378.

doi: 10.1183/13993003.00378-2022. Print 2022 Jul.

Targeted strategies are needed to prevent childhood asthma

Danielle Wurzel[1,2,3], Paul V Licciardi[4,2]

Affiliations expand

- PMID: 35835473

- DOI: 10.1183/13993003.00378-2022

No abstract available

Conflict of interest statement

Conflict of interest: D. Wurzel and P.V. Licciardi report no conflicts of interest to disclose.

Comment on

- Nasopharyngeal metatranscriptome profiles of infants with bronchiolitis and risk of childhood asthma: a multicentre prospective study.
  Raita Y, Pérez-Losada M, Freishtat RJ, Hahn A, Castro-Nallar E, Ramos-Tapia I, Stearrett N, Bochkov YA, Gern JE, Mansbach JM, Zhu Z, Camargo CA, Hasegawa K.Eur Respir J. 2022 Jul 13;60(1):2102293. doi: 10.1183/13993003.02293-2021. Print 2022 Jul.PMID: 34916264 **Free PMC article.**

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Am J Respir Crit Care Med

. 2022 Jul 14.

doi: 10.1164/rccm.202206-1080LE. Online ahead of print.

Selecting the Right Patient: The Achille's Heel of COPD Clinical Trials

Francesca Polverino[1], Bartolome R Celli[2,3]

Affiliations expand

- PMID: 35834808

- DOI: 10.1164/rccm.202206-1080LE

No abstract available

Keywords: COPD; comorbidities; treatment; endothelial dysfunction; clinical trials.

FULL TEXT LINKS

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PLoS One

. 2022 Jul 14;17(7):e0269888.

doi: 10.1371/journal.pone.0269888. eCollection 2022.

Asthma in a prospective cohort of rural pregnant women from Sri Lanka: Need for better care during the pre-conceptional and antenatal period

Shashanka Rajapakse[1], Nuwan Wickramasinghe[2], Janith Warnasekara[2], Parami Abeyrathna[3], Gayani Amarasinghe[2], Ayesh Umeshana Hettiarachchi[2], Imasha Upulini Jayasinghe[2], Iresha Koralegedara[4], Thilini Chanchala Agampodi[2], Suneth B Agampodi[2,5]

Affiliations expand

- PMID: 35834567

- DOI: 10.1371/journal.pone.0269888

Free article

Abstract

Objectives: To describe the epidemiology and the effect of asthma on pregnancy outcomes in pregnant women from a rural geography.

Methods: We conducted a prospective cohort study in Anuradhapura district, Sri Lanka enrolling all eligible pregnant women registered in the maternal care program. An interviewer-administered questionnaire-based symptom analysis and clinical assessment was conducted in the first and second trimesters.

Results: We recruited 3374 pregnant women aged 15-48 years at conception. Self-reported physician-diagnosed asthma prevalence was 6.6% (n = 223) with only 41.7% (n = 93) on regular medical follow-up for asthma. The prevalence of wheeze reduced from pre-pregnancy (67.0%) to the first (46.4%) and second trimesters (47.7%; p<0.01). Of the 73 asthmatic women who did not have wheeze in the last 3 months preceding pregnancy, new-onset wheeze was reported by 6(8.2%)

and 12(16.4%) in the first and second trimester, respectively. Pregnant women who sought medical care for asthma in the private sector had a lower likelihood of developing new-onset wheeze in the first trimester (p = 0.03; unadjusted OR = 0.94;95%CI 0.89-0.99). Thirty-four (33.3%) pregnant women had at least one hospital admission due to exacerbation of wheeze during the first and second trimester. The prevalence of low birth weight (16.0%) was higher among pregnant asthmatic women.

Conclusion: This study reports the high prevalence of asthma and asthma-associated pregnancy outcomes in women from a rural geography signifying the importance of targeted management.

Conflict of interest statement

The authors have declared that no competing interest exist.

PLoS One

. 2022 Jul 14;17(7):e0270921.

doi: 10.1371/journal.pone.0270921. eCollection 2022.

Impact of frailty in elderly patients with moderate to severe asthma

Ricardo G Figueiredo[1 2 3], Gabriela P Pinheiro[2], Vanessa Arata[1], Maisa F M Leal[2], Cinthia V N Santana[2], Taciana L Tiraboschi[1 3], José Bessa Junior[1 3], Álvaro A Cruz[2 4]

Affiliations expand

- PMID: 35834436

- DOI: 10.1371/journal.pone.0270921

Abstract

Frailty assessment has been identified as critical approach in chronic respiratory diseases with substantial impact in the health status and functionality in later life. Aging modifies the immune response leading to a chronic pro-inflammatory state and increased susceptibility to airway infections. Since epigenetic changes, airway epithelium dysfunction and inflammatory cytokine activity seem to be more pronounced in the immunosenescence, elderly asthmatics are at higher risk of poor clinical outcomes. Therefore, we hypothesize that frailty would be associated with the degree of asthma control in elderly patients with moderate to severe asthma. The aims of this study are to investigate association between frailty and asthma control in patients over 60 years old to estimate the prevalence of frailty in this study population. We plan to conduct a cross-sectional study with at least 120 patients above 60 years old with diagnostic of moderate to severe asthma according to Global Initiative for Asthma (GINA) guidelines, treated at a referral outpatient clinic. We defined asthma control by the six-domain Asthma Control Questionnaire (ACQ-6) and frailty phenotype in accordance with Fried scale and visual scale of frailty (VS-Frailty). We hope to analyze the multidimensional relationships between frailty and asthma and contribute to innovative therapeutic plans in geriatric asthma.

Conflict of interest statement

The authors have declared that no competing interests exist.

. 2022 Jul 12;12(7):e053981.

doi: 10.1136/bmjopen-2021-053981.

Identifying non-communicable disease multimorbidity patterns and associated factors: a latent class analysis approach

Parul Puri[1], Shri Kant Singh[2], Sanghamitra Pati[3]

Affiliations expand

- PMID: 35820748

- DOI: 10.1136/bmjopen-2021-053981

Free article

Abstract

Objective: In the absence of adequate nationally-representative empirical evidence on multimorbidity, the existing healthcare delivery system is not adequately oriented to cater to the growing needs of the older adult population. Therefore, the present study identifies frequently occurring multimorbidity patterns among older adults in India. Further, the study examines the linkages between the identified patterns and socioeconomic, demographic, lifestyle and anthropometric correlates.

Design: The present findings rest on a large nationally-representative sample from a cross-sectional study.

Setting and participants: The study used data on 58 975 older adults (45 years and older) from the Longitudinal Ageing Study in India, 2017-2018.

Primary and secondary outcome measures: The study incorporated a list of 16 non-communicable diseases to identify commonly occurring patterns using latent class analysis. The study employed multinomial logistic regression models to assess the association between identified disease patterns with unit-level socioeconomic, demographic, lifestyle and anthropometric characteristics.

Results: The present study demonstrates that older adults in the country can be segmented into six patterns: 'relatively healthy', 'hypertension', 'gastrointestinal disorders-hypertension-musculoskeletal disorders', 'musculoskeletal disorders-hypertension-asthma', 'metabolic disorders' and 'complex cardiometabolic disorders'. Additionally, socioeconomic, demographic, lifestyle and anthropometric factors are significantly associated with one or more identified disease patterns.

Conclusions: The identified classes 'hypertension', 'metabolic disorders' and 'complex cardiometabolic disorders' reflect three stages of cardiometabolic morbidity with hypertension as the first and 'complex cardiometabolic disorders' as the last stage of disease progression. This underscores the need for effective prevention strategies for high-risk hypertension group. Also,

targeted interventions are essential to reduce the burden on the high-risk population and provide equitable health services at the community level.

Keywords: Demography; Epidemiology; Nutrition; PUBLIC HEALTH; SOCIAL MEDICINE.

Conflict of interest statement

Competing interests: None declared.

Am J Respir Crit Care Med

. 2022 Jul 12.

doi: 10.1164/rccm.202207-1271ED. Online ahead of print.

Obesity, Insulin Resistance and Asthma

James P Allinson[1], Pujan H Patel[2], Gavin C Donaldson[3]

Affiliations expand

- PMID: 35819866

- DOI: 10.1164/rccm.202207-1271ED

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Comment

JAMA

. 2022 Jul 12;328(2):215.

doi: 10.1001/jama.2022.8769.

Over-the-Counter Availability of Rescue Inhalers for Asthma

Kathleen R May[1], John J Oppenheimer[2], Stanley J Szefler[3]

Affiliations expand

- PMID: 35819430

- DOI: 10.1001/jama.2022.8769

No abstract available

Comment in

- Over-the-Counter Availability of Rescue Inhalers for Asthma-Reply.
  Feldman WB, Avorn J, Kesselheim AS.JAMA. 2022 Jul 12;328(2):216-217. doi: 10.1001/jama.2022.8775.PMID: 35819426 No abstract available.

Comment on

- Switching to Over-the-Counter Availability of Rescue Inhalers for Asthma.
  Feldman WB, Avorn J, Kesselheim AS.JAMA. 2022 Mar 15;327(11):1021-1022. doi: 10.1001/jama.2022.1160.PMID: 35188561 No abstract available.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

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JAMA FULL TEXT

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JAMA

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. 2022 Jul 12;328(2):215-216.

doi: 10.1001/jama.2022.8772.

Over-the-Counter Availability of Rescue Inhalers for Asthma

Sarah E Gray[1], Valerie G Press[2]

Affiliations expand

- PMID: 35819429

- DOI: 10.1001/jama.2022.8772

No abstract available

Comment in

- Over-the-Counter Availability of Rescue Inhalers for Asthma-Reply.
  Feldman WB, Avorn J, Kesselheim AS.JAMA. 2022 Jul 12;328(2):216-217. doi: 10.1001/jama.2022.8775.PMID: 35819426 No abstract available.

Comment on

- Switching to Over-the-Counter Availability of Rescue Inhalers for Asthma.
  Feldman WB, Avorn J, Kesselheim AS.JAMA. 2022 Mar 15;327(11):1021-1022. doi: 10.1001/jama.2022.1160.PMID: 35188561 No abstract available.

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JAMA

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. 2022 Jul 12;328(2):216-217.

doi: 10.1001/jama.2022.8775.

Over-the-Counter Availability of Rescue Inhalers for Asthma-Reply

William B Feldman[1], Jerry Avorn[1], Aaron S Kesselheim[1]

Affiliations expand

- PMID: 35819426

- DOI: 10.1001/jama.2022.8775

No abstract available

Comment on

- Over-the-Counter Availability of Rescue Inhalers for Asthma.

  Gray SE, Press VG.JAMA. 2022 Jul 12;328(2):215-216. doi: 10.1001/jama.2022.8772.PMID: 35819429 No abstract available.

- Over-the-Counter Availability of Rescue Inhalers for Asthma.
  May KR, Oppenheimer JJ, Szefler SJ.JAMA. 2022 Jul 12;328(2):215. doi: 10.1001/jama.2022.8769.PMID: 35819430 No abstract available.

SUPPLEMENTARY INFO

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Immunopharmacol Immunotoxicol

. 2022 Jul 11;1-6.

doi: 10.1080/08923973.2022.2086138. Online ahead of print.

N-acetylcysteine decreases lung inflammation and fibrosis by modulating ROS and Nrf2 in mice model exposed to particulate matter

Seon-Muk Choi[1], Pureun-Haneul Lee[1], Min-Hyeok An[1], Lee Yun-Gi[1], Shinhee Park[1], Ae Rin Baek[1], An-Soo Jang[1]

Affiliations expand

- PMID: 35657279

- DOI: 10.1080/08923973.2022.2086138

Abstract

Background and Objectives: Air pollutants can induce and incite airway diseases such as asthma. N-acetylcysteine (NAC) affects signaling pathways involved in apoptosis, angiogenesis, cell growth and arrest, redox-regulated gene expression, and the inflammatory response. However, it is not known how NAC change redox-regulated gene expression in asthma mouse model exposed to particulate matter (PM). To investigate the effects of NAC on asthma mice exposed to PM through Reactive oxygen species (ROS), nuclear factor erythroid 2-related factor 2 (Nrf2), and mucin 5 (Muc5).**Methods:** To investigate the effects of NAC (100 mg/kg) on redox-regulated gene expression and lung fibrosis in a mouse model of asthma exposed to PM. A mice model of asthma induced by ovalbumin (OVA) or OVA plus titanium dioxide (OVA + TiO_2) was established using wild-type BALB/c female mice, and the levels of Nrf2 and mucin 5AC (Muc5ac) proteins following NAC treatment were examined by Western blotting and immunostaining. In addition, the protein levels of ROS were checked.**Results:** Airway hyperresponsiveness and inflammation, goblet cell hyperplasia, and lung fibrosis were higher in OVA, OVA + TiO_2 mice than in control mice. NAC diminished OVA + TiO_2-induced airway hyperresponsiveness and inflammation, goblet cell hyperplasia, and lung fibrosis. Levels of ROS, Nrf2, and Muc5ac protein were higher in lung tissue from OVA + TiO_2 mice than that from control mice and were decreased by treatment with NAC.**Conclusions:** NAC reduce airway inflammation and responsiveness, goblet cell hyperplasia, and lung fibrosis by modulating ROS and Nrf2.

Keywords: Asthma; N-acetylcysteine; Nrf2; PM; ROS.

. 2022 Jul 13;60(1):2102293.

doi: 10.1183/13993003.02293-2021. Print 2022 Jul.

Nasopharyngeal metatranscriptome profiles of infants with bronchiolitis and risk of childhood asthma: a multicentre prospective study

Yoshihiko Raita[1], Marcos Pérez-Losada[2,3], Robert J Freishtat[4,5,6], Andrea Hahn[4,6,7], Eduardo Castro-Nallar[8], Ignacio Ramos-Tapia[8], Nathaniel Stearrett[9], Yury A Bochkov[10], James E Gern[10,11], Jonathan M Mansbach[12], Zhaozhong Zhu[13], Carlos A Camargo[13], Kohei Hasegawa[13]

Affiliations expand

- PMID: 34916264

- PMCID: PMC9206513

- DOI: 10.1183/13993003.02293-2021

Free PMC article

Abstract

Background: Bronchiolitis is not only the leading cause of hospitalisation in US infants but also a major risk factor for asthma development. Growing evidence supports clinical heterogeneity within bronchiolitis. Our objectives were to identify metatranscriptome profiles of infant bronchiolitis, and to examine their relationship with the host transcriptome and subsequent asthma development.

Methods: As part of a multicentre prospective cohort study of infants (age <1 year) hospitalised for bronchiolitis, we integrated virus and nasopharyngeal metatranscriptome (species-level taxonomy and function) data measured at hospitalisation. We applied network-based clustering approaches to identify metatranscriptome profiles. We then examined their association with the host transcriptome at hospitalisation and risk for developing asthma.

Results: We identified five metatranscriptome profiles of bronchiolitis (n=244): profile A: virus^{RSV}microbiome^{commensals}; profile B: virus$^{RSV/RV-A}$microbiome $^{H.influenzae}$; profile C: virus^{RSV}microbiome $^{S.pneumoniae}$; profile D: virus^{RSV}microbiome $^{M.nonliquefaciens}$; and profile E: virus$^{RSV/RV-C}$microbiome $^{M.catarrhalis}$. Compared with profile A, profile B infants were characterised by a high proportion of eczema, *Haemophilus influenzae* abundance and enriched virulence related to

antibiotic resistance. These profile B infants also had upregulated T-helper 17 and downregulated type I interferon pathways (false discovery rate (FDR) <0.005), and significantly higher risk for developing asthma (17.9% *versus* 38.9%; adjusted OR 2.81, 95% CI 1.11-7.26). Likewise, profile C infants were characterised by a high proportion of parental asthma, *Streptococcus pneumoniae* dominance, and enriched glycerolipid and glycerophospholipid metabolism of the microbiome. These profile C infants had an upregulated RAGE signalling pathway (FDR <0.005) and higher risk of asthma (17.9% *versus* 35.6%; adjusted OR 2.49, 95% CI 1.10-5.87).

Conclusions: Metatranscriptome and clustering analysis identified biologically distinct metatranscriptome profiles that have differential risks of asthma.

Conflict of interest statement

Conflict of interest: Y. Raita has nothing to disclose. Conflict of interest: M. Pérez-Losada has nothing to disclose. Conflict of interest: R.J. Freishtat has nothing to disclose. Conflict of interest: A. Hahn has nothing to disclose. Conflict of interest: E. Castro-Nallar has nothing to disclose. Conflict of interest: I. Ramos-Tapia has nothing to disclose. Conflict of interest: N.l Stearrett has nothing to disclose. Conflict of interest: Y.A. Bochkov has patents on production methods of rhinoviruses. Conflict of interest: J.E. Gern is a paid consultant to AstraZeneca and Meissa Vaccines Inc., has stock options in Meissa Vaccines Inc., and has patents on production methods of rhinoviruses. Conflict of interest: J.M. Mansbach has nothing to disclose. Conflict of interest: Z. Zhu has nothing to disclose. Conflict of interest: C.A. Camargo has nothing to disclose. Conflict of interest: K. Hasegawa has nothing to disclose.

Comment in

- Targeted strategies are needed to prevent childhood asthma.
  Wurzel D, Licciardi PV.Eur Respir J. 2022 Jul 13;60(1):2200378. doi: 10.1183/13993003.00378-2022. Print 2022 Jul.PMID: 35835473 No abstract available.

. 2022 Jul 12;S0091-6749(22)00913-7.

doi: 10.1016/j.jaci.2022.07.002. Online ahead of print.

Chronic rhinosinusitis is associated with non-cystic fibrosis bronchiectasis - a new clinical implication?

Jarkko Mäntylä[1], Paula Kauppi[1], Sanna Toppila-Salmi[2]

Affiliations expand

- PMID: 35839844

- DOI: 10.1016/j.jaci.2022.07.002

No abstract available

Keywords: allergic rhinitis; asthma; bronchiectasis; chronic obstructive pulmonary disease; chronic rhinosinusitis; gastro-esophageal reflux disease; obstructive sleep apnea; pneumonia.

SUPPLEMENTARY INFO

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Review

Laryngoscope

. 2022 Jul 15.

doi: 10.1002/lary.30306. Online ahead of print.

Intranasal Anticholinergics for Treatment of Chronic Rhinitis: Systematic Review and Meta-Analysis

Jonathan C Pang[1], Milind Vasudev[1], Amy T Du[1], Madeline M Nottoli[1], Katherine Dang[1], Edward C Kuan[1]

Affiliations expand

- PMID: 35838014

- DOI: 10.1002/lary.30306

Abstract

Objective: Topical intranasal anticholinergics are commonly prescribed for the relief of chronic rhinitis and associated symptoms, warranting thorough assessment of the supporting evidence. The present study aimed to evaluate the safety and efficacy of anticholinergic nasal sprays in the management of allergic and non-allergic rhinitis symptom severity and duration.

Methods: A search encompassing the Cochrane Library, PubMed/MEDLINE, and Scopus databases was conducted. Primary studies describing rhinorrhea, nasal congestion, and/or postnasal drip outcomes in rhinitis patients treated with an anticholinergic spray were included for review.

Results: The search yielded 1,029 unique abstracts, of which 12 studies (n = 2,024) met inclusion criteria for qualitative synthesis and 9 (n = 1,920) for meta-analysis. Median follow-up was 4 weeks and ipratropium bromide was the most extensively trialed anticholinergic. Compared to placebo, anticholinergic treatment was demonstrated to significantly reduce rhinorrhea severity scores (standardized mean difference [95% CI] = -0.77 [-1.20, -0.35]; -0.43 [-0.72, -0.13]) and duration (-0.62 [-0.95, -0.30]; -0.29 [-0.47, -0.10]) in allergic and non-allergic rhinitis patients respectively. Benefit was less consistent for nasal congestion, postnasal drip, and sneezing symptoms. Reported adverse effects included nasal mucosa dryness or irritation, epistaxis, headaches, and pharyngitis, though comparison to placebo found significantly greater risk for epistaxis only (risk ratio [95% CI] = 2.19 [1.22, 3.93]).

Conclusion: Albeit treating other symptoms with less benefit, anticholinergic nasal sprays appear to be safe and efficacious in reducing rhinorrhea severity and duration in both rhinitis etiologies. This evidence supports their continued use in the treatment of rhinitis-associated rhinorrhea.

Level of evidence: Level 1 Laryngoscope, 2022.

Keywords: anticholinergic; meta-analysis; rhinitis; rhinorrhea; systematic review.

- 45 references

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Sci Rep

. 2022 Jul 14;12(1):12039.

doi: 10.1038/s41598-022-15398-x.

Characteristics of IgG4-related disease complicated with allergic rhinitis or chronic rhinosinusitis: a large cross-sectional cohort study

Qianyu Shi[1], Xiaoran Ning[2], Huijuan Li[3], Xiangbo Ma[3], Kunkun Wang[4], Wenjie Bian[1], Yuxin Zhang[1], Jiao Xia[5], Xiaodan Zheng[6], Yanying Liu[7,8], Zhanguo Li[9]

Affiliations expand

- PMID: 35835975

- DOI: 10.1038/s41598-022-15398-x

Abstract

In clinical practice, we found that IgG4-related disease (IgG4-RD) patients complicated with allergic rhinitis (AR)/chronic rhinosinusitis (CRS) seemed to have unique characteristics different from patients with IgG4-RD alone. In this study, demographic, clinical and laboratory characteristics of IgG4-RD patients complicated with AR/CRS were investigated. We retrospectively analyzed 756 IgG4-RD patients who were recruited in four medical centers from 2009 to 2021. We divided 756 IgG4-RD patients into 2 groups: the case group included IgG4-RD patients complicated with AR/CRS, and the control group included IgG4-RD patients without AR/CRS. 411 patients were complicated with AR/CRS among 756 IgG4-RD patients. Multiple organs involvement (≥ 3, $p < 0.0001$, OR 3.585 (95% CI 2.655-4.839)) and other types of allergic disease ($p < 0.0001$, OR 2.007 (95% CI 1.490-2.693)) were more common in the case group. Patients in the case group had a higher level of serum IgG4 (650 mg/dL vs 385 mg/dL, $p < 0.0001$), IgE (347 mg/dL vs 98 mg/dL, $p < 0.0001$) and ESR (14 mm/h vs 12 mm/h, $p < 0.05$). High IgE level ($p < 0.01$, OR 1.003 (95% CI 1.001-1.005)) and other types of allergic disease ($p < 0.05$, OR 3.196 (95% CI 1.146-8.908)) were risk factors for patients in the case group, in which most patients had nasal manifestations before the diagnosis of IgG4-RD. The median time interval from nasal symptoms appearance to IgG4-RD diagnosis was - 120 and - 90 months for patients complicated with AR and CRS, respectively. IgG4-RD patients are often complicated with AR/CRS and have distinct characteristics, which appear to be a subgroup of IgG4-RD. The data suggests a pathogenic association of IgG4-RD and AR/CRS.

- 26 references

SUPPLEMENTARY INFO

Grant supportexpand

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4

Int Ophthalmol

. 2022 Jul 12.

doi: 10.1007/s10792-022-02402-6. Online ahead of print.

The short-term effects of intranasal steroids on intraocular pressure in pediatric population

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Affiliations expand

- PMID: 35819739

- DOI: 10.1007/s10792-022-02402-6

Abstract

Purpose: To evaluate the effect of intranasal mometasone furoate (INMF) on short-term intraocular pressure (IOP) alterations in children with allergic rhinitis (AR).

Methods: Children diagnosed with AR and to whom INMF nasal spray had been firstly prescribed were enrolled. Cases with any ocular diseases except for refractive errors were excluded. Complete ophthalmologic examinations including IOP measurements using Tonopen XL were performed before the treatment as well as at the first and sixth weeks of follow-up. Demographics and ophthalmologic findings were noted and statistically analyzed.

Results: Study population consisted of 62 right eyes of 62 children with a mean age of 8.55 ± 3.14 years. Of them, 29 were female (46.8%) and 33 were male (53.2%). Dilated fundoscopy revealed an enlarged Cup/Disc ratio in 12 eyes (19.4%). Family history of glaucoma was positive in 13 cases (21.0%). Mean best corrected visual acuity was found as 0.05 ± 0.08 logMAR. Initial IOP was 17.1 ± 2.3 mmHg; whereas it was measured as 18.2 ± 2.0 mmHg and 17.3 ± 2.1 mmHg at the first and sixth weeks of follow-up, respectively ($p < 0.001$). Both at the first and sixth weeks of follow-up, significant IOP rise was present in children with a positive family history of glaucoma ($p < 0.001$ and $p = 0.003$, respectively). Besides, increased IOP was found in participants with cupping revealed on fundoscopy at the first week of follow-up ($p = 0.044$).

Conclusion: Since children have greater risk for steroid-induced ocular hypertensive response than adults, ophthalmologic evaluation must be recommended in children receiving intranasal steroids.

Keywords: Intranasal steroid; Intraocular pressure; Mometasone furoate; Pediatric glaucoma.

- 28 references

Am J Rhinol Allergy

. 2022 Jul 11;19458924221109987.

doi: 10.1177/19458924221109987. Online ahead of print.

Clinical and Quality of Life Outcomes Following Temperature-Controlled Radiofrequency Neurolysis of the Posterior Nasal Nerve (RhinAer) for Treatment of Chronic Rhinitis

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Affiliations expand

- PMID: 35818709

- DOI: 10.1177/19458924221109987

Abstract

Background: Temperature-controlled radiofrequency (TCRF) neurolysis of the posterior nasal nerve (PNN; RhinAer) is a minimally invasive treatment option for patients with chronic rhinitis.

Objective: To determine clinical outcomes and quality of life (QoL) following TCRF neurolysis of the PNN.

Methods: A prospective single-arm study of 129 patients with chronic rhinitis at 16 medical centers in the United States and Germany.

Results: The mean 24-h reflective total nasal symptom score (rTNSS) improved from 7.8 (95% CI, 7.5-8.1) at baseline to 3.6 (95% CI, 3.2-4.0) at 3 months and continued to improve to 2.9 (95% CI, 2.5-3.3) at 6 months ($p < .001$ comparing follow-up to baseline and $p = .002$ comparing 3 and 6 months). This represents 53.8% improvement over baseline at 3 months and 62.8% improvement at 6 months. Rhinorrhea, congestion, sneezing, and itching subscores and postnasal drip and cough scores were all significantly improved over baseline at both timepoints. At 3 months, 76.2% (95% CI, 68.1%-82.8%) of patients achieved a minimal clinically important difference of ≥30% improvement in rTNSS over baseline and the percentage was higher at 6 months (83.5% [95% CI, 75.8%-89.0%]). At 3 months, 80.3% (95% CI, 72.6%-86.3%) reported a minimal clinically important difference of ≥0.4-point improvement in the mini rhinoconjunctivitis quality of life questionnaire score, and the percentage was higher at 6 months; 87.7% (95% CI, 80.7%-92.4%). There were no serious adverse events with a relationship to the device/procedure reported through 6 months.

Conclusion: In this large, multicenter study, TCRF neurolysis of the PNN was safe and resulted in a significant reduction in rhinitis symptom burden at 3 months that was sustained/improved through 6 months. The majority of patients reported a clinically relevant improvement in QoL at 3 and 6 months postprocedure.

Keywords: MiniRQLQ; chronic rhinitis; neurolysis; posterior nasal nerve; quality of life; rTNSS; radiofrequency; temperature-controlled.

Allergy Asthma Clin Immunol

. 2022 Jul 11;18(1):63.

doi: 10.1186/s13223-022-00703-0.

Effectiveness and safety of allergen immunotherapy in patients with allergic rhinitis complicated by rheumatic autoimmune diseases: a case series study

Kazuki Fujioka[1], Akiko Kasahara[1], Takashi Kida[1], Wataru Fujii[1], Takahiro Seno[1], Makoto Wada[1], Masataka Kohno[1], Yutaka Kawahito[2]

Affiliations expand

- PMID: 35818067

- PMCID: PMC9275025

- DOI: 10.1186/s13223-022-00703-0

Free PMC article

Abstract

Background: Allergen immunotherapy (AIT) is the only treatment that has modified the natural history of allergic diseases. However, since its overall effect on the immune system has not been elucidated, AIT is either absolutely or relatively contraindicated in patients with rheumatic autoimmune diseases (RADs). Therefore, there have been no long-term observations of patients with RADs receiving AIT; thus, the effectiveness and safety of AIT in these patients remain unclear.

Methods: This was a single-center retrospective observational study. RAD patients receiving AIT for allergic rhinitis at our institution were selected. Changes in the activity of RAD patients were investigated for 2 years from baseline, including those who discontinued AIT. The effectiveness of AIT was also investigated using the Japan Allergic Rhinitis Standard Quality of Life Questionnaire.

Results: Thirteen patients with RADs were enrolled in the study. All patients received sublingual immunotherapy, of which four discontinued AIT owing to adverse events. Among all patients, the symptoms of RADs in three patients worsened during the observation period; however, none of them were causally related to AIT. Most of the adverse events associated with AIT were mild, in which only one patient required drug intervention due to worsening rhinitis symptoms. In the nine patients who were able to continue AIT, their eye and nasal symptom scores showed a significant improvement from 1.67 (1.5-2.0) at baseline to 0.67 (0-1.17) in the 2nd year of treatment ($p = 0.0141$).

Conclusions: AIT is a safe and effective treatment modality for patients with allergic rhinitis complicated by RADs.

Keywords: Allergen; Allergic rhinitis; Autoimmune diseases; Contraindication; Immunotherapy.

Conflict of interest statement

KF is not considered to have any competing interests related to this study, but declares as a potential competing interest that KF has received research grants from GlaxoSmithKline. WF is not considered to have any competing interests related to this study, but declares as potential competing interests that WF has received research grants from Boehringer Ingelheim, GlaxoSmithKline, and Takeda. YK is not considered to have any competing interests related to this study, but declares as potential competing interests that YK has received research grants from AbbVie, Asahi Kasei, Astellas, Ayumi, Boehringer Ingelheim, Bristol Myers Squibb, Chugai, Daiichi-Sankyo, Eisai, Mitsubishi Tanabe, Pfizer, Takeda, Teijin, GlaxoSmithKline, and Gilead Sciences. The other authors declare that they have no competing interests.

- 45 references
- 2 figures

Hum Vaccin Immunother

. 2022 Jul 11;2097818.

doi: 10.1080/21645515.2022.2097818. Online ahead of print.

Omalizumab added to allergen immunotherapy increased the effect of therapy in patients with severe local allergic rhinitis

Andrzej Bozek[1], Renata Kozłowska[1], Maciej Misiołek[2], Wojciech Ścierski[2], Radosław Gawlik[3]

Affiliations expand

- PMID: 35816437

- DOI: 10.1080/21645515.2022.2097818

Abstract

Background: Allergen immunotherapy (AIT) is effective in patient with local allergic rhinitis (LAR). However, AIT may not always achieve the optimal treatment effect.

Objective: To present short study with clinical cases of LAR combined therapy with sublingual immunotherapy (SLIT) and omalizumab in patients with house dust mite (HDM) allergy and compared it to therapy with omalizumab alone.

Methods: Patients with severe LAR and hypersensitivity to HDMs were included. SLIT for HDMs was launched in a perennial protocol using SQ-HDM SLIT tablets with omalizumab. The total rhinitis symptom score (TRSS), total medication score (TMS) and combined total score (CTS) were assessed after one year.

Results: After 12 months, significant improvements in all analyzed parameters in the patients on SLIT+ omalizumab therapy were observed: a reduction in the TRSS from 1.21 ± 0.33 to 0.6 ± 0.28 ($p < .05$), a reduction in the TMS from 2.25 ± 1.05 to 0.88 ± 0.31 ($p < .05$) and a reduction in the CTS from 3.46 ± 0.57 to 1.48 ± 0.51 ($p < .05$). This improvement in TRSS, TMS also in CTS was significantly greater than in the rest of the group with SLIT alone or omalizumab alone.

Conclusion: Omalizumab may be a valuable treatment that increases the effectiveness of immunotherapy in patients with severe LAR.

Keywords: Local allergic rhinitis; allergen immunotherapy; omalizumab.

Occup Med (Lond)

. 2022 Jul 11;72(5):339-342.

doi: 10.1093/occmed/kqac031.

Skin and respiratory ill-health attributed to occupational face mask use

M J Seed[1], K Fowler[1], L Byrne[1], M Carder[1], S Daniels[1], I Y K Iskandar[1], J Feary[2], D J Gawkrodger[3], M van Tongeren[1]

Affiliations expand

- PMID: 35689550

- DOI: 10.1093/occmed/kqac031

Abstract

Background: Face mask use in the workplace has become widespread since the onset of the Covid-19 pandemic and has been anecdotally linked to adverse health consequences.

Aims: To examine reports of adverse health consequences of occupational face mask use received by The Health and Occupation Research (THOR) network before and after the pandemic onset.

Methods: THOR databases were searched to identify all cases of ill-health attributed to 'face mask' or similar suspected causative agent between 1 January 2010 and 30 June 2021.

Results: Thirty two cases were identified in total, 18 reported by occupational physicians and 14 by dermatologists. Seventy-five per cent of cases were reported after the pandemic onset and 91% cases were in the health and social care sector. 25 of the 35 (71%) diagnoses were dermatological, the most frequent diagnoses being contact dermatitis (14 cases) and folliculitis/acne (6 cases). Of the seven respiratory diagnoses, four were exacerbation of pre-existing asthma.

Conclusions: There is evidence of an abrupt increase in reports of predominantly dermatological ill-health attributed to occupational face mask use since the start of the pandemic. Respiratory presentations have also occurred.

Keywords: Acne; asthma; contact dermatitis; face mask; respiratory protective equipment; rhinitis.

SUPPLEMENTARY INFO

MeSH terms, Grant supportexpand

FULL TEXT LINKS

OXFORD ACADEMIC

CHRONIC COUGH

Ann Otol Rhinol Laryngol

. 2022 Jul 14;34894221112517.

doi: 10.1177/00034894221112517. Online ahead of print.

Normative Values for the Leicester Cough Questionnaire in Healthy Individuals

Jane E Reynolds[1], Marie E Jetté[2], Miranda L Wright[3], Krishna M Sundar[4], Amanda I Gillespie[5], Laurie J Slovarp[1]

Affiliations expand

- PMID: 35833581

- DOI: 10.1177/00034894221112517

Abstract

Introduction: The primary self-assessment questionnaire used for patients with chronic cough is the Leicester Cough Questionnaire (LCQ). The LCQ is a validated questionnaire that ranges in total score from 3 to 21. While it is known that a higher score on the LCQ

reflects a better quality of life, normative data have not been reported for this questionnaire.

Objective: The purpose of this study was to determine normative LCQ scores on a healthy population without cough.

Methods: The LCQ was distributed via electronic survey to the authors' universities, professional affiliation email lists, and personal contacts. Participants were included if they were at least 18, nonsmokers, and without abnormal cough, without pulmonary disease, and without neurological disease. Participants answered questions regarding age, gender, and race/ethnicity, and completed the 19 LCQ questions.

Results: One hundred forty-three (118 women) LCQ responses were analyzed. Average participant age was 47 years (SD = 13) and 133 (93%) were Caucasian. The mean LCQ Total score was 20.23 (SD = 0.85) with scores ranging from 17.05 to 21.

Conclusions: This study determined the following LCQ scores should be considered normal threshold scores: Total score - 17.68, Physical domain - 5.36, Psychological domain - 5.81, and Social domain - 6.06. The findings of this study will assist clinicians in determining severity of cough impact on quality of life using the LCQ. Further research is needed to ensure more complete participant demographic representation.

Keywords: LCQ; cough; normative values.

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