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17-23 April 2023

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

1
Ind Health
.
. 2023 Apr 21.
doi: 10.2486/indhealth.2022-0174. Online ahead of print.

Factors affecting work productivity and activity impairment among chronic obstructive pulmonary disease patients

Heba Wagih Abdelwahab[1], Radwa Sehsah[2], Abdel-Hady El-Gilany[3], Mohammed Shehta[1]
Affiliations expand

- PMID: 37081622

- DOI: 10.2486/indhealth.2022-0174

Abstract

Chronic obstructive lung disease (COPD) can negatively affect patients' employment and work-life activities with a significant indirect economic impact. The current study aimed to

measure unemployment, work productivity, activity impairment, and their associated factors among COPD patients. A cross-sectional study was conducted in the Chest outpatient clinic, Mansoura University Hospital, Egypt. COPD patients completed an interviewer-administered questionnaire including sociodemographic, occupational data, clinical history, medical research council (mMRC) dyspnea scale, the COPD assessment test (CAT), and work productivity and activity impairment Questionnaire (WPAI-COPD). A total 140 patients were included in the study and 22.1% of them gave up their jobs because of their COPD. Due to COPD, the mean percentage of daily activity impairment was 39.8 among all patients. The mean percentages of absenteeism, presenteeism, and overall work impairment among the 84 working patients were 0.07, 24.4, and 24.5. The CAT score was the significant predictor of all components of WPAI. In conclusion, COPD causes early retirement, high work productivity loss, and impaired daily activities. Higher CAT scores and increased disease severity significantly increase absenteeism, presenteeism, overall work, and activity impairment. Thus, timely diagnosis of COPD with appropriate management can help improve outcomes and lower the disease burden and economic impact.

Keywords: COPD assessment test (CAT); Chronic obstructive lung disease (COPD); Modified medical research council (mMRC); Productivity; Work productivity and activity impairment questionnaire (WPAI).

Heart

. 2023 Apr 20;heartjnl-2023-322431.
doi: 10.1136/heartjnl-2023-322431. Online ahead of print.

Systolic blood pressure, chronic obstructive pulmonary disease and cardiovascular risk

Shishir Rao[1,2], Milad Nazarzadeh[1,2], Yikuan Li[1,2], Dexter Canoy[3], Mohammad Mamouei[1,2], Gholamreza Salimi-Khorshidi[1,2], Kazem Rahimi[4,2,5]
Affiliations expand

- PMID: 37080767

- DOI: 10.1136/heartjnl-2023-322431

Abstract

Objective: In individuals with complex underlying health problems, the association between systolic blood pressure (SBP) and cardiovascular disease is less well recognised. The association between SBP and risk of cardiovascular events in patients with chronic obstructive pulmonary disease (COPD) was investigated.

Methods and analysis: In this cohort study, 39 602 individuals with a diagnosis of COPD aged 55-90 years between 1990 and 2009 were identified from validated electronic health records (EHR) in the UK. The association between SBP and risk of cardiovascular end points (composite of ischaemic heart disease, heart failure, stroke and cardiovascular death) was analysed using a deep learning approach.

Results: In the selected cohort (46.5% women, median age 69 years), 10 987 cardiovascular events were observed over a median follow-up period of 3.9 years. The association between SBP and risk of cardiovascular end points was found to be monotonic; the lowest SBP exposure group of <120 mm Hg presented nadir of risk. With respect to reference SBP (between 120 and 129 mm Hg), adjusted risk ratios for the primary outcome were 0.99 (95% CI 0.93 to 1.05) for SBP of <120 mm Hg, 1.02 (0.97 to 1.07) for SBP between 130 and 139 mm Hg, 1.07 (1.01 to 1.12) for SBP between 140 and 149 mm Hg, 1.11 (1.05 to 1.17) for SBP between 150 and 159 mm Hg and 1.16 (1.10 to 1.22) for SBP ≥160 mm Hg.

Conclusion: Using deep learning for modelling EHR, we identified a monotonic association between SBP and risk of cardiovascular events in patients with COPD.

Keywords: epidemiology; hypertension.

Conflict of interest statement

Competing interests: KR, corresponding author of this research, is a former member of the Editorial Board for BMJ Heart. All of the remaining authors have no relevant financial or non-financial interests to disclose.

Ann Allergy Asthma Immunol

. 2023 Apr 18;S1081-1206(23)00264-8.
doi: 10.1016/j.anai.2023.04.008. Online ahead of print.

Tetanus, diphtheria, and acellular pertussis (Tdap) vaccine coverage in adults with chronic respiratory conditions

Sarah Naeger[1], Denis Macina[2], Vitali Pool[3]
Affiliations expand

- PMID: 37080456

- DOI: 10.1016/j.anai.2023.04.008

No abstract available

Keywords: COPD; Pertussis; Tdap; adults; asthma; vaccination coverage.

FULL TEXT LINKS

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4

Review

Eur Respir Rev

. 2023 Apr 19;32(168):220193.
doi: 10.1183/16000617.0193-2022. Print 2023 Jun 30.

Cytokine-targeted therapies for asthma and COPD

Florence Schleich[1,2], Nicolas Bougard[3], Catherine Moermans[2], Mare Sabbe[3], Renaud Louis[3,2]
Affiliations expand

- PMID: 37076177
- PMCID: PMC10113955
- DOI: 10.1183/16000617.0193-2022

Free PMC article

Abstract

Asthma affects over 300 million people worldwide and its prevalence is increasing. COPD is the third leading cause of death globally. Asthma and COPD are complex inflammatory diseases of the airways in which impaired host defences lead to increased susceptibility to pathogens, pollutants and allergens. There is a constant interplay between host and the environment. Environmental exposures can alter the lung microbiome and influence the development of sensitisation by disrupting normal immunoregulation. The underlying airway inflammation in severe asthma is heterogeneous, with upregulation of type 2 cytokines in most cases but increased neutrophilic inflammation and activated T-helper 17 mediated immunity in others. COPD may also comprise several different phentoypes that are driven by different molecular mechanisms or endotypes. This disease heterogeneity is affected by comorbidities, treatments and environmental exposures. Recent intervention trials have shed light on the pathways beyond type 2 inflammation that can lead to beneficial outcomes *versus* potentially deleterious effects. We have made a great deal of

progress over the last 10 years in terms of immunology and the pathophysiology of asthma and this has led to the development of novel treatments and major improvements in severe asthma outcomes. In COPD, however, no targeted treatments have demonstrated great improvements. This article reviews the mechanism of action and efficacy of the available biologics in asthma and COPD.

Conflict of interest statement

Conflict of interest: F. Schleich has received grants or contracts from GSK, AstraZeneca and Chiesi; payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from GSK, AstraZeneca, Chiesi and TEVA; and has participated on a Data Safety Monitoring Board or Advisory Board for GSK and AstraZeneca. Conflict of interest: N. Bougard has nothing to disclose. Conflict of interest: C. Moermans has nothing to disclose. Conflict of interest: M. Sabbe has nothing to disclose. Conflict of interest: R. Louis has received grants or contracts from GSK, AstraZeneca and Chiesi; payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from GSK, AstraZeneca, Chiesi and TEVA; and has participated on a Data Safety Monitoring Board or Advisory Board for GSK and AstraZeneca.

- 122 references
- 1 figure

PLoS One

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. 2023 Apr 19;18(4):e0284591.
doi: 10.1371/journal.pone.0284591. eCollection 2023.

Corticosteroids for severe acute exacerbations of chronic obstructive pulmonary disease in intensive care: From the French OUTCOMEREA cohort

Louis Marie Galerneau[1,2], Sébastien Bailly[2], Nicolas Terzi[1,2], Stéphane Ruckly[3], Maïté Garrouste-Orgeas[4], Yves Cohen[5], Vivien Hong Tuan Ha[6], Marc Gainnier[7], Shidasp Siami[8], Claire Dupuis[9], Michael Darmon[10], Elie Azoulay[10], Jean-Marie Forel[11], Florian Sigaud[1], Christophe Adrie[12], Dany Goldgran-Toledano[13], Alexis Ferré[14], Etienne de Montmollin[15,16], Laurent Argaud[17], Jean Reignier[18], Jean-Louis Pepin[2], Jean-François Timsit[15,16]; OUTCOMEREA network
Affiliations expand

- PMID: 37075003

- PMCID: PMC10115304

- DOI: 10.1371/journal.pone.0284591

Free PMC article

Abstract

Introduction: Acute exacerbation of chronic obstructive pulmonary disease (COPD) is a frequent cause of intensive care unit (ICU) admission. However, data are scarce and conflicting regarding the impact of systemic corticosteroid treatment in critically ill patients with acute exacerbation of COPD. The aim of the study was to assess the impact of systemic corticosteroids on the occurrence of death or need for continuous invasive mechanical ventilation at day 28 after ICU admission.

Methods: In the OutcomeReaTM prospective French national ICU database, we assessed the impact of corticosteroids at admission (daily dose ≥ 0.5 mg/kg of prednisone or equivalent during the first 24 hours ICU stay) on a composite outcome (death or invasive mechanical ventilation) using an inverse probability treatment weighting.

Results: Between January 1, 1997 and December 31, 2018, 391 out of 1,247 patients with acute exacerbations of COPDs received corticosteroids at ICU admission. Corticosteroids improved the main composite endpoint (OR = 0.70 [0.49; 0.99], p = 0.044. However, for the

subgroup of most severe COPD patients, this did not occur (OR = 1.12 [0.53; 2.36], p = 0.770). There was no significant impact of corticosteroids on rates of non-invasive ventilation failure, length of ICU or hospital stay, mortality or on the duration of mechanical ventilation. Patients on corticosteroids had the same prevalence of nosocomial infections as those without corticosteroids, but more glycaemic disorders.

Conclusion: Using systemic corticosteroids for acute exacerbation of COPD at ICU admission had a positive effect on a composite outcome defined by death or need for invasive mechanical ventilation at day 28.

Conflict of interest statement

NT is supported by Pfizer for attending meetings and/or travel. This does not alter our adherence to PLOS ONE policies on sharing data and materials. The other authors declare that they have no competing interests.

- 28 references
- 2 figures

SUPPLEMENTARY INFO

MeSH terms, Substances, Grant supportexpand

FULL TEXT LINKS

Fam Pract

. 2023 Apr 19;cmad025.
doi: 10.1093/fampra/cmad025. Online ahead of print.

Continuity of care and mortality for patients with chronic disease: an observational study using Norwegian registry data

Sahar Pahlavanyali[1], Øystein Hetlevik[1], Valborg Baste[2], Jesper Blinkenberg[1,2], Steinar Hunskaar[1,2]
Affiliations expand

- PMID: 37074143

- DOI: 10.1093/fampra/cmad025

Abstract

Background: Research on continuity of care (CoC) is mainly conducted in primary care and has received little acknowledgment in other levels of care. This study sought to investigate CoC across care levels for patients with selected chronic diseases, along with its association with mortality.

Methods: In a registry-based cohort study, patients with ≥1 consultation in primary or specialist healthcare or hospital admission with asthma, chronic obstructive pulmonary disease (COPD), diabetes mellitus, or heart failure in 2012 were linked to disease-related consultation data in 2013-2016. CoC was measured by Usual Provider of Care index (UPC) and Bice-Boxermann continuity of care score (COCI). Values equal to one were categorized into one group and the rest into three equal groups (tertiles). The association with mortality was determined by Cox regression models.

Results: The highest mean UPCtotal was measured for patients with diabetes mellitus (0.58) and the lowest for those with asthma (0.46). The population with heart failure had the highest death rate (26.5). In adjusted Cox regression analyses for COPD, mortality was 2.6 times higher (95% CI 2.25-3.04) for patients in the lowest tertile of continuity compared to those with UPCtotal = 1. Patients with diabetes mellitus and heart failure showed similar results.

Conclusion: CoC was moderate to high for disease-related contacts across care levels. A higher mortality associated with lower CoC was observed for patients with COPD, diabetes mellitus, and heart failure. A similar, but not statistically significant trend was found for

patients with asthma. This study suggests that higher CoC across levels of care can decrease mortality.

Keywords: chronic disease; continuity of care; general practice; healthcare system; mortality; observational study.

SUPPLEMENTARY INFO

Grant supportexpand

FULL TEXT LINKS

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7

BMC Pulm Med

. 2023 Apr 18;23(1):127.
doi: 10.1186/s12890-023-02405-8.

Clinical characteristics and predictors of pulmonary hypertension in chronic obstructive pulmonary disease at different altitudes

Lixia Wang[#1], Faping Wang[#1], Yajun Tuo[2], Huajing Wan[3], Fengming Luo[4]
Affiliations expand

- PMID: 37072815

- PMCID: PMC10111800

- DOI: 10.1186/s12890-023-02405-8

Free PMC article

Abstract

Background: Pulmonary hypertension (PH) is a common complication in patients with chronic obstructive pulmonary disease (COPD) and is closely associated with poor prognosis. However, studies on the predictors of PH in COPD patients are limited, especially in populations living at high altitude (HA).

Objectives: To investigate the differences in the clinical characteristics and predictors of patients with COPD/COPD and PH (COPD-PH) from low altitude (LA, 600 m) and HA (2200 m).

Methods: We performed a cross-sectional survey of 228 COPD patients of Han nationality admitted to the respiratory department of Qinghai People's Hospital (N = 113) and West China Hospital of Sichuan University (N = 115) between March 2019 and June 2021. PH was defined as a pulmonary arterial systolic pressure (PASP) > 36 mmHg measured using transthoracic echocardiography (TTE).

Results: The proportion of PH in COPD patients living at HA was higher than that in patients living at LA (60.2% vs. 31.3%). COPD-PH patients from HA showed significantly different in baseline characteristics, laboratory tests and pulmonary function test. Multivariate logistic regression analysis indicated that the predictors of PH in COPD patients were different between the HA and LA groups.

Conclusions: The COPD patients living at HA had a higher proportion of PH than those living at LA. At LA, increased B-type natriuretic peptide (BNP) and direct bilirubin (DB) were predictors for PH in COPD patients. However, at HA, increased DB was a predictor of PH in COPD patients.

Keywords: Chronic obstructive pulmonary disease; High altitude; Predictor; Pulmonary arterial hypertension.

Conflict of interest statement

The authors declare no conflicts of financial interest.

- 76 references
- 3 figures

SUPPLEMENTARY INFO

MeSH terms, Grant supportexpand

FULL TEXT LINKS

J Gen Intern Med

. 2023 Apr 18.
doi: 10.1007/s11606-023-08185-5. Online ahead of print.

Use of the Spirometric "Fixed-Ratio" Underdiagnoses COPD in African-Americans in a Longitudinal Cohort Study

Elizabeth A Regan[1], Melissa E Lowe[2], Barry J Make[3], Jeffrey L Curtis[4,5], Quan Grace Chen[6], Michael H Cho[7], James L Crooks[8,9], Katherine E Lowe[10], Carla Wilson[11], James K O'Brien[3], Gabriela R Oates[12], Arianne K Baldomero[13], Gregory L Kinney[9], Kendra A Young[9], Alejandro A Diaz[14], Surya P Bhatt[15], Meredith C McCormack[16], Nadia N Hansel[16], Victor Kim[17], Nicole E Richmond[9], Gloria E Westney[18], Marilyn G Foreman[18], Douglas J Conrad[19], Dawn L DeMeo[7], Karin F Hoth[20,21], Hannatu Amaza[20], Aparna Balasubramanian[16], Julia Kallet[22], Shandi Watts[22], Nicola A Hanania[23], John Hokanson[9], Terri H Beaty[24], James D Crapo[3], Edwin K Silverman[7], Richard Casaburi[25], Robert Wise[16]
Affiliations expand

- PMID: 37072532

- DOI: 10.1007/s11606-023-08185-5

Abstract

Background: COPD diagnosis is tightly linked to the fixed-ratio spirometry criteria of $FEV_1/FVC < 0.7$. African-Americans are less often diagnosed with COPD.

Objective: Compare COPD diagnosis by fixed-ratio with findings and outcomes by race.

Design: Genetic Epidemiology of COPD (COPDGene) (2007-present), cross-sectional comparing non-Hispanic white (NHW) and African-American (AA) participants for COPD diagnosis, manifestations, and outcomes.

Setting: Multicenter, longitudinal US cohort study.

Participants: Current or former smokers with ≥ 10-pack-year smoking history enrolled at 21 clinical centers including over-sampling of participants with known COPD and AA. Exclusions were pre-existing non-COPD lung disease, except for a history of asthma.

Measurements: Subject diagnosis by conventional criteria. Mortality, imaging, respiratory symptoms, function, and socioeconomic characteristics, including area deprivation index (ADI). Matched analysis (age, sex, and smoking status) of AA vs. NHW within participants without diagnosed COPD (GOLD 0; $FEV_1 \geq 80\%$ predicted and $FEV_1/FVC \geq 0.7$).

Results: Using the fixed ratio, 70% of AA (n = 3366) were classified as non-COPD, versus 49% of NHW (n = 6766). AA smokers were younger (55 vs. 62 years), more often current smoking (80% vs. 39%), with fewer pack-years but similar 12-year mortality. Density distribution plots for FEV_1 and FVC raw spirometry values showed disproportionate reductions in FVC relative to FEV_1 in AA that systematically led to higher ratios. The matched analysis demonstrated GOLD 0 AA had greater symptoms, worse D_LCO, spirometry, BODE scores (1.03 vs 0.54, $p < 0.0001$), and greater deprivation than NHW.

Limitations: Lack of an alternative diagnostic metric for comparison.

Conclusions: The fixed-ratio spirometric criteria for COPD underdiagnosed potential COPD in AA participants when compared to broader diagnostic criteria. Disproportionate reductions in FVC relative to FEV_1 leading to higher FEV_1/FVC were identified in these participants and associated with deprivation. Broader diagnostic criteria for COPD are needed to identify the disease across all populations.

Keywords: COPD; deprivation; diagnosis; fixed ratio; spirometry.

- 42 references

SUPPLEMENTARY INFO

Semin Respir Crit Care Med

. 2023 Apr 18.

doi: 10.1055/s-0043-1766117. Online ahead of print.

Global Trends in Occupational Lung Disease

Robert A Cohen[1], Leonard H T Go[1], Cecile S Rose[2,3]

Affiliations expand

- PMID: 37072021

- DOI: 10.1055/s-0043-1766117

Abstract

Lung diseases caused by workplace exposure are too often mis- or underdiagnosed due in part to nonexistent or inadequate health surveillance programs for workers. Many of these diseases are indistinguishable from those that occur in the general population and are not recognized as being caused at least in part by occupational exposures. More than 10% of all lung diseases are estimated to result from workplace exposures. This study reviews recent estimates of the burden of the most important occupational lung diseases using data published by United Nations specialized agencies as well as the Global Burden of Disease studies. We focus on occupational chronic respiratory disease of which chronic obstructive lung disease and asthma are the most significant. Among occupational cancers, lung cancer is the most common, and is associated with more than 10 important workplace carcinogens. Classic occupational interstitial lung diseases such as asbestosis, silicosis, and

coal workers' pneumoconiosis still comprise a substantial burden of disease in modern industrial societies, while other occupational causes of pulmonary fibrosis and granulomatous inflammation are frequently misclassified as idiopathic. Occupational respiratory infections gained prominence during the severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) pandemic, eclipsing influenza and tuberculosis and other less common workplace infectious agents. The most significant risks are workplace exposures to particulate matter, gases, and fumes as well as occupational carcinogens and asthmagens. We present data on the burden of disease measured by deaths attributable to occupational respiratory disease as well as disability-adjusted years of life lost. Where available, prevalence and incidence data are also presented. These diseases are unique in that they are theoretically 100% preventable if appropriate exposure controls and workplace medical surveillance are implemented. This remains a continuing challenge globally and requires steadfast commitment on the part of government, industry, organized labor, and the medical profession.

Conflict of interest statement

None declared.

Am J Respir Crit Care Med

. 2023 Apr 18.
doi: 10.1164/rccm.202301-0149OC. Online ahead of print.

Eosinophils Sub-Types in Asthmatic and COPD Patients

Carlos Cabrera López[1], Alejandra Sánchez Santos[2], Angelina Lemes Castellano[3], Sara Cazorla Rivero[4], Joaquín Breña Atienza[5], Enrique González Dávila[6], Bartolomé Celli[7,8], Ciro Casanova Macario[9]
Affiliations expand

- PMID: 37071848

- DOI: 10.1164/rccm.202301-0149OC

Abstract

Introduction: There is a differential response to eosinophilic modulation between patients with asthma and chronic obstructive pulmonary disease (COPD). There is also evidence of different subtypes of eosinophils in murine models. However, no study has compared eosinophil subtypes in COPD and in asthmatic patients.

Methods: We studied 10 stable subjects in each of 4 groups: COPD, asthmatics, non-COPD smokers (NCS) and healthy volunteers (V). COPD and asthmatics were matched by age, sex and FEV1%. The following variables were determined: anthropometrics, smoking, exacerbation history, medication use, lung function, and comorbidities. Using flow cytometry and confocal microscopy from blood samples, we determined differences in eosinophils surface proteins and classified them as: 1.- Resident eosinophils [rEos (Siglec-8+CD62L+IL-3Rlo)] or 2. -Inflammatory eosinophils [iEos (Siglec-8+CD62LloIL-3Rhi)]. IL-5 receptor was also determined. Findings were validated in 59 COPD and in 17 asthmatic patients.

Results: Asthmatics had a higher proportion (%) of iEos (25 ± 15) compared to COPD patients (0,5 ± 1), NCS (0,14 ± 0,24), and V (0,67 ± 1,72). In asthmatics, the proportion of iEos was independent of total eosinophil number. iEos had higher IL5 receptor than the rEos (777,02 ± 124,55 vs. 598,35 ± 318,69, p<0,01). In COPD patients there was no relation between iEos numbers with ICS use, disease severity or exacerbations rate. The findings in COPD and asthma patients were confirmed in validation cohorts.

Conclusion: There are differences in the sub-types of circulating eosinophils between asthmatic and COPD patients. This could have clinical implications in the interpretation of eosinophil significance and approach to therapy in those patients.

Keywords: Asthma; COPD; Eosinophils; Sub-types.

Semin Respir Crit Care Med
.
. 2023 Apr 17.
doi: 10.1055/s-0043-1764408. Online ahead of print.

Chronic Obstructive Pulmonary Disease and Work: The Continuing Narrative

David Fishwick[1,2], Chris Barber[3], Ruth Wiggans[4]
Affiliations expand

- PMID: 37068517

- DOI: 10.1055/s-0043-1764408

Abstract

It has long been recognized that harmful inhaled workplace exposures can contribute to the development of chronic obstructive pulmonary disease (COPD). This article, intended for the clinician, summarizes some of this evidence and some areas of controversy. Current estimates based on pooled epidemiological analyses of population-based studies identify that approximately 14% of the burden of COPD (and 13% of the burden of chronic bronchitis) is attributable to such exposures. In addition to these approaches, various studies implicate specific exposures as contributing. Certain of these relating to cadmium, coal, and respirable crystalline silica are discussed in more detail. Despite this amassed evidence to date supporting associations between COPD and workplace exposures, there have been surprisingly few studies that have attempted to assess the attribution by experts of an occupational cause in cases of COPD. One study, using hypothetical cases of COPD, noted that while expert physicians were willing to make such an occupational link, this was only likely in cases with light smoking histories and a priori defined heavy occupational exposures. Relatively recent data relating to computed tomography (CT) scan appearances may give the clinician a further guide. Several studies from populations have now linked potentially harmful occupational exposures specifically with the presence of emphysema on CT scanning. It will be of interest to see if this finding, along with other clinical attributes of cases such as smoking and family histories, exclusion of asthma, genetic data, and the nature of workplace exposures, will increase the future diagnosis by clinicians of occupational COPD. In the interim, while better diagnostic approaches are developed, we suggest that consideration of an occupational cause is an important part of the clinical investigation of cases of COPD. Finally, we suggest that evidence-based workplace

preventive strategies for occupational COPD should be informed by knowledge of which exposures are most important to reduce, and whether and when intervention to reduce exposure at an individual worker level is warranted.

Conflict of interest statement

None declared.

Review

Med Clin (Barc)

. 2023 Apr 21;160(8):355-363.
doi: 10.1016/j.medcli.2023.01.008. Epub 2023 Feb 16.

Telemedicine in the management of chronic obstructive pulmonary disease: A systematic review

[Article in English, Spanish]

Marc Vila[1], Vinicius Rosa Oliveira[2], Alvar Agustí[3]
Affiliations expand

- PMID: 36801105

- DOI: 10.1016/j.medcli.2023.01.008

Abstract

Telemedicine is defined as the use of electronic technology for information and communication by healthcare professionals with patients (or care givers) aiming at providing and supporting healthcare to patients away from healthcare institutions. This systematic review over the last decade (2013-2022) investigates the use of telemedicine in patients with chronic obstructive pulmonary disease (COPD). We identified 53 publications related to: (1) home tele-monitorization; (2) tele-education and self-management; (3) telerehabilitation; and (4) mobile health (mHealth). Results showed that, although evidence is still weak in many of these domains, results are positive in terms of improvement of health-status, use of health-care resources, feasibility, and patient satisfaction. Importantly, no safety issues were identified. Thus, telemedicine can be considered today as a potential complement to usual healthcare.

Keywords: Bronquitis crónica; Chronic bronchitis; Chronic obstructive pulmonary disease (COPD); Emphysema; Enfermedad pulmonar obstructiva crónica (EPOC); Enfisema; eHealth; eSalud; mHealth and telemedicine; mSalud y telemedicina.

Editorial

Eur Respir J

. 2023 Apr 20;61(4):2202318.
doi: 10.1183/13993003.02318-2022. Print 2023 Apr.

ERJ advances: state of the art in definitions and diagnosis of COPD

Sachin Ananth[1], John R Hurst[2]

Affiliations expand

- PMID: 36796835

- DOI: 10.1183/13993003.02318-2022

No abstract available

Conflict of interest statement

Conflict of interest: S. Ananth has nothing to disclose. Conflict of interest: J.R. Hurst reports consulting fees from AstraZeneca and GSK; lecture honoraria from Boehringer Ingelheim, Chiesi and Takeda; travel support and advisory board membership with AstraZeneca; and donation of oximeters from Nonin; outside the submitted work.

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

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

1
BMC Prim Care

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. 2023 Apr 20;24(1):103.
doi: 10.1186/s12875-023-02059-9.

Adjusted morbidity groups and survival: a retrospective cohort study of

primary care patients with chronic conditions

Mariana Bandeira-de Oliveira[1], Teresa Aparicio-González[2], Isabel Del Cura-González[3,4,5,6], Carmen Suárez-Fernández[7,8], Ricardo Rodríguez-Barrientos[3,4,6], Jaime Barrio-Cortes[9,10,11,12,13]
Affiliations expand

- PMID: 37081395
- PMCID: PMC10120109
- DOI: 10.1186/s12875-023-02059-9

Abstract

Background: Chronic conditions are one of the main determinants of frailty, functional disability, loss of quality of life and the number one cause of death worldwide. This study aimed to describe the survival of patients with chronic conditions who were followed up in primary care according to the level of risk by adjusted morbidity groups and to analyse the effects of sex, age, clinician and care factors on survival.

Methods: This was a longitudinal observational study of a retrospective cohort of patients with chronic conditions identified by the adjusted morbidity group stratifier of the electronic medical records in a primary health centre of the Region of Madrid, which has an assigned population of 18,107 inhabitants. The follow-up period was from June 2015 to June 2018. A description of survival according to the Kaplan-Meier method and Cox proportional hazards multivariate regression model was used to analyse the effects of sex, age, clinician and care factors.

Results: A total of 9,866 patients with chronic conditions were identified; 77.4% (7,638) had a low risk, 18.1% (1,784) had a medium risk, and 4.5% (444) had a high risk according to the adjusted morbidity groups. A total of 477 patients with chronic conditions died (4.8%). The median survival was 36 months. The factors associated with lower survival were age over 65 years (hazard ratio [HR] = 1.3; 95% confidence interval [CI] = 1.1-1.6), receiving palliative care (HR = 3.4; 95% CI = 2.6-4.5), high versus low risk level (HR = 2.4; 95% CI = 1.60-3.7), five chronic conditions or more (HR = 1.5; 95% CI = 1.2-2), complexity index (HR = 1.01; 95% CI = 1.02-1.04) and polymedication (HR = 2.6; 95% CI = 2.0-3.3).

Conclusions: There was a gradual and significant decrease in the survival of patients with chronic conditions according to their level of risk as defined by adjusted morbidity groups. Other factors, such as older age, receiving palliative care, high number of chronic conditions, complexity, and polymedication, had a negative effect on survival. The adjusted morbidity groups are useful in explaining survival outcomes and may be valuable for clinical practice, resource planning and public health research.

Keywords: Chronic conditions; Multimorbidity; Primary care; Risk levels; Survival.

Conflict of interest statement

The authors declare that they have no competing interests.

- 52 references
- 1 figure

2

Editorial

BMJ

. 2023 Apr 20;381:p898.
doi: 10.1136/bmj.p898.

Multimorbidity deserves its makeover

Tessa Richards[1]
Affiliations expand

- PMID: 37080604

- DOI: 10.1136/bmj.p898

No abstract available

Conflict of interest statement

Competing interests: none declared.

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

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3

J R Soc Med

. 2023 Apr 20;1410768231168382.
doi: 10.1177/01410768231168382. Online ahead of print.

Social care need in multimorbidity

Glenn Simpson[1], Jonathan Stokes[2], Andrew Farmer[3], Hajira Dambha-Miller[1]
Affiliations expand

- PMID: 37078268

- DOI: 10.1177/01410768231168382

No abstract available

FULL TEXT LINKS

Proceed to details

J Affect Disord

. 2023 Apr 17;S0165-0327(23)00508-6.
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Depressive symptoms and risk of incident cardiometabolic multimorbidity in community-dwelling older adults: The China Health and Retirement Longitudinal Study

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Affiliations expand

- PMID: 37075824

- DOI: 10.1016/j.jad.2023.04.048

Abstract

Background: Depressive symptoms are associated with an increased risk of developing cardiometabolic diseases (CMDs). However, the relationship between depressive symptoms and cardiometabolic multimorbidity (CMM) remains unclear. Therefore, we aimed to examine whether depressive symptoms were associated with an increased risk of incident CMM in middle-aged and older Chinese adults.

Methods: This prospective cohort study included 6663 participants who were free of CMM at baseline from the China Health and Retirement Longitudinal Study. Depressive symptoms were assessed by the Center for Epidemiologic Studies Depression Scale-10 (CESD-10). Incident CMM refers to the coexistence of ≥2 CMDs (heart disease, stroke, or diabetes). Multivariable logistic regressions and restricted cubic splines were performed to assess the association between depressive symptoms and incident CMM.

Results: The median CESD-10 score at baseline was 7 (IQR: 3 to 12). Over 4 years of follow-up, 309 participants (4.6 %) developed CMM. After adjusting for sociodemographic, behavioral, and traditional clinical risk factors, a higher frequency of depressive symptoms was associated with an increased risk of incident CMM (per 9-point higher CESD-10 score OR: 1.73; 95 % CI: 1.48-2.03). The association between the CESD-10 score and incident CMM was more obvious in women (OR: 2.02; 95 % CI: 1.63-2.51) than in men (OR: 1.16; 95 % CI: 0.86-1.56) ($P_{interaction}$ = 0.005).

Limitations: Heart diseases and stroke were determined based on self-reported physician diagnoses.

Conclusions: A higher frequency of depressive symptoms at baseline increased the risk of incident CMM within four years among middle-aged and older individuals in China.

Keywords: Cardiometabolic multimorbidity; Cohort study; Depressive symptoms; Elderly.

Conflict of interest statement

Conflict of interest The authors declare that there is no conflict of interest.

Observational Study

BMC Med

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Validation of patient- and GP-reported core sets of quality indicators for older adults with multimorbidity in primary

care: results of the cross-sectional observational MULTIqual validation study

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Affiliations expand

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- PMCID: PMC10111827
- DOI: 10.1186/s12916-023-02856-0

Free PMC article

Abstract

Background: Older adults with multimorbidity represent a growing segment of the population. Metrics to assess quality, safety and effectiveness of care can support policy makers and healthcare providers in addressing patient needs. However, there is a lack of valid measures of quality of care for this population. In the MULTIqual project, 24 general practitioner (GP)-reported and 14 patient-reported quality indicators for the healthcare of older adults with multimorbidity were developed in Germany in a systematic approach. This study aimed to select, validate and pilot core sets of these indicators.

Methods: In a cross-sectional observational study, we collected data in general practices (n = 35) and patients aged 65 years and older with three or more chronic conditions (n = 346). One-dimensional core sets for both perspectives were selected by stepwise backward selection based on corrected item-total correlations. We established structural validity, discriminative capacity, feasibility and patient-professional agreement for the selected indicators. Multilevel multivariable linear regression models adjusted for random effects at practice level were calculated to examine construct validity.

Results: Twelve GP-reported and seven patient-reported indicators were selected, with item-total correlations ranging from 0.332 to 0.576. Fulfilment rates ranged from 24.6 to 89.0%. Between 0 and 12.7% of the values were missing. Seventeen indicators had agreement rates between patients and professionals of 24.1% to 75.9% and one had 90.7%

positive and 5.1% negative agreement. Patients who were born abroad (- 1.04, 95% CI = - 2.00/ - 0.08, p = 0.033) and had higher health-related quality of life (- 1.37, 95% CI = - 2.39/ - 0.36, p = 0.008), fewer contacts with their GP (0.14, 95% CI = 0.04/0.23, p = 0.007) and lower willingness to use their GPs as coordinators of their care (0.13, 95% CI = 0.06/0.20, p < 0.001) were more likely to have lower GP-reported healthcare quality scores. Patients who had fewer GP contacts (0.12, 95% CI = 0.04/0.20, p = 0.002) and were less willing to use their GP to coordinate their care (0.16, 95% CI = 0.10/0.21, p < 0.001) were more likely to have lower patient-reported healthcare quality scores.

Conclusions: The quality indicator core sets are the first brief measurement tools specifically designed to assess quality of care for patients with multimorbidity. The indicators can facilitate implementation of treatment standards and offer viable alternatives to the current practice of combining disease-related metrics with poor applicability to patients with multimorbidity.

Keywords: Comorbidity; Multimorbidity; Primary care; Quality measurement; Validation study.

Conflict of interest statement

MS, DL, IS and HH authored the DEGAM guideline on multimorbidity but have no other competing interests to declare. All other authors declare that they have no competing interests.

- 79 references
- 1 figure

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Impact of multimorbidity patterns in hospital admissions: the case study of asthma

Diana Portela[1,2,3], Pedro Pereira Rodrigues[1,3], Alberto Freitas[1,3], Elísio Costa[3,4], Jean Bousquet[5,6,7], João Almeida Fonseca[1,3], Bernardo Sousa Pinto[1,3]
Affiliations expand

- PMID: 36848045

- DOI: 10.1080/02770903.2023.2185154

Abstract

Background: Most previous studies assessing multimorbidity in asthma assessed the frequency of individual comorbid diseases. **Objective:** We aimed to assess the frequency and clinical and economic impact of co-occurring groups of comorbidities (comorbidity patterns using the Charlson Comorbidity Index) on asthma hospitalizations. **Methods:** We assessed the dataset containing a registration of all Portuguese hospitalizations between 2011-2015. We applied three different approaches (regression models, association rule mining, and decision trees) to assess both the frequency and impact of comorbidities patterns in the length-of-stay, in-hospital mortality and hospital charges. For each approach, separate analyses were performed for episodes with asthma as main and as secondary diagnosis. Separate analyses were performed by participants' age group. **Results:** We assessed 198340 hospitalizations in patients >18 years old. Both in hospitalizations with asthma as main or secondary diagnosis, combinations of diseases involving cancer, metastasis, cerebrovascular disease, hemiplegia/paraplegia, and liver disease displayed a relevant clinical and economic burden. In hospitalizations having asthma as a secondary diagnosis, we identified several comorbidity patterns involving asthma and associated with increased length-of-stay (average impact of 1.3 [95%CI=0.6-2.0]-3.2 [95%CI=1.8-4.6] additional days), in-hospital mortality (OR range=1.4 [95%CI=1.0-2.0]-7.9 [95%CI=2.6-23.5]) and hospital charges (average additional charges of 351.0 [95%CI=219.1-482.8] to 1470.8 [95%CI=1004.6-1937.0]) Euro compared with hospitalizations without any registered Charlson comorbidity). Consistent results were observed with association rules mining and decision tree approaches. **Conclusions:** Our findings highlight the importance not only of a complete assessment of patients with

asthma, but also of considering the presence of asthma in patients admitted by other diseases, as it may have a relevant impact on clinical and health services outcomes.

Keywords: Economic impact; asthma multimorbidity patterns; intelligent data analysis.

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

1

Case Reports

Respirol Case Rep

. 2023 Apr 17;11(5):e01147.
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Tezepelumab treatment for allergic bronchopulmonary aspergillosis

Hiroaki Ogata[1], Kachi Sha[1], Yasuaki Kotetsu[1], Aimi Enokizu-Ogawa[1], Katsuyuki Katahira[1], Akiko Ishimatsu[1], Kazuhito Taguchi[1], Atsushi Moriwaki[1], Makoto Yoshida[1]
Affiliations expand

- PMID: 37082171
- PMCID: PMC10111631
- DOI: 10.1002/rcr2.1147

Abstract

An 82-year-old man had been diagnosed with asthma. He experienced repeated exacerbations requiring treatment with a systemic corticosteroid despite being treated with medications including high-dose fluticasone furoate/umeclidinium/vilanterol, montelukast sodium, and theophylline; treatment with mepolizumab was then initiated. The patient had been free from exacerbations for 15 months; however, he suffered from post-obstructive pneumonia and atelectasis secondary to mucoid impaction in the right middle lobe of the lung, accompanied by a productive cough, wheezing, dyspnea, and right chest pain. In addition to the development of mucus plugs, the levels of serum IgE specific to Aspergillus spp. became positive; a definite diagnosis of allergic bronchopulmonary aspergillosis (ABPA) was established. The patient underwent treatment with tezepelumab. Over 3 months, the mucus plugs and pulmonary opacities diminished gradually in parallel with the improvement in the control of asthmatic symptoms. Tezepelumab might provide a novel steroid-sparing strategy for the management of ABPA, although further studies are required.

Keywords: allergic bronchopulmonary aspergillosis; asthma; mepolizumab; mucoid impaction; tezepelumab.

Conflict of interest statement

None declared.

- 6 references
- 1 figure

. 2023 Apr 18;S1081-1206(23)00264-8.
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Tetanus, diphtheria, and acellular pertussis (Tdap) vaccine coverage in adults with chronic respiratory conditions

Sarah Naeger[1], Denis Macina[2], Vitali Pool[3]
Affiliations expand

- PMID: 37080456

- DOI: 10.1016/j.anai.2023.04.008

No abstract available

Keywords: COPD; Pertussis; Tdap; adults; asthma; vaccination coverage.

Review

Am J Med Sci

. 2023 Apr 18;S0002-9629(23)01139-4.
doi: 10.1016/j.amjms.2023.04.012. Online ahead of print.

Efficacy and safety of intravenous leukotriene receptor antagonists in acute asthma

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Affiliations expand

- PMID: 37080430

- DOI: 10.1016/j.amjms.2023.04.012

Abstract

The incidence of bronchial asthma has increased substantially since recent decades in both children and adults. Moreover, the number of patients presenting with asthma exacerbation to the emergency department has also increased in several countries. Leukotrienes are inflammatory mediators that play an important role in bronchial asthma exacerbation. Leukotriene receptor antagonists reduce asthma exacerbation in chronic asthma; moreover, the current guidelines for asthma management recommend the use of oral leukotriene receptor antagonists for asthma control and reduce further exacerbation. However, data on the use of intravenous leukotriene receptor antagonists during acute asthma exacerbation are scarce. Nevertheless, currently available data revealed a trend of significant improvement of acute asthma and rapid reversal of airflow obstruction when administered during an acute asthma attack. This review aims to summarize currently available data on the use of intravenous leukotriene receptor antagonists in adult patients with acute asthma exacerbation.

Keywords: Acute asthma; Asthma exacerbation; Intravenous Montelukast; Leukotriene Receptor Antagonist; Randomized Trial.

Expert Rev Respir Med
.
2023 Apr 20.
doi: 10.1080/17476348.2023.2205127. Online ahead of print.

Impact of aging on immune function in the pathogenesis of pulmonary diseases: Potential for therapeutic targets

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Affiliations expand

- PMID: 37078192

- DOI: 10.1080/17476348.2023.2205127

Abstract

Introduction: Several immunological alterations that occur during pulmonary diseases often mimic alterations observed in the aged lung. From the molecular perspective, pulmonary diseases and aging partake in familiar mechanisms associated with significant dysregulation of the immune systems. Here, we summarized the findings of how aging alters immunity to respiratory conditions to identify age-impacted pathways and mechanisms that contribute to the development of pulmonary diseases.

Areas covered: The current review examines the impact of age-related molecular alterations in the aged immune system during various lung diseases such as COPD, IPF, Asthma and alongside many others that could possibly improve on current therapeutic interventions. Moreover, our increased understanding of this phenomenon may play a primary role in shaping immunomodulatory strategies to boost outcomes in the elderly. Here, the authors presents new insights into the context of lung-related diseases and

describe the alterations in the functioning of immune cells during various pulmonary conditions altered with age.

Expert opinion: The expert opinion provided the concepts on how aging alters immunity during pulmonary conditions, and suggests the associated mechanisms during the development of lung diseases. As a result, it becomes important to comprehend the complex mechanism of aging in the immune lung system.

Keywords: Aging; COPD; Cellular senescence; Cytokines; IPF; Immunity; Lymphocytes.

ERJ Open Res

. 2023 Apr 17;9(2):00561-2022.
doi: 10.1183/23120541.00561-2022. eCollection 2023 Mar.

ERS International Congress 2022: highlights from the Basic and Translational Science Assembly

Sara Cuevas Ocaña[1], Natalia El-Merhie[2,3], Merian E Kuipers[4,3], Mareike Lehmann[5,6,3], Sara Rolandsson Enes[7,3], Carola Voss[5,3], Lareb S N Dean[8,9,3], Matthew Loxham[8,9,10,3], Agnes W Boots[11], Suzanne M Cloonan[12], Catherine M Greene[13], Irene H Heijink[14], Audrey Joannes[15], Arnaud A Mailleux[16], Nahal Mansouri[17,18], Niki L Reynaert[19], Anne M van der Does[4], Darcy E Wagner[20,21], Niki Ubags[18]

Affiliations expand

- PMID: 37077558

- PMCID: PMC10107060

- DOI: 10.1183/23120541.00561-2022

Free PMC article

Abstract

In this review, the Basic and Translational Science Assembly of the European Respiratory Society provides an overview of the 2022 International Congress highlights. We discuss the consequences of respiratory events from birth until old age regarding climate change related alterations in air quality due to pollution caused by increased ozone, pollen, wildfires and fuel combustion as well as the increasing presence of microplastic and microfibres. Early life events such as the effect of hyperoxia in the context of bronchopulmonary dysplasia and crucial effects of the intrauterine environment in the context of pre-eclampsia were discussed. The Human Lung Cell Atlas (HLCA) was put forward as a new point of reference for healthy human lungs. The combination of single-cell RNA sequencing and spatial data in the HLCA has enabled the discovery of new cell types/states and niches, and served as a platform that facilitates further investigation of mechanistic perturbations. The role of cell death modalities in regulating the onset and progression of chronic lung diseases and its potential as a therapeutic target was also discussed. Translational studies identified novel therapeutic targets and immunoregulatory mechanisms in asthma. Lastly, it was highlighted that the choice of regenerative therapy depends on disease severity, ranging from transplantation to cell therapies and regenerative pharmacology.

Conflict of interest statement

Conflict of interest: S. Cuevas Ocaña was supported by an Action for Pulmonary Fibrosis award to support attendance at the European Respiratory Society International Congress 2022. S. Rolandsson Enes declares personal consulting fees from Swedish StromaBio AB outside the submitted work. C. Voss declares research funding and salary from the European Union's Horizon 2020 research and innovation programme under grant agreement number 953183 (HARMLESS) and number 686098 (SmartNanoTox); and nonfinancial interests in spin-off company Infinite from H2020 SmartNanoTox. L.S.N. Dean reports being a postdoctoral research associate on a Biotechnology and Biological Sciences Research Council (BBSRC) David Phillips Fellowship (BB/V004573/1) and an NIHR Southampton Biomedical Research Centre (BRC) Senior Research Fellowship, and that they received a British Association for Lung Research Travel Award to the European Respiratory Society International Congress 2022. M. Loxham reports a BBSRC David Phillips Fellowship (BB/V004573/1) and an NIHR Southampton BRC Senior Research Fellowship to fund research and salary for a fellow; as well as research and equipment grants (total ~GBP 13 000) from Asthma, Allergy, and Inflammation Research Charity (UK), in the 36 months prior

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- 101 references

ERJ Open Res

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Adding a biologic to allergen immunotherapy increases treatment efficacy

Andrzej Bożek[1], Andreas Fischer[2], Agnieszka Bogacz-Piaseczynska[1], Giorgio Walter Canonica[3]
Affiliations expand

- PMID: 37077549
- PMCID: PMC10107063
- DOI: 10.1183/23120541.00639-2022

Free PMC article

Abstract

Background: The application of allergen immunotherapy (AIT) in combination with biological agents has been found to increase both the safety and efficacy of the desensitisation procedure in patients with food and insect venom allergy. The aim of our study was to compare the effectiveness of AIT in patients with house dust mite (HDM)-driven asthma treated with and without omalizumab.

Materials and methods: The study was a placebo-controlled, three-armed, randomised, parallel-group, multicentre trial that included 52 patients with HDM-driven asthma. Only patients with monosensitisation to HDM were included. The study compared three patterns of therapy: omalizumab alone, HDM subcutaneous immunotherapy (SCIT-HDM)+omalizumab, and SCIT alone. The main outcomes were evaluate the Asthma Control Questionnaire (ACQ) score, number of asthma exacerbations and reduction in the daily dose of inhaled steroids during 12 months of observation.

Results: All variants of therapy led to significantly improved ACQ scores and reduction of asthma exacerbations in all study groups after 12 months of treatment. A statistically significant reduction in the daily doses of inhaled corticosteroids in the group with omalizumab alone (650±150 µg *versus* 500±50 µg for p=0.003) or SCIT-HDM+omalizumab (550±250 µg *versus* 375±75 µg for p=0.001) was observed, favouring the latter group.

Conclusion: The efficacy of AIT for HDM-driven asthma is significantly increased by the combination of allergen vaccine with omalizumab.

Conflict of interest statement

Conflict of interest: None declared.

- 14 references
- 4 figures

Clin Respir J

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. 2023 Apr 19.
doi: 10.1111/crj.13617. Online ahead of print.

Association of nitric oxide synthase gene polymorphism with asthma: A systematic review and meta-analysis

Zeru Fan[1], Tao Liu[2], Wei Na[1]
Affiliations expand

- PMID: 37076778

- DOI: 10.1111/crj.13617

Abstract

Introduction: This study examines the associations between asthma and nitric oxide (NO) synthase (NOS) gene polymorphisms.

Methods: After a systematic literature search in electronic databases, studies were selected based on eligibility criteria. Data were extracted from research articles and were synthesized and tabulated. Where a particular polymorphism data were reported by

multiple studies, meta-analyses of odds ratios were performed, or odds ratios reported by individual studies were pooled.

Results: Twenty studies (4450 asthma patients and 5306 non-asthmatic individuals) were identified. Many studies did not find any association between CCTTT repeat polymorphism in NOS2 gene and asthma. However, a study reported that pretreatment mean exhaled NO levels in asthmatics were found to be significantly higher in genotypes with higher number of CCTTT repeats. Also, alleles with <11 CCTTT repeats were associated with poor asthma treatment outcomes. A single nucleotide polymorphism, G894T, in NOS3 gene was not found to be significantly associated with asthma by at least four studies. However, a T allele at this locus was associated with lower NO levels. Also, G894T frequency was significantly higher in asthmatic children who responded to inhaled corticosteroids along with long-lasting beta2-agonists. A T allele of NOS3 786C/T polymorphism increased the probability of bronchial asthma with comorbid essential hypertension in asthma patients. Asthma severity also differed for different Ser608Leu exon 16 variants of NOS2 gene.

Conclusions: Several polymorph NOS gene variants are identified, some of which appear to have influence on asthma prevalence or outcomes. However, data are varying depending on the nature of variant, ethnicity, study design, and disease parameters.

Keywords: NOS; asthma; gene polymorphism; nitric oxide synthase; variants.

- 33 references

SUPPLEMENTARY INFO

Grant supportexpand

FULL TEXT LINKS

. 2023 Apr 19;32(168):220193.
doi: 10.1183/16000617.0193-2022. Print 2023 Jun 30.

Cytokine-targeted therapies for asthma and COPD

Florence Schleich[1,2], Nicolas Bougard[3], Catherine Moermans[2], Mare Sabbe[3], Renaud Louis[3,2]
Affiliations expand

- PMID: 37076177

- PMCID: PMC10113955

- DOI: 10.1183/16000617.0193-2022

Free PMC article

Abstract

Asthma affects over 300 million people worldwide and its prevalence is increasing. COPD is the third leading cause of death globally. Asthma and COPD are complex inflammatory diseases of the airways in which impaired host defences lead to increased susceptibility to pathogens, pollutants and allergens. There is a constant interplay between host and the environment. Environmental exposures can alter the lung microbiome and influence the development of sensitisation by disrupting normal immunoregulation. The underlying airway inflammation in severe asthma is heterogeneous, with upregulation of type 2 cytokines in most cases but increased neutrophilic inflammation and activated T-helper 17 mediated immunity in others. COPD may also comprise several different phentoypes that are driven by different molecular mechanisms or endotypes. This disease heterogeneity is affected by comorbidities, treatments and environmental exposures. Recent intervention trials have shed light on the pathways beyond type 2 inflammation that can lead to beneficial outcomes *versus* potentially deleterious effects. We have made a great deal of progress over the last 10 years in terms of immunology and the pathophysiology of asthma and this has led to the development of novel treatments and major improvements in severe asthma outcomes. In COPD, however, no targeted treatments have demonstrated great improvements. This article reviews the mechanism of action and efficacy of the available biologics in asthma and COPD.

Conflict of interest statement

Conflict of interest: F. Schleich has received grants or contracts from GSK, AstraZeneca and Chiesi; payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from GSK, AstraZeneca, Chiesi and TEVA; and has participated on a Data Safety Monitoring Board or Advisory Board for GSK and AstraZeneca. Conflict of interest: N. Bougard has nothing to disclose. Conflict of interest: C. Moermans has nothing to disclose. Conflict of interest: M. Sabbe has nothing to disclose. Conflict of interest: R. Louis has received grants or contracts from GSK, AstraZeneca and Chiesi; payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from GSK, AstraZeneca, Chiesi and TEVA; and has participated on a Data Safety Monitoring Board or Advisory Board for GSK and AstraZeneca.

- 122 references
- 1 figure

Am J Respir Crit Care Med

. 2023 Apr 19.

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Is Efficacy of Tezepelumab Independent of Severe Asthma Phenotype?

Guy Brusselle[1,2], Sebastian Riemann[3]

Affiliations expand

- PMID: 37074294

- DOI: 10.1164/rccm.202304-0700ED

No abstract available

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Allergy

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. 2023 Apr 19.
doi: 10.1111/all.15747. Online ahead of print.

Dupilumab Improves Long-term Outcomes in Patients With Uncontrolled, Moderate-to-Severe GINA-Based Type 2 Asthma, Irrespective of Allergic Status

Klaus F Rabe[1,2], Ian D Pavord[3], William W Busse[4], Geoffrey L Chupp[5], Kenji Izuhara[6], Arman Altincatal[7], Rebecca Gall[8], Nami Pandit-Abid[9], Yamo Deniz[8], Paul J Rowe[9], Juby A Jacob-Nara[9], Amr Radwan[8]

Affiliations expand

- PMID: 37073882

- DOI: 10.1111/all.15747

Abstract

Background: Previous research has shown greater efficacy of dupilumab in patients with uncontrolled asthma and type 2 inflammation. We analyzed dupilumab's efficacy in patients from TRAVERSE study with or without evidence of allergic asthma and type 2 inflammation per current GINA guidelines (≥150 eosinophils/μL or FeNO ≥20 ppb).

Methods: All patients aged ≥12 years who rolled over from the placebo-controlled QUEST study (NCT02414854) to TRAVERSE (NCT02134028) received add-on dupilumab 300mg every two weeks for up to 96 weeks. We assessed annualized severe asthma exacerbation rates (AERs) and changes from parent study baseline (PSBL) in pre-bronchodilator FEV_1 and 5-item asthma control questionnaire (ACQ-5) score in patients with moderate-to-severe type 2 asthma with and without evidence of allergic asthma at PSBL.

Results: In TRAVERSE, dupilumab consistently reduced AER across all subgroups. By Week 96, dupilumab increased pre-bronchodilator FEV_1 from PSBL by 0.35-0.41L in patients receiving placebo during QUEST (placebo/dupilumab) and 0.34-0.44L in those receiving dupilumab during QUEST (dupilumab/dupilumab) with an allergic phenotype at baseline. In patients without evidence of allergic asthma, pre-bronchodilator FEV_1 improved by 0.38-0.41L and 0.33-0.37L, respectively. By Week 48, ACQ-5 scores decreased from PSBL by 1.63-1.69 (placebo/dupilumab) and 1.74-1.81 (dupilumab/dupilumab) points across subgroups with allergic asthma, and 1.75-1.83 (placebo/dupilumab) and 1.78-1.86 (dupilumab/dupilumab) in those without.

Conclusions: Long-term treatment with dupilumab reduced exacerbation rates, and improved lung function and asthma control in patients with asthma with type 2 inflammation as per current GINA guidance and irrespective of evidence of allergic asthma.

J Gen Intern Med

. 2023 Apr 18.

doi: 10.1007/s11606-023-08185-5. Online ahead of print.

Use of the Spirometric "Fixed-Ratio" Underdiagnoses COPD in African-Americans in a Longitudinal Cohort Study

Elizabeth A Regan[1], Melissa E Lowe[2], Barry J Make[3], Jeffrey L Curtis[4,5], Quan Grace Chen[6], Michael H Cho[7], James L Crooks[8,9], Katherine E Lowe[10], Carla Wilson[11], James K O'Brien[3], Gabriela R Oates[12], Arianne K Baldomero[13], Gregory L Kinney[9], Kendra A Young[9], Alejandro A Diaz[14], Surya P Bhatt[15], Meredith C McCormack[16], Nadia N Hansel[16], Victor Kim[17], Nicole E Richmond[9], Gloria E Westney[18], Marilyn G Foreman[18], Douglas J Conrad[19], Dawn L DeMeo[7], Karin F Hoth[20,21], Hannatu Amaza[20], Aparna Balasubramanian[16], Julia Kallet[22], Shandi Watts[22], Nicola A Hanania[23], John Hokanson[9], Terri H Beaty[24], James D Crapo[3], Edwin K Silverman[7], Richard Casaburi[25], Robert Wise[16]
Affiliations expand

- PMID: 37072532

- DOI: 10.1007/s11606-023-08185-5

Abstract

Background: COPD diagnosis is tightly linked to the fixed-ratio spirometry criteria of $FEV_1/FVC < 0.7$. African-Americans are less often diagnosed with COPD.

Objective: Compare COPD diagnosis by fixed-ratio with findings and outcomes by race.

Design: Genetic Epidemiology of COPD (COPDGene) (2007-present), cross-sectional comparing non-Hispanic white (NHW) and African-American (AA) participants for COPD diagnosis, manifestations, and outcomes.

Setting: Multicenter, longitudinal US cohort study.

Participants: Current or former smokers with ≥ 10-pack-year smoking history enrolled at 21 clinical centers including over-sampling of participants with known COPD and AA. Exclusions were pre-existing non-COPD lung disease, except for a history of asthma.

Measurements: Subject diagnosis by conventional criteria. Mortality, imaging, respiratory symptoms, function, and socioeconomic characteristics, including area deprivation index

(ADI). Matched analysis (age, sex, and smoking status) of AA vs. NHW within participants without diagnosed COPD (GOLD 0; $FEV_1 \geq 80\%$ predicted and $FEV_1/FVC \geq 0.7$).

Results: Using the fixed ratio, 70% of AA (n = 3366) were classified as non-COPD, versus 49% of NHW (n = 6766). AA smokers were younger (55 vs. 62 years), more often current smoking (80% vs. 39%), with fewer pack-years but similar 12-year mortality. Density distribution plots for FEV_1 and FVC raw spirometry values showed disproportionate reductions in FVC relative to FEV_1 in AA that systematically led to higher ratios. The matched analysis demonstrated GOLD 0 AA had greater symptoms, worse D_LCO, spirometry, BODE scores (1.03 vs 0.54, $p < 0.0001$), and greater deprivation than NHW.

Limitations: Lack of an alternative diagnostic metric for comparison.

Conclusions: The fixed-ratio spirometric criteria for COPD underdiagnosed potential COPD in AA participants when compared to broader diagnostic criteria. Disproportionate reductions in FVC relative to FEV_1 leading to higher FEV_1/FVC were identified in these participants and associated with deprivation. Broader diagnostic criteria for COPD are needed to identify the disease across all populations.

Keywords: COPD; deprivation; diagnosis; fixed ratio; spirometry.

- 42 references

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J Asthma

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. 2023 Apr 18;1-11.
doi: 10.1080/02770903.2023.2203743. Online ahead of print.

Does asthma-bronchiectasis overlap syndrome (ABOS) really exist?

Angelica Tiotiu[1,2], Miguel-Angel Martinez-Garcia[3,4], Paula Mendez-Brea[5], Iria Roibas-Veiga[5], Francisco-Javier Gonzalez-Barcala[4,6,7,8]
Affiliations expand

- PMID: 37071539

- DOI: 10.1080/02770903.2023.2203743

Abstract

Objective: To analyse the relationship between asthma and bronchiectasis, as well as the necessary conditions that this connection must meet for this group of patients to be considered a special phenotype.

Data sources: We performed a PubMed search using the MeSH terms "asthma", "bronchiectasis". The literature research was limited to clinical trials, meta-analyses, randomized controlled trials, cohort studies and systematic reviews, involving adult patients, published until November 30th, 2022.

Study selections: Selected papers were initially evaluated by the Authors, to assess their eligibility in contributing to the statements.

Results: The prevalence of bronchiectasis is higher than expected in patients with asthma, particularly in those with more severe disease, and in some patients, between 1.4 and 7 per cent of them, asthma alone could be the cause of bronchiectasisBoth diseases share aetiopathogenic mechanisms, such as neutrophilic and eosinophilic inflammation, altered airway microbiota, mucus hypersecretion, allergen sensitisation, immune dysfunction, altered microRNA, dysfunctional neutrophilic activity and variants of the HLA system. Besides that, they also share comorbidities, such as gastroaesophageal reflux disease and psychiatric illnesses.The clinical presentation of asthma is very similar to patients with bronchiectasis, which could cause mistakes with diagnoses and delays in being prescribed the correct treatment.The coexistence of asthma and bronchiectasis also poses difficulties for the therapeutic focusConclusions: The evidence available seems to support that asthma-bronchiectasis phenotype really exist although longitudinal studies which consistently demonstrate that asthma is the cause of bronchiectasis are still lacking.

Keywords: Asthma; Bronchiectasis; Comorbidities; Eosinophils; Exacerbation; Overlap; Prognosis.

Thorax

. 2023 Apr 17;thorax-2022-219901.
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Asthma hospitalisations and heat exposure in England: a case-crossover study during 2002-2019

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Affiliations expand

- PMID: 37068951

- DOI: 10.1136/thorax-2022-219901

Free article

Abstract

Background: Previous studies have reported an association between warm temperature and asthma hospitalisation. They have reported different sex-related and age-related vulnerabilities; nevertheless, little is known about how this effect has changed over time and how it varies in space. This study aims to evaluate the association between asthma hospitalisation and warm temperature and investigate vulnerabilities by age, sex, time and space.

Methods: We retrieved individual-level data on summer asthma hospitalisation at high temporal (daily) and spatial (postcodes) resolutions during 2002-2019 in England from the NHS Digital. Daily mean temperature at 1 km×1 km resolution was retrieved from the UK Met Office. We focused on lag 0-3 days. We employed a case-crossover study design and fitted Bayesian hierarchical Poisson models accounting for possible confounders (rainfall, relative humidity, wind speed and national holidays).

Results: After accounting for confounding, we found an increase of 1.11% (95% credible interval: 0.88% to 1.34%) in the asthma hospitalisation risk for every 1°C increase in the ambient summer temperature. The effect was highest for males aged 16-64 (2.10%, 1.59% to 2.61%) and during the early years of our analysis. We also found evidence of a decreasing linear trend of the effect over time. Populations in Yorkshire and the Humber and East and West Midlands were the most vulnerable.

Conclusion: This study provides evidence of an association between warm temperature and hospital admission for asthma. The effect has decreased over time with potential explanations including temporal differences in patterns of heat exposure, adaptive mechanisms, asthma management, lifestyle, comorbidities and occupation.

Keywords: asthma epidemiology.

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

Grant supportexpand

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doi: 10.1152/ajpcell.00057.2023. Online ahead of print.

The emerging role of extracellular vesicles as communicators between adipose tissue and pathologic lungs with a special focus on asthma

Sarah Miethe[1], Daniel P Potaczek[1,2,3], Stanislawa Bazan-Socha[4], Melanie Bachl[1], Liliana Schaefer[5], Malgorzata Wygrecka[2,6], Holger Garn[1]
Affiliations expand

- PMID: 37067460

- DOI: 10.1152/ajpcell.00057.2023

Abstract

Extracellular vesicles (EVs) gain increasing attention due to their (patho-)physiological role in intercellular signaling, specifically in the communication between distant organs. Recent studies highlight a connection between the adipose tissue (AT) and the lung via (immuno-)modulatory EVs in disorders, such as obesity-associated asthma and lung cancer-associated cachexia. While lung cancer-derived EVs induce lipolysis and myotube atrophy in vivo, pathogenic effects were also reported in the opposite direction with involvement of adipose tissue-derived EVs in cancer-promoting responses and potentially in asthma development. In contrast, the majority of studies on adipose tissue-derived EVs demonstrate a protective nature on the asthmatic lung. Beneficial effects, such as induction of anti-inflammatory pathways in vitro and in ovalbumin (OVA)-induced asthma mouse models, were particularly conveyed by EVs enriched from AT-derived mesenchymal stem/stromal cells (AT-MSCs), which therefore pose an interesting subject in possible future therapeutic applications. Likewise, AT-MSC-derived EVs exerted beneficial effects in several other pulmonary abnormalities, such as different types of lung injury or pathological changes related to chronic obstructive pulmonary disease. These contradictory findings highlight the need of extensive research to widen the understanding of EVs in the development of diseases and interconnectivity between organs.

Keywords: Adipose tissue-derived mesenchymal stem/stromal cells (AT-MSCs); Asthma; Extracellular vesicles (EVs); Lung disorders; adipose tissue (AT).

Pediatr Pulmonol
. 2023 Apr 17.
doi: 10.1002/ppul.26409. Online ahead of print.

Spirometry and respiratory oscillometry: Feasibility and concordance in schoolchildren with asthma

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Affiliations expand

- PMID: 37067397

- DOI: 10.1002/ppul.26409

Abstract

Objective: The purpose of this study was to describe the feasibility of respiratory oscillometry (RO) in schoolchildren with asthma, and the concordance of its results with those of spirometry, to determine its clinical usefulness.

Methods: RO and spirometry were performed in 154 children (6 to 14-year-old) with asthma, following strict quality criteria for the tests. Their feasibility (probability of valid test, time of execution, number of maneuvers needed to achieve a valid test, and perceived difficulty) was compared. The factors that influence feasibility were analyzed with multivariate methods. FEV1, FEV1/FVC, FVC and FEF25-75 for spirometry, and R5, AX and R5-19 for RO, were converted into z-scores and their concordance was investigated through intraclass correlation coefficients (ICC) and kappa indices for normal/abnormal values.

Results: There were no differences in the probability of obtaining a valid RO or spirometry (83.1% vs. 81.8%, p = 0.868). RO required a lower number of maneuvers [mean (SD) 4.2 (1.8) versus 6.0 (1.6), p < 0.001] and less execution time [5.1 (2.7) versus 7.6 (2.4) minutes, p < 0.001], and patients considered it less difficult. Age increased the probability of obtaining valid RO and spirometry. The concordance of results between RO and spirometry was low, and only between zFEV1 and zAX could it be considered moderate (ICC = 0.412, kappa = 0.427).

Conclusion: RO and spirometry are feasible in children with asthma. RO has some practical advantages, but the concordance of its results with spirometry is low.

Keywords: asthma; child; cross-sectional studies; oscillometry; spirometry.

- 34 references

SUPPLEMENTARY INFO

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FULL TEXT LINKS

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J Asthma

. 2023 Apr 20;1-11.

doi: 10.1080/02770903.2023.2200824. Online ahead of print.

Do improvements in clinical practice guidelines alter pregnancy outcomes in asthmatic women? A single-center retrospective cohort study

J L Robinson[1,2], K L Gatford[1], C P Hurst[3], V L Clifton[4], J L Morrison[2], M J Stark[1,5]
Affiliations expand

- PMID: 37021838

- DOI: 10.1080/02770903.2023.2200824

Abstract

Objective: Asthma occurs in ~17% of Australian pregnancies and is associated with adverse perinatal outcomes, which worsen with poor asthma control. Consequently, the South Australian 'Asthma in Pregnancy' perinatal guidelines were revised in 2012 to address management according to severity. This study investigated if these revised guidelines reduced the impact of maternal asthma on risks of adverse perinatal outcomes before (Epoch 1, 2006-2011) and after the revision (Epoch 2, 2013-2018).

Methods: Routinely collected perinatal and neonatal datasets from the Women's and Children's Hospital (Adelaide, Australia) were linked. Maternal asthma (prevalence:7.5%) was defined as asthma medication use or symptoms described to midwives. In imputation (n = 59131) and complete case datasets (n = 49594), analyses were conducted by inverse proportional weighting and multivariate logistic regression, accounting for confounders.

Results: Overall, maternal asthma was associated with increased risks of any antenatal corticosteroid treatment for threatened preterm birth (aOR 1.319, 95% CI 1.078-1.614), any Cesarean section (aOR 1.196, 95% CI 1.059-1.351), Cesarean section without labor (aOR 1.241, 95% CI 1.067-1.444), intrauterine growth restriction (IUGR, aOR 1.285, 95% CI 1.026-1.61), and small for gestational age (aOR 1.324, 95% CI 1.136-1.542). After guideline revision, asthma-associated risks of any Cesarean section (p < 0.001), any antenatal corticosteroids (p = 0.041), and small for gestational age (p = 0.050), but not IUGR and Cesarean section without labor, were reduced.

Conclusions: Clinical practice guidelines based on the latest evidence do not guarantee clinical efficacy. Since adverse perinatal outcomes did not all improve, this work highlights the need to evaluate the ongoing impact of guidelines on clinical outcomes.

Keywords: Maternal asthma; clinical guidelines; obstetrics; perinatal medicine; pregnancy.

J Asthma

. 2023 Apr 21;1-7.

doi: 10.1080/02770903.2023.2196562. Online ahead of print.

Evaluation of the clinical features and laboratory data of patients with severe asthma classified as super-responder or non super-responder to omalizumab treatment: a single-center real-life study

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Affiliations expand

- PMID: 36971065

- DOI: 10.1080/02770903.2023.2196562

Abstract

Introduction: Omalizumab is used for the treatment of severe allergic asthma.

Objective: The aim of this study was to evaluate the clinical features and laboratory data of patients with severe allergic asthma classified as super-responder or non super-responder to omalizumab.

Methods: Comparisons were made of the laboratory data and clinical features of patients with severe allergic asthma. Patients who had no asthma exacerbation, no oral corticosteroid (OCS) use, asthma control test (ACT) score >20 and forced expiratory volume in 1 s (FEV1) >80% were considered super-responder after omalizumab.

Results: A total of 90 patients were included in the study, comprising 19 (21.1%) males. The age at onset of asthma, allergic rhinitis rate, number of endoscopic sinus surgeries (ESS), intranasal corticosteroid (INS) use, baseline FEV 1 (%) and ACT score were significantly higher in the omalizumab super-responder group (p = 0.013, p = 0.015, p = 0.002, p = 0.001, p = 0.001 and p < 0.001, respectively). The duration of asthma, rate of Chronic Rhinosinusitis with Nasal Polyps (CRSwNP), regular use of OCS, baseline eosinophil count and eosinophil-to-lymphocyte ratio were significantly higher in the omalizumab non super-responder group (p = 0.015, p < 0.001, p = 0.004, p < 0.001 and p < 0.001, respectively). Blood eosinophil count (AUC: 0.187, p < 0.001), eosinophil-to-lymphocyte ratio (AUC: 0.150, p < 0.001) and FEV1 (%) (AUC:0.779, p = 0.001) were determined to have diagnostic value in predicting the treatment response to omalizumab of patients with severe allergic asthma.

Conclusion: High-blood eosinophil levels, CRSwNP and low pretreatment lung capacity may affect omalizumab treatment response in patients with severe allergic asthma. These results should be supported by further multicenter real-life studies.

Keywords: Anti-IgE; anti-asthmatic agents; asthma; omalizumab; treatment efficacy.

J Asthma

. 2023 Apr 21;1-10.

doi: 10.1080/02770903.2023.2193634. Online ahead of print.

Investigations of a combination of atopic status and age of asthma onset identify asthma subphenotypes

Huashi Li[1], Mario Castro[2], Loren C Denlinger[3], Serpil C Erzurum[4], John V Fahy[5], Benjamin Gaston[6], Elliot Israel[7], Nizar N Jarjour[3], Bruce D Levy[7], David T Mauger[8], Wendy C Moore[9], Sally E Wenzel[10], Joe Zein[4], Eugene R Bleecker[1], Deborah A Meyers[1], Yin Chen[11], Xingnan Li[1]; NHLBI Severe Asthma Research Program (SARP)
Affiliations expand

- PMID: 36940238

- DOI: 10.1080/02770903.2023.2193634

Abstract

Objective: Subphenotypes of asthma may be determined by age onset and atopic status. We sought to characterize early or late onset atopic asthma with fungal or non-fungal sensitization (AAFS or AANFS) and non-atopic asthma (NAA) in children and adults in the Severe Asthma Research Program (SARP). SARP is an ongoing project involving well-phenotyped patients with mild to severe asthma.

Methods: Phenotypic comparisons were performed using Kruskal-Wallis or chi-square test. Genetic association analyses were performed using logistic or linear regression.

Results: Airway hyper-responsiveness, total serum IgE levels, and T2 biomarkers showed an increasing trend from NAA to AANFS and then to AAFS. Children and adults with early onset asthma had greater % of AAFS than adults with late onset asthma (46% and 40% vs. 32%; $P < 0.00001$). In children, AAFS and AANFS had lower % predicted FEV_1 (86% and 91% vs. 97%) and greater % of patients with severe asthma than NAA (61% and 59% vs. 43%). In adults with early or late onset asthma, NAA had greater % of patients with severe asthma than AANFS and AAFS (61% vs. 40% and 37% or 56% vs. 44% and 49%). The G allele of rs2872507 in *GSDMB* had higher frequency in AAFS than AANFS and NAA (0.63 vs. 0.55 and 0.55), and associated with earlier age onset and asthma severity.

Conclusions: Early or late onset AAFS, AANFS, and NAA have shared and distinct phenotypic characteristics in children and adults. AAFS is a complex disorder involving genetic susceptibility and environmental factors.

Keywords: Age of asthma onset; GSDMB; asthma subphenotypes; atopic asthma with fungal sensitization; non-atopic asthma; severe asthma.

J Asthma
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. 2023 Apr 21;1-11.
doi: 10.1080/02770903.2023.2185154. Online ahead of print.

Impact of multimorbidity patterns in hospital admissions: the case study of asthma

Diana Portela[1,2,3], Pedro Pereira Rodrigues[1,3], Alberto Freitas[1,3], Elísio Costa[3,4], Jean Bousquet[5,6,7], João Almeida Fonseca[1,3], Bernardo Sousa Pinto[1,3]
Affiliations expand

- PMID: 36848045

- DOI: 10.1080/02770903.2023.2185154

Abstract

Background: Most previous studies assessing multimorbidity in asthma assessed the frequency of individual comorbid diseases. **Objective:** We aimed to assess the frequency and clinical and economic impact of co-occurring groups of comorbidities (comorbidity patterns using the Charlson Comorbidity Index) on asthma hospitalizations. **Methods:** We assessed the dataset containing a registration of all Portuguese hospitalizations between 2011-2015. We applied three different approaches (regression models, association rule mining, and decision trees) to assess both the frequency and impact of comorbidities patterns in the length-of-stay, in-hospital mortality and hospital charges. For each

approach, separate analyses were performed for episodes with asthma as main and as secondary diagnosis. Separate analyses were performed by participants' age group. **Results:** We assessed 198340 hospitalizations in patients >18 years old. Both in hospitalizations with asthma as main or secondary diagnosis, combinations of diseases involving cancer, metastasis, cerebrovascular disease, hemiplegia/paraplegia, and liver disease displayed a relevant clinical and economic burden. In hospitalizations having asthma as a secondary diagnosis, we identified several comorbidity patterns involving asthma and associated with increased length-of-stay (average impact of 1.3 [95%CI=0.6-2.0]-3.2 [95%CI=1.8-4.6] additional days), in-hospital mortality (OR range=1.4 [95%CI=1.0-2.0]-7.9 [95%CI=2.6-23.5]) and hospital charges (average additional charges of 351.0 [95%CI=219.1-482.8] to 1470.8 [95%CI=1004.6-1937.0]) Euro compared with hospitalizations without any registered Charlson comorbidity). Consistent results were observed with association rules mining and decision tree approaches. **Conclusions:** Our findings highlight the importance not only of a complete assessment of patients with asthma, but also of considering the presence of asthma in patients admitted by other diseases, as it may have a relevant impact on clinical and health services outcomes.

Keywords: Economic impact; asthma multimorbidity patterns; intelligent data analysis.

J Investig Allergol Clin Immunol

. 2023 Apr 18;33(2):126-128.

doi: 10.18176/jiaci.0872. Epub 2022 Nov 24.

Early Effectiveness of Dupilumab in Patients With Type 2 Severe Asthma: A Prospective Real-Life Study

M Castilla-Martínez[1], R Andújar-Espinosa[2][3], I Flores-Martín[4], M H Reyes Cotes[5], S Cabrejos-Perotti[6], J C Miralles-López[7], A Carbonell-Martínez[8], F J Bravo-Gutierrez[9], J Valverde-Molina[10], V Pérez-Fernández[11]; RE-ASGRAMUR GROUP

Affiliations expand

- PMID: 36420744

- DOI: 10.18176/jiaci.0872

No abstract available

Keywords: Dupilumab; Real-life; Severe asthma; T2 inflammation.

Int J Epidemiol

. 2023 Apr 19;52(2):611-623.
doi: 10.1093/ije/dyac173.

Asthma inflammatory phenotypes on four continents: most asthma is non-eosinophilic

Lucy Pembrey[1], Collin Brooks[2], Harriet Mpairwe[3], Camila A Figueiredo[4], Aida Y Oviedo[5], Martha Chico[5], Hajar Ali[2], Irene Nambuya[3], Pius Tumwesige[3], Steven Robertson[1], Charlotte E Rutter[1], Karin van Veldhoven[6], Susan Ring[7,8], Mauricio L Barreto[4,9], Philip J Cooper[5,10,11], John Henderson[7], Alvaro A Cruz[12,13], Jeroen Douwes[2], Neil Pearce[1,2]; WASP Study Group

Collaborators, Affiliations expand

- PMID: 36040171

- PMCID: PMC10114118

- DOI: 10.1093/ije/dyac173

Free PMC article

Abstract

Background: Most studies assessing pathophysiological heterogeneity in asthma have been conducted in high-income countries (HICs), with little known about the prevalence and characteristics of different asthma inflammatory phenotypes in low-and middle-income countries (LMICs). This study assessed sputum inflammatory phenotypes in five centres, in Brazil, Ecuador, Uganda, New Zealand (NZ) and the United Kingdom (UK).

Methods: We conducted a cross-sectional study of 998 asthmatics and 356 non-asthmatics in 2016-20. All centres studied children and adolescents (age range 8-20 years), except the UK centre which involved 26-27 year-olds. Information was collected using questionnaires, clinical characterization, blood and induced sputum.

Results: Of 623 asthmatics with sputum results, 39% (243) were classified as eosinophilic or mixed granulocytic, i.e. eosinophilic asthma (EA). Adjusted for age and sex, with NZ as baseline, the UK showed similar odds of EA (odds ratio 1.04, 95% confidence interval 0.37-2.94) with lower odds in the LMICs: Brazil (0.73, 0.42-1.27), Ecuador (0.40, 0.24-0.66) and Uganda (0.62, 0.37-1.04). Despite the low prevalence of neutrophilic asthma in most centres, sputum neutrophilia was increased in asthmatics and non-asthmatics in Uganda.

Conclusions: This is the first time that sputum induction has been used to compare asthma inflammatory phenotypes in HICs and LMICs. Most cases were non-eosinophilic, including in settings where corticosteroid use was low. A lower prevalence of EA was observed in the LMICs than in the HICs. This has major implications for asthma prevention and management, and suggests that novel prevention strategies and therapies specifically targeting non-eosinophilic asthma are required globally.

Keywords: Asthma; HIC; LMIC; adolescents; children; inflammatory phenotypes; sputum induction.

Conflict of interest statement

None declared.

- 39 references
- 1 figure

SUPPLEMENTARY INFO

MeSH terms, Grant supportexpand

FULL TEXT LINKS

J Investig Allergol Clin Immunol
. 2023 Apr 18;33(2):119-125.
doi: 10.18176/jiaci.0771. Epub 2021 Dec 13.

Asthma Mortality in Spain From 1980 to 2019: Trends and Perspectives in the New Treatment Era

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Affiliations expand

- PMID: 34896979
- DOI: 10.18176/jiaci.0771

Abstract

Background and objective: Previous studies suggest that asthma mortality rates in Spain have been decreasing in recent years. However, this trend is not homogeneous across age groups. Objective: To analyze asthma mortality rates over a 40-year period, focusing on changes associated with the development of new therapeutic approaches.

Methods: Death records and mid-year population data were collected from the National Statistics Institute. Using the direct method, agestandardized mortality rates were calculated for the overall population and for each sex and age group. Significant changes in mortality trends were identified using joinpoint regression analysis. The independent effects of age, period, and cohort and potential years of life lost due to asthma were also analyzed.

Results: Age-standardized asthma mortality rates decreased in Spain from 7.38 to 2.03 deaths per 100 000 from the first to the last quinquennium of the study (1980-1984 to 2015-2019) for the whole population. This decrease was more intense among men, where a decrease from 10.37/100 000 to 0.91/100 000 was observed compared with 5.53 to 2.77/100 000 in women. Mortality decreased in all age groups. During the last 3 years, the decrease stabilized in patients aged >64 years but increased in those aged 35-64. Mortality has been decreasing rapidly since the 1990s in patients aged <35 years.

Conclusion: Asthma mortality rates began to decline in 1980. The decrease was observed among younger cohorts starting in the 1990s, thus confirming earlier trends. Improved diagnosis and development of new therapies for asthma may have played a role in the changes observed. Close monitoring of asthma mortality rates is necessary to confirm these trends.

Keywords: Age-period-cohort; Asthma; Ecological studies; Epidemiology; Mortality. Immunotherapy; Potential years of life lost; Therapy.

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

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Rhinology

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. 2023 Apr 21.
doi: 10.4193/Rhin21.380. Online ahead of print.

Intranasal antihistamines in the treatment of idiopathic non-allergic rhinitis: a systematic review and meta-analysis

N Khoueir[1], M G Khalaf[1], R Assily[1], S Rassi[1], W A Hamad[1]
Affiliations expand

- PMID: 37083127

- DOI: 10.4193/Rhin21.380

Abstract

Background: Idiopathic rhinitis (IR), previously known as vasomotor rhinitis (VMR), is the most common type of non-allergic rhinitis (NAR) which affects around 100 million people worldwide. The treatment of patients with IR is not standardized. Intranasal antihistamines (INAH) are potent drugs in the treatment of allergic rhinitis but are frequently prescribed in the treatment of IR. This systematic review of the literature and meta-analysis aims to assess the effects of INAH on IR.

Methodology: A comprehensive review of the literature was conducted on Medline, Embase and Cochrane library. Randomized, controlled trials and non-randomized comparative parallel group trials comparing INAH to placebo or different INAHs were included. The primary outcome was the change in disease specific quality of life questionnaires, total nasal symptom score (TNSS). The secondary outcomes were other reported nasal symptom scores, individual symptom scores and adverse events.

Results: Six trials out of 987 assessing a total of 675 participants were deemed relevant for inclusion. Compared to placebo, INAH decreased total nasal symptom scores. One study also reported reduction of symptoms recorded on a visual analogue scale. There was no difference between the INAHs in terms of efficacy. Bitter taste sensation was the most frequently reported adverse event.

Conclusions: INAHs seem to have benefit over placebo on nasal symptoms improvement in the treatment of NAR. No superiority between INAHs was identified.

Environ Res

. 2023 Apr 18;115903.
doi: 10.1016/j.envres.2023.115903. Online ahead of print.

Effects of pollen concentration on allergic rhinitis in children: A retrospective study from Beijing, a Chinese megacity

Yuxin Zhao[1], Zhaobin Sun[2], Li Xiang[3], Xingqin An[4], Xiaoling Hou[5], Jing Shang[6], Ling Han[7], Caihua Ye[8]
Affiliations expand

- PMID: 37080269

- DOI: 10.1016/j.envres.2023.115903

Abstract

With global climate change and rapid urbanization, the prevalence of allergic diseases caused by pollen is rising dramatically worldwide with unprecedented complexity and severity, especially for children in mega-cities. However, because of the lack of long time-series pollen concentrations data, the accurate evaluation of the impact of pollen on allergic rhinitis (AR) was scarce in the Chinese metropolis. A generalized additive model was used to assess the effect of pollen concentration on pediatric AR outpatient visits in Beijing from 2014 to 2019. A stratified analysis of 10 pollen species and age-gender-specific groups was also conducted during the spring and summer-autumn peak pollen periods separately. Positive associations between pollen concentration and pediatric AR

varied with the season and pollen species were detected. Although the average daily pollen concentration is higher during the spring tree pollen peak, the influence was stronger at the summer-autumn weed pollen peak with the maximum relative risk 1.010 (95% CI 1.009, 1.011), which was higher than the greatest relative risk, 1.003 (95% CI 1.002, 1.004) in the spring peak. The significant adverse effects can be sustained to lag10 during the study period, and longer in the summer-autumn peak (lag13) than in the spring peak (lag8). There are thresholds for the health effects and they varied between seasons. The significant effect appeared when the pollen concentration was higher than 3.47 × 10^5 grain·m^{-2}·d^{-1} during the spring tree pollen peaks and 4.70 × 10^4 grain·m^{-2}·d^{-1} during the summer-autumn weed pollen peaks. The stratified results suggested that the species-specific effects were heterogeneous. It further highlights that enough attention should be paid to the problem of pollen allergy in children, especially school-aged children aged 7-18 years and weed pollen in the summer-autumn peak pollen period. These findings provide a more accurate reference for the rational coordination of medical resources and improvement of public health.

Keywords: Allergic rhinitis; Children's health; Generalized additive model; Pollen concentration.

Conflict of interest statement

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

PLoS One

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doi: 10.1371/journal.pone.0284625. eCollection 2023.

Prenatal and early-life exposure to traffic-related air pollution and allergic rhinitis in children: A systematic literature review

Lifang Liu[1], Jingxuan Ma[1], Shanshan Peng[1], Linshen Xie[1]
Affiliations expand

- PMID: 37079576
- PMCID: PMC10118164
- DOI: 10.1371/journal.pone.0284625

Abstract

Background: Traffic-related air pollution (TRAP) is hypothesised to play a role in the development of allergic rhinitis (AR). Prenatal and early-life exposure to traffic-related air pollution is considered critical for later respiratory health. However, we could not find any articles systematically reviewing the risk of prenatal and early-life exposure to traffic-related air pollution for allergic rhinitis in children.

Methods: A systematic literature search of PubMed, Web of Science and Medline was conducted to identify studies focused on the association between prenatal and early-life exposure to TRAP and AR in children. Other inclusion criteria were: 1) original articles; 2) based upon prospective or retrospective studies or case-control studies; and 3) publications were restricted to English. Literature quality assessment was processed using the Newcastle-Ottawa Scale (NOS) evaluation scale. This systematic literature review has been registered on the prospero (crd.york.ac.uk/prospero) with the following registry number: CRD42022361179.

Results: Only eight studies met the inclusion criteria. The exposure assessment indicators included PM2.5, PM2.5 absorbance, PM10, NOx, CO, and black carbon. On the whole, exposure to TRAP during pregnancy and the first year of life were positively associated with the development of AR in children.

Conclusions: This systematic review presents supportive evidence about prenatal and early-life exposure to TRAP and the risk of AR in children.

Conflict of interest statement

The authors have declared that no competing interests exist.

- 35 references
- 1 figure

SUPPLEMENTARY INFO

Grant supportexpand

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Review

Laryngoscope

. 2023 Apr 17.
doi: 10.1002/lary.30706. Online ahead of print.

Ipratropium Bromide Nasal Spray in Non-Allergic Rhinitis: A Systematic Review and Meta-Analysis

Patrick El Khoury[1], Walid Abou Hamad[1], Michel G Khalaf[1], Christopher El Hadi[1], Ralph Assily[1], Simon Rassi[1], Nadim Khoueir[1]

Affiliations expand

- PMID: 37067019

- DOI: 10.1002/lary.30706

Abstract

Objective: This study aims to compare the effectiveness of intranasal ipratropium bromide (INIB) to a placebo in reducing nasal symptoms, particularly rhinorrhea, and enhancing quality of life in non-allergic rhinitis (NAR) patients.

Study design: Systematic review and meta-analysis.

Methods: A comprehensive review of the literature was conducted on Medline, Embase, and Cochrane libraries. Randomized controlled trials (RCTs) and non-randomized comparative parallel group trials comparing IB nasal spray to placebo were included.

Results: Five RCTs assessed a total of 472 participants with a diagnosis of NAR. IB nasal spray 0.03% were used across all studies. IB has a better impact on decreasing rhinorrhea than the placebo, with a standardized mean difference (SMD) of 0.93 (95% CI 0.06-1.8). The mean change in rhinorrhea severity was 85% (95% CI 77-92%) and I^2 26% (p = 0.24). IB outperformed the placebo in terms of shortening the symptom's duration/day, as shown by an SMD of 0.35 (95% CI 0.15-0.55). The difference between treatments was noticeable within the first week and remained consistent throughout the treatment. Patients who were administered IB experienced a substantially greater improvement in physical and mental outcomes. Nasal adverse events with IB were generally intermittent and brief.

Conclusion: Compared with a placebo, IB nasal spray is both safe and effective in treating the rhinorrhea associated with NAR. IB significantly reduces the severity and duration of rhinorrhea. The treatment was determined to be beneficial by both patients and physicians and resulted in a better quality of life.

Level of evidence: 1 Laryngoscope, 2023.

Keywords: ipratropium bromide; nasal spray; nonallergic rhinitis; treatment.

- 28 references

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Asian Pac J Allergy Immunol
.
2023 Apr 17.
doi: 10.12932/AP-031122-1495. Online ahead of print.

Mucosal brushings for nasal specific IgE to predict house dust mite driven allergic rhinitis

Aneeza W Hamizan[1], Raquel Alvarado[2], Khaizurin Tajul Arifin[3], Farah Dayana Zahedi[1], Ng Chong Sian[1], Anna Fariza Jumaat[1], Salina Husain[1], Man Sau Wong[2,4]
Affiliations expand

- PMID: 37061936

- DOI: 10.12932/AP-031122-1495

Abstract

Background: Skin prick testing and serological identification of allergen specific immunoglobulin E (spIgE) are standard tests for allergic rhinitis but can only identify systemic responses. In contrast, nasal allergen challenge (NAC), directly assess localized nasal mucosal reactivity, but is time consuming. Identification of spIgE from nasal brushings (nasal spIgE) is an alternative technique.

Objective: This study aimed to determine the diagnostic performance of nasal spIgE compared to NAC in order predict house dust mite (HDM) driven AR.

Methods: A diagnostic cross-sectional study involving adult rhinitis patients was performed. Sensitization to HDM allergens (Dermatophagoides pteronyssinus (DP), Dermatophagoides farina (DF) were assessed serologically and/or skin prick test, nasal brushing and NAC. Patients with both positive systemic test and NAC were defined to have

HDM driven AR, while patients with a positive systemic test and negative NAC were defined to have non-clinically relevant HDM sensitization. The performance of nasal spIgE to predict positive NAC was determined using the receiver operating curve. The chosen cut-off was then used to predict HDM driven AR among those with positive systemic test.

Results: 118 patients (29.42 ± 9.32 years, 61.9% female) were included. Nasal spIgE was predictive of positive NAC (AUC 0.93, 95%CI: 0.88-0.98, p < 0.01). Among those with positive systemic test, the cut-off value of >0.14 kUA/L was able to predict HDM AR from incidental HDM sensitization with 92% sensitivity and 86% specificity.

Conclusions: Nasal spIgE is comparable to NAC. A cut-off value of >0.14 kUA/L identifies HDM-driven AR from incidental sensitization among patients with positive systemic tests for allergy.

Asian Pac J Allergy Immunol

. 2023 Apr 17.

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The natural history of childhood-onset nonallergic rhinitis; a long-term follow-up study

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Affiliations expand

- PMID: 37061935

- DOI: 10.12932/AP-140922-1455

Abstract

Background: Non-allergic rhinitis (NAR) is characterized by symptoms of nasal inflammation without allergic sensitization. The long-term outcome of NAR in children is poorly defined.

Objective: To determine the natural history of childhood-onset NAR and the development of allergic rhinitis (AR) in these children.

Methods: NAR patients who were followed for more than 10 years were evaluated at 3-5 years (E2) and 9-12 years (E3) after the first evaluation (E1). Nasal symptoms, disease severity, comorbidities, medication used, and aeroallergen sensitization were assessed.

Results: Eighty-two NAR patients (58.5% male) completed all 3 evaluations. The age at onset was 2.0 (range 2.0-4.0) years. The follow-up period was 13.6 (range 12.3-14.3) years. At E2, 37.8% of patients developed AR. At E3, the patients were classified into four groups based on results of skin prick tests in E2 and E3 (group I: NAR→NAR→NAR, 39.0%, group II: NAR→NAR→AR, 23.2%, group III: NAR→AR→NAR, 12.2% and group IV: NAR→AR→AR, 25.6%). The most common aeroallergen sensitization was house dust mite. The family history of atopy, asthma and allergic rhinitis were higher in group III and IV than other groups ($p < 0.05$). The atopic dermatitis, obstructive sleep apnea and adenotonsillar hypertrophy at E1 and E2 were predominantly found in group IV ($p < 0.05$). At E2, group III and IV patients had higher proportion of exposure to house dust, animal dander and smoking compared to other groups ($p < 0.05$). The overall remission rate was 14.6%.

Conclusions: Children with NAR should be reevaluated periodically to determine aeroallergen sensitization for the appropriate diagnosis and management.

Expert Rev Clin Immunol

. 2023 Apr 19;1-10.

doi: 10.1080/1744666X.2023.2200165. Online ahead of print.

Intranasal corticosteroid and antihistamine combinations in the treatment of allergic rhinitis: the role of the novel formulation olopatadine/mometasone furoate

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Affiliations expand

- PMID: 37038974

- DOI: 10.1080/1744666X.2023.2200165

Abstract

Introduction: Allergic rhinitis (AR) is a common disease with an important impact on the quality of life and very high management costs. In many patients, the poor control of rhinitis symptoms often requires the use of different drugs, and polytherapy tends to reduce therapeutic adherence. According to the latest version of ARIA guidelines, the currently recommended drugs for the treatment of moderate-to-severe AR are second-generation antihistamines, intranasal corticosteroids, and their combination, even in a single nasal spray device. A single medication with a rapid onset of action, acting on breakthrough symptoms too, would be advantageous, also in terms of patient compliance.

Areas covered: GSP301 (olopatadine 600 µg - mometasone furoate 25 µg) is a novel intranasal formulation, combining the second-generation antihistamine olopatadine hydrochloride with mometasone furoate. Here, we review the evidence for GSP301, especially concerning the efficacy and safety profile of this intranasal combination in the treatment of AR.

Expert opinion: The evidence provided in the current review clearly supports the use of GSP301 as a novel intranasal corticosteroid/antihistamine combination with a well-documented efficacy and safety profile in terms of rapid symptom relief and good tolerability.

Keywords: Allergic rhinitis; anti-histamine; corticosteroid; intranasal combinations; mometasone furoate; olopatadine hydrochloride.

J Asthma

. 2023 Apr 21;1-10.
doi: 10.1080/02770903.2023.2196567. Online ahead of print.

Comparison of the clinical outcomes of patients with NSAID-exacerbated respiratory disease receiving aspirin or biologicals

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Affiliations expand

- PMID: 36971076

- DOI: 10.1080/02770903.2023.2196567

Abstract

Objective: NSAID-exacerbated respiratory disease (NERD) is characterized by exacerbation of respiratory symptoms after NSAID intake. While research for specific treatment options continues in patients who cannot tolerate or are unresponsive to aspirin treatment after aspirin desensitization (ATAD), biologicals have emerged as a new therapeutic option in NERD patients. The aim of this study was to compare the quality of life, and the sinonasal and respiratory outcomes of NERD patients treated with ATAD or biologicals.

Methods: Patients who have been followed up at a tertiary care allergy center and who have been receiving at least one of ATAD, mepolizumab or omalizumab for at least six

months were included. Evaluations were made using sinonasal outcome test (SNOT-22), asthma control test (ACT), short form-36 (SF-36), blood eosinophil counts, need for recurrent functional endoscopic sinus surgeries (FESS), and asthma or rhinitis exacerbations requiring oral corticosteroids (OCS).

Results: A total of 59 patients comprised of 35 (59%) females and 24 (41%) males with a mean age of 46.1 (min-max, 20-70) years were included. The baseline blood eosinophil count was higher, and a significant decrease in blood eosinophil counts was observed in the mepolizumab group compared to ATAD group ($p = 0.001$, $p < 0.001$, respectively). At follow-up, the rate of recurrent FESS was lower in the group that received mepolizumab ($p = 0.02$).

Conclusions: In NERD patients, mepolizumab significantly decreased blood eosinophil counts and recurrent FESS. There was no significant difference between the patients receiving ATAD or mepolizumab regarding other clinical parameters.

Keywords: NERD; NSAID intolerance; aspirin desensitization; mepolizumab; nasal polyp; omalizumab; severe asthma.

J Investig Allergol Clin Immunol

. 2023 Apr 18;33(2):147-148.
doi: 10.18176/jiaci.0827. Epub 2022 May 18.

Occupational Rhinitis Due to Coati Allergy and Cross-reactivity With Dog Serum Albumin

E Haroun-Díaz[1], M Vázquez de la Torre[1], M L Somoza[1], N Blanca-López[1], L Martín-Pedraza[1], A Prieto-Moreno[1], J Cuesta-Herrnaz[2], B Bartolomé[3], F J Ruano[1]
Affiliations expand

- PMID: 35588194

- DOI: 10.18176/jiaci.0827

No abstract available

Keywords: Coati allergy; Crossreactivity; Exotic pet allergy; Occupational rhinitis; Serum albumin.

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

FULL TEXT LINKS

UNIMORE

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

1
Practice Guideline

Rev Mal Respir
-
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-
. 2023 Apr 18;S0761-8425(23)00106-7.
doi: 10.1016/j.rmr.2023.03.001. Online ahead of print.

[Guidelines for the management of chronic cough in adults]

[Article in French]

L Guilleminault[1], S Demoulin-Alexikova[2], L de Gabory[3], S Bruley des Varannes[4], D Brouquières[5], M Balaguer[6], A Chapron[7], S Grassin Delyle[8], M Poussel[9], N Guibert[5], G Reychler[10], W Trzepizur[11], V Woisard[6], S Crestani[6]
Affiliations expand

- PMID: 37080877

- DOI: 10.1016/j.rmr.2023.03.001

Abstract

Patients with chronic cough experience major alteration in their quality of life. Given its numerous etiologies and treatments, this disease is a complex entity. To help clinicians involved in patient management of patients, guidelines have been issued by a group of French experts. They address definitions of chronic cough and initial management of patients with this pathology. We present herein the second-line tests that might be considered in patients whose coughing has persisted, notwithstanding initial management. The experts have also put forward a definition of unexplained or refractory chronic cough (URCC), the objective being to more precisely identify those patients whose cough persists despite optimal management. Lastly, these guidelines indicate the pharmacological and non-pharmacological interventions of use in URCC. Amitriptyline, pregabalin, gabapentin or morphine combined with speech and/or physical therapy are mainstays in treatment strategies. Other treatment options, such as P2X3 antagonists, are being developed and have generated high hopes among physicians and patients alike.

Keywords: Chronic cough; Excès de sensibilité; Hypersensitivity; Neuromodulateurs; Neuromodulators; Toux chronique.

SUPPLEMENTARY INFO

Publication typesexpand

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

1
Expert Rev Respir Med
-
-
-
. 2023 Apr 20;1-15.
doi: 10.1080/17476348.2023.2205125. Online ahead of print.

The role of precision medicine in bronchiectasis: emerging data and clinical implications

Grace Oscullo[1], David de la Rosa[2], Marta Garcia Clemente[3], Rosa Giron[4], Rafael Golpe[5], Luis Máiz[6], Miguel Angel Martinez-Garcia[1,7]
Affiliations expand

- PMID: 37077039

- DOI: 10.1080/17476348.2023.2205125

Abstract

Introduction: Bronchiectasis is a very heterogeneous disease. This heterogeneity has several consequences: severity cannot be measured by a single variable, so multidimensional scores have been developed to capture it more broadly. Some groups of patients with similar clinical characteristics or prognoses (clinical phenotypes), and even similar inflammatory profiles (endotypes), have been identified, and these have been shown to require a more specific treatment.

Areas covered: We comment on this 'stratified' model of medicine as an intermediate step toward the application of the usual concepts on which precision medicine is based (such as cellular, molecular or genetic biomarkers, treatable traits and individual clinical fingerprinting), whereby each subject presents certain specific characteristics and receives individualized treatment.

Expert opinion: True precision or personalized medicine is based on concepts that have not yet been fully achieved in bronchiectasis, although some authors are already beginning to adapt them to this disease in terms of pulmonary and extrapulmonary etiologies, clinical fingerprinting (specific to each individual), cellular biomarkers such as neutrophils and eosinophils (in peripheral blood) and molecular biomarkers such as neutrophil elastase. In therapeutic terms, the future is promising, and some molecules with significant antibiotic and anti-inflammatory properties are being developed.

Keywords: Bronchiectasis; endotype; eosinophil; neutrophil; personalized medicine; phenotype; precision medicine; traitable trait.

. 2023 Apr 18;1-11.
doi: 10.1080/02770903.2023.2203743. Online ahead of print.

Does asthma-bronchiectasis overlap syndrome (ABOS) really exist?

Angelica Tiotiu[1,2], Miguel-Angel Martinez-Garcia[3,4], Paula Mendez-Brea[5], Iria Roibas-Veiga[5], Francisco-Javier Gonzalez-Barcala[4,6,7,8]
Affiliations expand

- PMID: 37071539

- DOI: 10.1080/02770903.2023.2203743

Abstract

Objective: To analyse the relationship between asthma and bronchiectasis, as well as the necessary conditions that this connection must meet for this group of patients to be considered a special phenotype.

Data sources: We performed a PubMed search using the MeSH terms "asthma", "bronchiectasis". The literature research was limited to clinical trials, meta-analyses, randomized controlled trials, cohort studies and systematic reviews, involving adult patients, published until November 30th, 2022.

Study selections: Selected papers were initially evaluated by the Authors, to assess their eligibility in contributing to the statements.

Results: The prevalence of bronchiectasis is higher than expected in patients with asthma, particularly in those with more severe disease, and in some patients, between 1.4 and 7 per cent of them, asthma alone could be the cause of bronchiectasisBoth diseases share aetiopathogenic mechanisms, such as neutrophilic and eosinophilic inflammation, altered airway microbiota, mucus hypersecretion, allergen sensitisation, immune dysfunction, altered microRNA, dysfunctional neutrophilic activity and variants of the HLA system. Besides that, they also share comorbidities, such as gastroaesophageal reflux disease and psychiatric illnesses.The clinical presentation of asthma is very similar to patients with bronchiectasis, which could cause mistakes with diagnoses and delays in being prescribed the correct treatment.The coexistence of asthma and bronchiectasis also poses difficulties for the therapeutic focusConclusions: The evidence available seems to support that asthma-bronchiectasis phenotype really exist although longitudinal studies which consistently demonstrate that asthma is the cause of bronchiectasis are still lacking.

Keywords: Asthma; Bronchiectasis; Comorbidities; Eosinophils; Exacerbation; Overlap; Prognosis.

Eur Radiol
. 2023 Apr 18.
doi: 10.1007/s00330-023-09616-x. Online ahead of print.

Ultra-high resolution CT imaging of interstitial lung disease: impact of photon-counting CT in 112 patients

Yann Gaillandre[1], Alain Duhamel[1,2], Thomas Flohr[3], Jean-Baptiste Faivre[1], Suonita Khung[1], Antoine Hutt[1], Paul Felloni[1], Jacques Remy[1], Martine Remy-Jardin[4,5]
Affiliations expand

- PMID: 37071165

- DOI: 10.1007/s00330-023-09616-x

Abstract

Objectives: To compare lung parenchyma analysis on ultra-high resolution (UHR) images of a photon-counting CT (PCCT) scanner with that of high-resolution (HR) images of an energy-integrating detector CT (EID-CT).

Methods: A total of 112 patients with stable interstitial lung disease (ILD) were investigated (a) at T0 with HRCT on a 3rd-generation dual-source CT scanner; (b) at T1 with UHR on a PCCT scanner; (c) with a comparison of 1-mm-thick lung images.

Results: Despite a higher level of objective noise at T1 (74.1 ± 14.1 UH vs 38.1 ± 8.7 UH; p < 0.0001), higher qualitative scores were observed at T1 with (a) visualization of more distal bronchial divisions (median order; Q1-Q3) (T1: 10th division [9-10]; T0: 9th division [8-9]; p < 0.0001); (b) greater scores of sharpness of bronchial walls (p < 0.0001) and right major fissure (p < 0.0001). The scores of visualization of CT features of ILD were significantly superior at T1 (micronodules: p = 0.03; linear opacities, intralobular reticulation, bronchiectasis, bronchiolectasis, and honeycombing: p < 0.0001), leading to the reclassification of 4 patients with non-fibrotic ILD at T0, recognized with fibrotic ILD at T1. At T1, the mean (± SD) radiation dose (CTDI $_{vol}$: 2.7 ± 0.5 mGy; DLP: 88.5 ± 21 mGy.cm) was significantly lower than that delivered at T0 (CTDI $_{vol}$: 3.6 ± 0.9 mGy; DLP: 129.8 ± 31.7 mGy.cm) (p < 0.0001), corresponding to a mean reduction of 27% and 32% for the $CTDI_{vol}$ and DLP, respectively.

Conclusions: The UHR scanning mode of PCCT allowed a more precise depiction of CT features of ILDs and reclassification of ILD patterns with significant radiation dose reduction.

Clinical relevance statement: Evaluation of lung parenchymal structures with ultra-high-resolution makes subtle changes at the level of the secondary pulmonary lobules and lung microcirculation becoming visually accessible, opening new options for synergistic collaborations between highly-detailed morphology and artificial intelligence.

Key points: • Photon-counting CT (PCCT) provides a more precise analysis of lung parenchymal structures and CT features of interstitial lung diseases (ILDs). • The UHR mode ensures a more precise delineation of fine fibrotic abnormalities with the potential of modifying the categorization of ILD patterns. • Better image quality at a lower radiation dose with PCCT opens new horizons for further dose reduction in noncontrast UHR examinations.

Keywords: Computed tomography; Humans; Lung; Lung diseases, interstitial; Thorax.

Comment in

- Photon-counting detector CT: improving interstitial lung disease classification using ultra-high resolution at a fraction of the radiation dose?
  Rajendran K, Koo CW.Eur Radiol. 2023 Apr 18:1-2. doi: 10.1007/s00330-023-09617-w. Online ahead of print.PMID: 37071170 **Free PMC article.** No abstract available.

- Cited by 1 article
- 17 references

FULL TEXT LINKS

Scand J Rheumatol
. 2023 Apr 17;1-8.
doi: 10.1080/03009742.2023.2194105. Online ahead of print.

Clinical and preclinical pulmonary disease in newly diagnosed rheumatoid arthritis: a two-year follow-up study

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Affiliations expand

- PMID: 37066633

- DOI: 10.1080/03009742.2023.2194105

Abstract

Objective: Pulmonary disease is a major cause of excess mortality among patients with rheumatoid arthritis (RA). Interstitial lung disease (ILD) is a feared complication, but the benefit of screening is unknown. The aim of this study was to assess the frequency of pulmonary disease, including ILD, in early RA.

Method: Patients with newly diagnosed RA were recruited prospectively at a single centre and underwent systematic pulmonary function tests (PFTs) and computed tomography (CT) scans at inclusion and after two years.

Results: The study included 150 patients (mean age 57 years, 63% female; 59% current or former smokers). Of these, 136 underwent baseline PFTs and 137 CT. Mean forced expiratory volume in one second was 99% predicted and forced vital capacity 106%. Mean diffusing capacity of the lungs for carbon monoxide (DL_{CO}) was 84% predicted. Frequently

detected CT abnormalities were pulmonary nodules (42%), bronchiectasis (29%), and emphysema (20%). Two patients had clinically significant ILD and six had mild reticulation suggestive of preclinical ILD. No ILD progression was identified at two-year follow-up. Smoking was associated with DL_{CO}<80% (p=0.004), combined hyperinflation and diffusion impairment (residual volume>120% and DL_{CO}<80%) (p=0.004), and visual emphysema on CT (p<0.001).

Conclusion: Emphysema and bronchiectasis were common, but most patients had mild disease with preserved lung function. Preclinical or clinical ILD was seen in a minority in this early phase of RA. These findings suggest symptom-based screening and primary intervention focusing on smoking cessation rather than screening for ILD at the time of RA diagnosis.