LIBRA JOURNAL CLUB
18-24-MARCH-2024

Our legal office confirmed that articles NOT OPEN ACCESS cannot be distributed to the members of the list. Thus, we will transmit only the titles of articles.
ABSTRACTS of almost all these articles are available from PubMed, and full papers can be obtained through your institutions' library.
OPEN ACCESS articles are available by accessing the articles from PubMed using just the PMID for the search (eg PMID: 35514131 without . at the end)

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

1
Qual Life Res

-
-
-

. 2024 Mar 22.

doi: 10.1007/s11136-024-03632-0. Online ahead of print.

Relative importance of selected predictors of health-related quality-of-life (HRQOL) among U.S. adults

Haomiao Jia[1], Erica I Lubetkin[2]

Affiliations expand

- PMID: 38514600

- DOI: 10.1007/s11136-024-03632-0

Abstract

Purpose: Many factors have been associated with health-related quality of life (HRQOL), and researchers often have tried to rank these contributing factors. Variable importance

quantifies the net independent contribution of each individual predictor in a set of predictors to the prediction accuracy of the outcome. This study assessed relative importance (RI) of selected contributing factors to respondents' physically unhealthy days (PUD), mentally unhealthy days (MUD), activity limitation days (ALD), and EuroQol EQ-5D index derived from the Healthy Days measures (dEQ-5D).

Methods: Using data from the 2021 Behavioral Risk Factor Surveillance Systems (BRFSS), we estimated the RI of seven socio-demographics and seventeen chronic conditions and risk behaviors. A variable's importance was measured as the average increase in the coefficient of determination after adding the variable to all possible sub-models.

Results: After controlling for socio-demographics, arthritis and no physical activity were the most important variables for PUD with a RI of 10.5 and 10.4, respectively, followed by depression (RI = 8.5) and COPD (RI = 8.3). Depression was the most important variable for MUD with RI = 23.0 while all other 16 predictors had a RI < 7.0. Similar results were observed for ALD and dEQ-5D: depression was the most important predictor (RI = 16.3 and 15.2, respectively), followed by no physical activity, arthritis, and COPD (RI ranging from 7.1 to 9.2).

Conclusion: This study quantified and ranked selected contributing factors of HRQOL. Results of this analysis also can be used to validate HRQOL measures based on domain knowledge of HRQOL.

Keywords: Chronic conditions; Health risk behaviors; Health-related quality-of-life (HRQOL); Multiple linear models; Variable relative importance.

- 47 references

. 2024 Mar 21:thorax-2023-220952.

doi: 10.1136/thorax-2023-220952. Online ahead of print.

Clinical implications of airway obstruction with normal or low FEV_1 in childhood and adolescence

Hans Jacob Lohne Koefoed[1,2,3], Gang Wang[4,5,6,7], Ulrike Gehring[8], Sandra Ekstrom[4,6,9], Inger Kull[4,10], Roel Vermeulen[8], Jolanda M A Boer[11], Anna Bergstrom[6,9], Gerard H Koppelman[2,3], Erik Melén[4,10], Judith M Vonk[3,12], Jenny Hallberg[4,10]

Affiliations expand

- PMID: 38514183

- DOI: 10.1136/thorax-2023-220952

Abstract

Background: Airway obstruction is defined by spirometry as a low forced expiratory volume in 1 s (FEV_1) to forced vital capacity (FVC) ratio. This impaired ratio may originate from a low FEV_1 (classic) or a normal FEV_1 in combination with a large FVC (dysanaptic). The clinical implications of dysanaptic obstruction during childhood and adolescence in the general population remain unclear.

Aims: To investigate the association between airway obstruction with a low or normal FEV_1 in childhood and adolescence, and asthma, wheezing and bronchial hyperresponsiveness (BHR).

Methods: In the BAMSE (Barn/Child, Allergy, Milieu, Stockholm, Epidemiology; Sweden) and PIAMA (Prevention and Incidence of Asthma and Mite Allergy; the Netherlands) birth cohorts, obstruction (FEV_1:FVC ratio less than the lower limit of normal, LLN) at ages 8, 12 (PIAMA only) or 16 years was classified as classic (FEV_1 <LLN) or dysanaptic (FEV_1 ≥LLN) obstruction. Cross-sectional and longitudinal associations between these two types of obstruction and respiratory health outcomes were estimated by cohort-adjusted logistic regression on pooled data.

Results: The prevalence of classic obstruction at ages 8, 12 and 16 in the two cohorts was 1.5%, 1.1% and 1.5%, respectively. Dysanaptic obstruction was slightly more prevalent: 3.9%, 2.5% and 4.6%, respectively. Obstruction, regardless of FEV_1, was consistently

associated with higher odds of asthma (dysanaptic obstruction: OR 2.29, 95% CI 1.40 to 3.74), wheezing, asthma medication use and BHR compared with the normal lung function group. Approximately one-third of the subjects with dysanaptic obstruction in childhood remained dysanaptic during adolescence.

Clinical implications: Children and adolescents with airway obstruction had, regardless of their FEV_1 level, a higher prevalence of asthma and wheezing. Follow-up and treatment at these ages should be guided by the presence of airway obstruction.

Keywords: Asthma; Asthma Epidemiology; Asthma Guidelines; Clinical Epidemiology; Lung Physiology; Paediatric asthma.

Conflict of interest statement

Competing interests: GHK reports grant support from the Netherlands Lung Foundation, TEVA the Netherlands, GSK, Vertex, Ubbo Emmius Foundation, European Union (H2020) and ZonMW outside the submitted work. GHK reports lecture and/or advisory fees from GSK, AstraZeneca and PureIMS (money to institution). EM reports lecture and/or advisory board fees from ALK, Airsonett, AstraZeneca, Chiesi, Novartis and Sanofi outside the submitted work. GW reports lecture fees from Sanofi outside the submitted work.

. 2024 Dec;21(1):2327345.

doi: 10.1080/15412555.2024.2327345. Epub 2024 Mar 20.

Real-World Effectiveness of Single-Inhaler Triple Therapy for COPD: Impact of Diabetes Comorbidity

Sophia Eilat-Tsanani[1,2,3], Pierre Ernst[3,4], Samy Suissa[3,4]

Affiliations expand

- PMID: 38509685

- DOI: 10.1080/15412555.2024.2327345

Abstract

Type 2 diabetes is a frequent comorbidity in chronic obstructive pulmonary disease (COPD) patients, with the GOLD treatment recommendations asserting that the presence of diabetes be disregarded in the choice of treatment.

In a cohort of COPD patients with frequent exacerbations, initiators of single-inhaler triple therapy or dual bronchodilators were compared on the incidence of COPD exacerbation and pneumonia over one year, adjusted by propensity score weighting and stratified by type 2 diabetes.

The COPD cohort included 1,114 initiators of triple inhalers and 4,233 of dual bronchodilators (28% with type 2 diabetes). The adjusted hazard ratio (HR) of exacerbation with triple therapy was 1.04 (95% CI: 0.86-1.25) among COPD patients with type 2 diabetes and 0.74 (0.65-0.85) in those without. The incidence of severe pneumonia was elevated with triple therapy among patients with type 2 diabetes (HR 1.77; 1.14-2.75).

Triple therapy in COPD is effective among those without, but not those with, type 2 diabetes. Future therapeutic trials in COPD should consider diabetes comorbidity.

Keywords: COPD exacerbation; Cohort studies; multimorbidity; propensity scores; real-world evidence.

Plain language summary

Triple therapy for frequent COPD exacerbators is effective in patients without type 2 diabetes but not in those with type 2 diabetes. The impact of comorbidities should be considered in future COPD therapeutic trials.

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

4

BMC Public Health

. 2024 Mar 20;24(1):864.

doi: 10.1186/s12889-024-18333-z.

Cost-related medication nonadherence in adults with COPD in the United States 2013-2020

Xin Wen[1], Hongbin Qiu[1], Bo Yu[2,3], Jinfeng Bi[4], Xia Gu[2,3], Yiying Zhang[#5], Shanjie Wang[#6,7]

Affiliations expand

- PMID: 38509510

- PMCID: PMC10956194

- DOI: 10.1186/s12889-024-18333-z

Abstract

Background: Cost-related medication nonadherence (CRN) is associated with poor prognosis among patients with chronic obstructive pulmonary disease (COPD), a population that requires long-term treatment for secondary prevention. In this study, we aimed to estimate the prevalence and sociodemographic characteristics of CRN in individuals with COPD in the US.

Methods: In a nationally representative survey of US adults in the National Health Interview Survey (2013-2020), we identified individuals aged ≥18 years with a self-reported history of COPD. Cross-sectional study.

Results: Of the 15,928 surveyed individuals, a weighted 18.56% (2.39 million) reported experiencing CRN, including 12.50% (1.61 million) missing doses, 13.30% (1.72 million) taking lower than prescribed doses, and 15.74% (2.03 million) delaying filling prescriptions to save costs. Factors including age < 65 years, female sex, low family income, lack of health insurance, and multimorbidity were associated with CRN.

Conclusions: In the US, one in six adults with COPD reported CRN. The influencing factors of CRN are multifaceted and necessitating more rigorous research. Targeted interventions based on the identified influencing factors in this study are recommended to enhance medication adherence among COPD patients.

Keywords: Chronic obstructive pulmonary disease; Cost-related medication adherence; Nonadherence behaviors; Self-management; Vulnerable population.

Conflict of interest statement

The authors declare no competing interests.

- 43 references
- 3 figures

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

5

Review

Eur Respir Rev

. 2024 Mar 20;33(171):230151.

doi: 10.1183/16000617.0151-2023. Print 2024 Jan 31.

Inhaled *versus* systemic corticosteroids for acute exacerbations of COPD: a systematic review and meta-analysis

Efthymia Papadopoulou[1,2], Sulaiman Bin Safar[3,2], Ali Khalil[3], Jan Hansel[3,4], Ran Wang[3,5], Alexandru Corlateanu[6], Konstantinos Kostikas[7], Stavros Tryfon[1], Jørgen Vestbo[8,5], Alexander G Mathioudakis[3,5]

Affiliations expand

- PMID: 38508668

- PMCID: PMC10951861

- DOI: 10.1183/16000617.0151-2023

Abstract

This meta-analysis compares the efficacy and safety of inhaled *versus* systemic corticosteroids for COPD exacerbations.Following a pre-registered protocol, we appraised eligible randomised controlled trials (RCTs) according to Cochrane methodology, performed random-effects meta-analyses for all outcomes prioritised in the European Respiratory Society COPD core outcome set and rated the certainty of evidence as per Grading of Recommendations Assessment, Development and Evaluation methodology.We included 20 RCTs totalling 2140 participants with moderate or severe exacerbations. All trials were at high risk of methodological bias. Low-certainty evidence did not reveal

significant differences between inhaled and systemic corticosteroids for treatment failure rate (relative risk 1.75, 95% CI 0.76-4.02, n=569 participants); breathlessness (mean change: standardised mean difference (SMD) -0.11, 95% CI -0.36-0.15, n=239; post-treatment scores: SMD -0.18, 95% CI -0.41-0.05, n=293); serious adverse events (relative risk 1.47, 95% CI 0.56-3.88, n=246); or any other efficacy outcomes. Moderate-certainty evidence implied a tendency for fewer adverse events with inhaled compared to systemic corticosteroids (relative risk 0.80, 95% CI 0.64-1.0, n=480). Hyperglycaemia and oral fungal infections were observed more frequently with systemic and inhaled corticosteroids, respectively.Limited available evidence suggests potential noninferiority of inhaled to systemic corticosteroids in COPD exacerbations. Appropriately designed and powered RCTs are warranted to confirm these findings.

Conflict of interest statement

Conflict of interest: The authors declare no conflict of interest related to this work. E. Papadopoulou, S. Bin Safar, A. Khalil, J. Hansel, R. Wang and A. Corlateanu report no conflicts of interest. K. Kostikas reports grants or contracts from AstraZeneca, Boehringer Ingelheim, Chiesi, Innovis, ELPEN, GSK, Menarini, Novartis and NuovoAir, consulting fees from AstraZeneca, Boehringer Ingelheim, Chiesi, CSL Behring, ELPEN, GSK, Menarini, Novartis, Pfizer and Sanofi Genzyme, honoraria from Alector Pharmaceuticals, AstraZeneca, Boehringer Ingelheim, Chiesi, ELPEN, GILEAD, GSK, Menarini, MSD, Novartis, Sanofi Genzime, Pfizer and WebMD, and a leadership role as a member of the GOLD assembly, not related to this work. S. Tryfon reports honoraria from ELPEN, GSK, AstraZeneca, Chiesi and Menarini and participation on advisory boards for ELPEN, GSK, AstraZeneca and Menarini, not related to this work. J. Vestbo reports consulting fees from ALK, AstraZeneca, Boehringer Ingelheim, Chiesi, GSK and Teva, and honoraria from AstraZeneca, Chiesi and GSK, not related to this work. A.G. Mathioudakis reports honoraria from GSK not related to this work.

Review

Eur Respir Rev

. 2024 Mar 20;33(171):220247.

doi: 10.1183/16000617.0247-2022. Print 2024 Jan 31.

20 years of neuromuscular electrical stimulation in COPD

Antonella LoMauro [1], Fabrizio Gervasoni [2]

Affiliations expand

- PMID: 38508667
- PMCID: PMC10951858
- DOI: 10.1183/16000617.0247-2022

Abstract

Although a lung disease, COPD is also associated with extrapulmonary manifestations including, among others, limb muscle dysfunction. Limb muscle dysfunction is a key systemic consequence of COPD that impacts patients' physical activity, exercise tolerance, quality of life and survival. Deconditioning is the main mechanism underlying the development of limb muscle dysfunction in COPD, which can be partially improved with exercise. However, some patients may not be able to tolerate exercise because of incapacitating breathlessness or unwillingness to undertake whole-body exercise. Alternative training modalities that do not give rise to dyspnoea, such as neuromuscular electrical stimulation (NMES), are urged. Over the past 20 years, NMES in COPD has presented conflicting conclusions in meta-analysis. In this review, we try to understand the

reason for this result by analysing possible biases and factors that brought conflicting conclusions. We discuss the population (the intervention group, but also the control group), the outcome measures, the frequency of stimulation, the rehabilitation protocol (*i.e.* NMES alone *versus* standard care/rehabilitation or NMES plus conventional exercise training *versus* conventional exercise training alone or NMES *versus* sham treatment) and the trial design. The main reason for this discrepancy is the lack of dedicated guidelines for NMES. Further research is urged to determine the optimal parameters for an NMES programme. Despite this, NMES appears to be an effective means of enhancing quadriceps strength and exercise capacity in COPD with the potential to break the vicious circle induced by the disease and COPD patients' lifestyle.

Conflict of interest statement

Conflict of interest: A. LoMauro reports consulting fees from IACER – I-TECH Medical Division, outside the submitted work; payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from IACER – I-TECH Medical Division, outside the submitted work; and is a current editorial board member for the European Respiratory Review. F. Gervasoni reports payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from IACER – I-TECH Medical Division, outside the submitted work.

- 63 references
- 2 figures

. 2024 Mar 18:107602.

doi: 10.1016/j.rmed.2024.107602. Online ahead of print.

Revisiting the use of high flow nasal cannula in acute exacerbation of COPD and conclusion of trial

Toshiro Goto[1], Masahiro Banno[2], Ryota Kimura[3]

Affiliations expand

- PMID: 38508404

- DOI: 10.1016/j.rmed.2024.107602

No abstract available

Keywords: COPD; HFNC; NIV; NPPV.

Conflict of interest statement

Declaration of competing interest We declare that there are no conflicts of interest. We report no financial or personal relationships with other people or organizations that could inappropriately influence our statement.

8

Am J Respir Crit Care Med

.
. 2024 Mar 20.

doi: 10.1164/rccm.202310-1965OC. Online ahead of print.

The Effect of Chronic Altitude Exposure on COPD Outcomes in the SPIROMICS Cohort

Rajat Suri[1], Daniela Markovic[2], Han Woo[3], Mehrdad Arjomandi[4], R Graham Barr[5], Russell P Bowler[6], Gerard Criner[7,8], Jeffrey L Curtis[9,10], Mark T Dransfield[11], M Bradley Drummond[12], Spyridon Fortis[13], MeiLan K Han[14], Eric A Hoffman[15], Robert J Kaner[16], Joel D Kaufman[17], Jerry A Krishnan[18], Fernando J Martinez[19], Jill Ohar[20], Victor E Ortega[21], Robert Paine Iii[22], Xavier Soler[23], Prescott G Woodruff[24], Nadia N Hansel[25], Christopher B Cooper[26], Donald P Tashkin[27], Russell G Buhr[28], Igor Z Barjaktarevic[29]

Affiliations expand

- PMID: 38507607

- DOI: 10.1164/rccm.202310-1965OC

Abstract

Rationale: Individuals with COPD have airflow obstruction and maldistribution of ventilation. For those living at high altitude, any gas exchange abnormality is compounded by reduced partial pressures of inspired oxygen.

Objectives: Does residence at higher-altitude exposure affect COPD outcomes, including lung function, imaging characteristics, symptoms, health status, functional exercise capacity, exacerbations, or mortality?

Methods: From the SPIROMICS cohort, we identified individuals with COPD living below 1,000 ft (305 m) elevation (n= 1,367) versus above 4,000 ft (1,219 m) elevation (n= 288). Multivariable regression models were used to evaluate associations of exposure to high altitude with COPD-related outcomes.

Measurements and main results: Living at higher altitude was associated with reduced functional exercise capacity as defined by 6MWD (-32.3 m, (-55.7 to -28.6)). There were no differences in patient-reported outcomes as defined by symptoms (CAT, mMRC), or health status (SGRQ). Higher altitude was not associated with a different rate of FEV1 decline. Higher altitude was associated with lower odds of severe exacerbations (IRR 0.65, (0.46 to 0.90)). There were no differences in small airway disease, air trapping, or emphysema. In longitudinal analyses, higher altitude was associated with increased mortality (HR 1.25, (1.0 to 1.55)); however, this association was no longer significant when accounting for air pollution.

Conclusions: Chronic altitude exposure is associated with reduced functional exercise capacity in individuals with COPD, but this did not translate into differences in symptoms or health status. Additionally, chronic high-altitude exposure did not affect progression of disease as defined by longitudinal changes in spirometry.

Keywords: Altitude; Chronic obstructive pulmonary disease; Longitudinal outcomes; Patient-centered outcomes.

9

Review

Clin Ther

-
-
-

. 2024 Mar 18:S0149-2918(24)00064-X.

doi: 10.1016/j.clinthera.2024.02.008. Online ahead of print.

Efficacy of Nemiralisib in Chronic Obstructive Pulmonary Disease: A Systematic Review

Hongkuan Yang[1], Shuifeng He[2], Linbao Liang[1], Junjie Pan[3]

Affiliations expand

- PMID: 38503629

- DOI: 10.1016/j.clinthera.2024.02.008

Abstract

Purpose: Chronic obstructive pulmonary disease (COPD) is a major public health concern. Exacerbation of COPD leads to poor health and frequent episodes of increased systemic and airway inflammation. Immunomodulatory drugs have garnered extensive attention because they may reduce the rate of COPD exacerbation. This review aimed to evaluate the efficacy and safety of nemiralisib in COPD patients.

Methods: Medical databases, including the Cochrane Library, EMBASE, and PubMed, were queried from inception to June 2023 to identify randomized controlled trials (RCTs) on the efficacy of nemiralisib in COPD patients. This systematic review was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. The Cochrane Collaboration tool was used to assess the risk of bias of the included RCTs. Two authors independently conducted literature screening and data extraction. Key information from the included studies was extracted, tabulated, and compared using a data extraction table. Moreover, the key characteristics, quality, potential bias, and endpoint outcomes of the included studies were summarized. A meta-analysis was conducted when the study outcomes were sufficiently comparable, and the required data were available for extraction.

Findings: Initially, 48 references were identified, leading to the inclusion of four trials. No significant difference was found between the nemiralisib and placebo groups in St George's Respiratory Questionnaire score, modified Medical Research Council Dyspnea Scale score, COPD Assessment Test score, time to next on-treatment exacerbation, proportion of patients achieving exacerbation recovery, time to exacerbation recovery, and rescue medication use. Contrastingly, the results demonstrated that nemiralisib may lower oral corticosteroid use during acute exacerbation of COPD. Meanwhile, the efficacy of nemiralisib on the exacerbation rate, as well as several parameters associated with lung function, including forced expiratory volume in 1 second, specific airway conductance,

specific imaging airway wall thickness, distal specific imaging airway volume measured at functional residual capacity, specific imaging airway resistance, low attenuation score, and internal airflow lobar distribution in the lower pulmonary region, were conflicting. Attributed to the limited number of included RCTs and insufficient extracted data, it was not feasible to conduct a comprehensive meta-analysis.

Implications: Because of insufficient data, this systematic review could not make any definitive statement regarding the efficacy of nemiralisib in COPD patients. In terms of safety, nemiralisib was generally well tolerated. Further trials are required to explore the efficacy of this drug.

Keywords: Chronic obstructive pulmonary disease; Exacerbation; Lung function; Nemiralisib; Systematic review.

Conflict of interest statement

Declaration of competing interest The authors report no conflicts of interest in this work.

10

Respir Care

-
-
-

. 2024 Mar 19:respcare.11541.

doi: 10.4187/respcare.11541. Online ahead of print.

Review of the Evidence for Pulmonary Rehabilitation in COPD: Clinical Benefits and Cost-Effectiveness

Courtney E Lamberton[1], Christopher L Mosher[2]

Affiliations expand

- PMID: 38503466

- DOI: 10.4187/respcare.11541

Abstract

COPD is a common and lethal chronic condition, recognized as a leading cause of death worldwide. COPD is associated with significant morbidity and disability, particularly among older adults. The disease course is marked by periods of stability and disease exacerbations defined by worsening respiratory status resulting in a high burden of health care utilization and an increased risk of mortality. Treatment is focused on pharmacologic therapies, but these are not completely effective. Pulmonary rehabilitation (PR) represents a key medical intervention for patients with chronic respiratory diseases, including COPD. PR provides individualized and progressive exercise training, education, and self-management strategies through a comprehensive and multidisciplinary program. PR has been associated with improvement in exercise capacity, health-related quality of life, and dyspnea in patients living with COPD. Moreover, PR has been associated with improvements in hospital readmission and 1-y survival. In addition to the clinical benefits, PR is estimated to be a cost-effective medical intervention. Despite these benefits, participation in PR remains low. We will review the evidence for PR in each of these benefit domains among patients with stable COPD and in those recovering from a COPD exacerbation.

Keywords: COPD; COPD exacerbation; hospitalization; mortality; pulmonary rehabilitation.

11

Am J Respir Crit Care Med

-
-
-

. 2024 Mar 19.

doi: 10.1164/rccm.202308-1320OC. Online ahead of print.

RSV–related Community COPD Exacerbations and Novel Diagnostics: A Binational Prospective Cohort Study

Dexter J Wiseman[1,2], Ryan S Thwaites[1], Andrew I Ritchie[1,3], Lydia Finney[1], Mairi Macleod[4], Faisal Kamal[1], Hassan Shahbakhti[1], Lisa H van Smoorenburg[5], Huib A Kerstjens[5], Joanne Wildenbeest[6], Deniz Öner[7], Jeroen Aerssens[7], Guy Berbers[8], Rutger Schepp[8], Ashley Uruchurtu[1], Benedikt Ditz[5], Louis Bont[6], James P Allinson[1], Maarten van den Berge[5], Gavin C Donaldson[1], Peter J Openshaw[1], Jadwiga Wedzicha[9]; RESCEU Investigators

Affiliations expand

- PMID: 38502541

- DOI: 10.1164/rccm.202308-1320OC

Abstract

Rationale: Respiratory syncytial virus (RSV) is a common global respiratory virus increasingly recognized as a major pathogen in frail older adults and as a cause of chronic obstructive pulmonary disease (COPD) exacerbations. There is no single test for RSV in adults with acceptable diagnostic accuracy. Trials of RSV vaccines have recently shown excellent safety and efficacy against RSV in older adults; defining the frequency of RSV-related community infections and COPD exacerbations is important for vaccine deployment decisions.

Objectives: This prospective study aimed to establish the frequency of outpatient-managed RSV-related exacerbations of COPD in two well-characterized patient cohorts using a combination of diagnostic methods.

Methods: Participants were recruited at specialist clinics in London, UK and Groningen, NL from 2017 and observed for three consecutive RSV seasons, during exacerbations and at least twice yearly. RSV infections were detected by reverse transcription-polymerase chain reaction (RT-PCR) and serologic testing.

Measurements and main results: 377 patients with COPD attended 1,999 clinic visits and reported 310 exacerbations. There were 27 RSV-related exacerbations (8·7% of total); of these, seven were detected only on PCR, 16 only on serology and 4 by both methods. Increases in RSV specific N-protein antibody were as sensitive as antibody to pre-F or post-F for serodiagnosis of RSV related exacerbations.

Conclusions: RSV is associated with 8.7% of outpatient managed COPD exacerbations in this study. Antibodies to RSV-N protein may have diagnostic value, potentially important in a vaccinated population. The introduction of vaccines that prevent RSV is expected to benefit patients with COPD.

Keywords: COPD; Chronic Obstructive Lung Disease; RSV; Rhinovirus; respiratory syncytial virus.

12

Am J Respir Crit Care Med

. 2024 Mar 19.

doi: 10.1164/rccm.202309-1699LE. Online ahead of print.

Risk of Cardiovascular Events after Acute Exacerbations of Chronic Obstructive Pulmonary Disease in

Patients Receiving Long-Term Low-Dose Azithromycin

Tommaso Bucci[1], Dennis Wat[2], Dilip Nazareth[2,3], Sarah Sibley[2], Dan Wootton[1,4], Gregory Yh Lip[5], Freddy Frost[2,6]

Affiliations expand

- PMID: 38502239

- DOI: 10.1164/rccm.202309-1699LE

No abstract available

Keywords: Copd; azithromycin; cardiovascular; exacerbations; macrolide.

13

ERJ Open Res

. 2024 Mar 18;10(2):00579-2023.

doi: 10.1183/23120541.00579-2023. eCollection 2024 Mar.

Differential expression of mast cells in the small airways and alveolar septa of

current smokers and patients with small airway disease and COPD

Mathew Suji Eapen[1], Wenying Lu[1,2], Surajit Dey[1], Collin Chia[1,2,3], Ashutosh Hardikar[4], Md Imtaiyaz Hassan[5], Prem Bhattarai[1], Archana Vijay Gaikwad[1], Shatarupa Das[6], Philip M Hansbro[6], Gurpreet Kaur Singhera[7,8], Tillie-Louise Hackett[7,8], Sukhwinder Singh Sohal[1,2]

Affiliations expand

- PMID: 38500797

- PMCID: PMC10945381

- DOI: 10.1183/23120541.00579-2023

Abstract

Background: COPD patients suffer from dysregulated and suppressed immune functionality, determined by their loss of degranulating capacity. Here we provide crucial information on the presence of degranulated mast cells (MCs) in COPD airways and demonstrate their relationship to lung physiology and airway remodelling.

Methods: Small airway lung resections from non-smoking controls (NC), normal lung function smokers (NLFS), small airway disease (SAD), and mild-to-moderate COPD current smokers (COPD-CS) and ex-smokers (COPD-ES) were dual immuno-stained with MC tryptase and degranulation marker lysosome-associated membrane protein (LAMP)-1. Total MCs, degranulating MCs and non-MCs were enumerated in small airway epithelium and subepithelium, and in alveolar septa.

Results: In the small airway wall subepithelial areas, COPD-CS and COPD-ES patients had significantly lower MCs than the NC group ($p<0.05$), although the numbers were considerably higher in the small airway epithelium ($p<0.01$). Degranulating non-MCs were higher in SAD ($p<0.05$) than in COPD in the small airway subepithelium. In contrast, there were significant increases in total MCs (degranulated and non-degranulated) and degranulated non-MCs in the alveolar septum of COPD patients compared with the NC group ($p<001$). The lower numbers of MCs in the subepithelium correlated with lower forced expiratory volume in 1 s (FEV_1)/forced vital capacity (FVC) and forced expiratory flow at 25-75% of FVC ($FEF_{25-75\%}$), higher smoking rates in COPD patients, and increased small airway wall thickness and extracellular matrix. The increase in MCs in the alveolar septum negatively correlated with $FEF_{25-75\%}$.

Conclusions: This study is the first to assess the differential pattern of MC, degranulating MC and non-MC populations in the small airways and alveoli of COPD patients. The spatial positioning of the MCs within the airways showed variable correlations with lung function.

Conflict of interest statement

Conflict of interest: M.S. Eapen is currently a full-time employee in Mucpharm Pty Ltd; the work presented was not carried out as part of his employment with Mucpharm Pty Ltd. Conflict of interest: S.S. Sohal has served on the Small Airway Advisory Board for Chiesi Australia and has received the honorarium, outside the submitted work; reports travel support from Chiesi, GSK and AstraZeneca, outside the submitted work; reports a lecture honorarium from Chiesi, outside the submitted work; and has received a research grant from Lung Therapeutics, outside the submitted work. Conflict of interest: All the other authors do not have any conflict of interest to declare.

- 38 references
- 9 figures

14

Respir Res

-
-
-

. 2024 Mar 18;25(1):133.

doi: 10.1186/s12931-024-02741-1.

Impact of smoking reduction on lung cancer risk in patients with COPD who

smoked fewer than 30 pack-years: a nationwide population-based cohort study

Sun Hye Shin[#1], Taeyun Kim[#1], Hyunsoo Kim[2], Juhee Cho[2,3], Danbee Kang[4], Hye Yun Park[5]

Affiliations expand

- PMID: 38500143
- PMCID: PMC10949658
- DOI: 10.1186/s12931-024-02741-1

Abstract

Background: The effects of smoking reduction on the incidence of lung cancer in patients with chronic obstructive pulmonary disease (COPD) are not well known. This study aimed to investigate the effects of changes in smoking habits after COPD diagnosis on lung cancer development in patients who smoked less than 30 pack-years.

Methods: This nationwide retrospective cohort study included 16,832 patients with COPD who smoked less than 30 pack-years at the time of COPD diagnosis. Based on changes in smoking habits in the health screening examination data, smokers were categorized into three groups: quitters, reducers, and sustainers. The primary outcome was the risk of lung cancer development, which was estimated using the Cox proportional hazards model. We also modelled the amount of smoking reduction as a continuous variable.

Results: During a median follow-up of 4 years, the cumulative incidence of lung cancer was the highest among sustainers, followed by reducers and quitters. Compared with sustainers, reducers (adjusted HR 0.74, 95% CI:0.56-0.98) and quitters (adjusted HR 0.78, 95% CI:0.64-0.96) had a significantly lower risk of lung cancer. Incidence of lung cancer showed a decreasing trend with a decreasing amount of smoking (P for linearity < 0.01).

Conclusions: In patients with COPD who smoked less than 30 pack-years, smoking reduction and cessation lowered the risk of lung cancer.

Keywords: COPD; Lung cancer; Smoking.

Conflict of interest statement

The authors declare no competing interests.

- 50 references
- 3 figures

SUPPLEMENTARY INFO

MeSH terms, Substances, Grants and fundingexpand

FULL TEXT LINKS

15

Thorax

. 2024 Mar 18:thorax-2023-220436.

doi: 10.1136/thorax-2023-220436. Online ahead of print.

Distinct trajectories of lung function from childhood to mid-adulthood

Xian Zhang[1,2], Andrew R Gray[3], Robert J Hancox[4]

Affiliations expand

- PMID: 38499347
- DOI: 10.1136/thorax-2023-220436

Abstract

Rationale: Life course trajectories of lung function development and decline influence the risk for lung disease but are poorly documented.

Objective: To document lung function trajectories from childhood to mid-adult life.

Methods: We modelled forced expiratory volume in 1 s (FEV_1), forced vital capacity (FVC) and FEV_1/FVC at ages 9, 11, 13, 15, 18, 21, 26, 32, 38 and 45 years from a population-based cohort using latent profile analysis to identify distinct subgroups of participants with similar lung function trajectories. Regression analyses were used to assess associations between the trajectories, early life factors and postbronchodilator airflow obstruction at age 45.

Results: Among 865 participants with ≥6 measures of lung function, we identified 10 distinct FEV_1 trajectories. Most were approximately parallel except for a childhood airway hyper-responsiveness-related persistently low trajectory (3% of study population); two accelerated-decline trajectories, one of which (8%) was associated with smoking and higher adult body mass index (BMI) and a catch-up trajectory (8%). Findings for FEV_1/FVC trajectories were similar. Nine trajectories were identified for FVC: most were also approximately parallel except for a higher BMI-related accelerated-decline trajectory. The three FEV_1 trajectories leading to the lowest FEV_1 values comprised 19% of the cohort but contributed 55% of airflow obstruction at age 45.

Conclusions: Lung function trajectories to mid-adult life are largely established before adolescence, with a few exceptions: a childhood airway hyper-responsiveness-related persistently low trajectory, which starts low and gets worse with age, and accelerated adult decline trajectories associated with smoking and obesity. Adverse trajectories are associated with a high risk of airflow obstruction in mid-adult life.

Keywords: Asthma Epidemiology; COPD epidemiology; Lung Physiology.

Conflict of interest statement

Competing interests: None declared.

Cite

Share

16

Am J Respir Crit Care Med

-
-
-

. 2024 Mar 18.

doi: 10.1164/rccm.202311-2144LE. Online ahead of print.

All-Cause Mortality of STAR-categorized Patients with COPD Among the General Population

Xander Bertels[1,2], Sebastian Riemann[3,2], Delphine Vauterin[1], Lies Lahousse[1,4], Guy G Brusselle[3,2,5]

Affiliations expand

- PMID: 38498829

- DOI: 10.1164/rccm.202311-2144LE

No abstract available

. 2024 Mar 18.

doi: 10.1111/resp.14706. Online ahead of print.

Transforming recruitment to clinical trials in COPD

Tanya Patrick[1], John R Hurst[1]

Affiliations expand

- PMID: 38497378

- DOI: 10.1111/resp.14706

No abstract available

Keywords: COPD; clinical research; lung cancer screening.

Health Res Policy Syst

. 2024 Mar 22;22(1):35.

doi: 10.1186/s12961-024-01113-x.

Multimorbidity healthcare expenditure in Belgium: a 4-year analysis (COMORB study)

Phuong Bich Tran[1,2], Georgios F Nikolaidis[3], Emmanuel Abatih[4], Philippe Bos[5], Finaba Berete[6], Vanessa Gorasso[6], Johan Van der Heyden[6], Joseph Kazibwe[7], Ewan Morgan Tomeny[8], Guido Van Hal[9], Philippe Beutels[10], Josefien van Olmen[9]

Affiliations expand

- PMID: 38519938

- DOI: 10.1186/s12961-024-01113-x

Abstract

Background: The complex management of health needs in multimorbid patients, alongside limited cost data, presents challenges in developing cost-effective patient-care pathways. We estimated the costs of managing 171 dyads and 969 triads in Belgium, taking into account the influence of morbidity interactions on costs.

Methods: We followed a retrospective longitudinal study design, using the linked Belgian Health Interview Survey 2018 and the administrative claim database 2017-2020 hosted by the Intermutualistic Agency. We included people aged 15 and older, who had complete profiles (N = 9753). Applying a system costing perspective, the average annual direct cost per person per dyad/triad was presented in 2022 Euro and comprised mainly direct medical costs. We developed mixed models to analyse the impact of single chronic conditions, dyads and triads on healthcare costs, considering two-/three-way interactions within dyads/triads, key cost determinants and clustering at the household level.

Results: People with multimorbidity constituted nearly half of the study population and their total healthcare cost constituted around three quarters of the healthcare cost of the study population. The most common dyad, arthropathies + dorsopathies, with a 14% prevalence rate, accounted for 11% of the total national health expenditure. The most frequent triad, arthropathies + dorsopathies + hypertension, with a 5% prevalence rate, contributed 5%. The average annual direct costs per person with dyad and triad were €3515 (95% CI 3093-3937) and €4592 (95% CI 3920-5264), respectively. Dyads and triads associated with cancer, diabetes, chronic fatigue, and genitourinary problems incurred the highest costs. In most cases, the cost associated with multimorbidity was lower or not substantially different from the combined cost of the same conditions observed in separate patients.

Conclusion: Prevalent morbidity combinations, rather than high-cost ones, made a greater contribution to total national health expenditure. Our study contributes to the sparse evidence on this topic globally and in Europe, with the aim of improving cost-effective care for patients with diverse needs.

Keywords: Belgium; Chronic diseases; Cost analysis; Disease interaction; Healthcare expenditure; Integrated care; Multimorbidity; Noncommunicable diseases.

- 80 references

SUPPLEMENTARY INFO

Grants and fundingexpand

FULL TEXT LINKS

2

COPD

-
-
-

. 2024 Dec;21(1):2327345.

doi: 10.1080/15412555.2024.2327345. Epub 2024 Mar 20.

Real-World Effectiveness of Single-Inhaler Triple Therapy for COPD: Impact of Diabetes Comorbidity

Sophia Eilat-Tsanani[1][2][3], Pierre Ernst[3][4], Samy Suissa[3][4]

Affiliations expand

- PMID: 38509685

- DOI: 10.1080/15412555.2024.2327345

Abstract

Type 2 diabetes is a frequent comorbidity in chronic obstructive pulmonary disease (COPD) patients, with the GOLD treatment recommendations asserting that the presence of diabetes be disregarded in the choice of treatment.

In a cohort of COPD patients with frequent exacerbations, initiators of single-inhaler triple therapy or dual bronchodilators were compared on the incidence of COPD exacerbation and pneumonia over one year, adjusted by propensity score weighting and stratified by type 2 diabetes.

The COPD cohort included 1,114 initiators of triple inhalers and 4,233 of dual bronchodilators (28% with type 2 diabetes). The adjusted hazard ratio (HR) of exacerbation with triple therapy was 1.04 (95% CI: 0.86-1.25) among COPD patients with type 2 diabetes and 0.74 (0.65-0.85) in those without. The incidence of severe pneumonia was elevated with triple therapy among patients with type 2 diabetes (HR 1.77; 1.14-2.75).

Triple therapy in COPD is effective among those without, but not those with, type 2 diabetes. Future therapeutic trials in COPD should consider diabetes comorbidity.

Keywords: COPD exacerbation; Cohort studies; multimorbidity; propensity scores; real-world evidence.

Plain language summary

Triple therapy for frequent COPD exacerbators is effective in patients without type 2 diabetes but not in those with type 2 diabetes. The impact of comorbidities should be considered in future COPD therapeutic trials.

3

BMC Public Health

. 2024 Mar 20;24(1):864.

doi: 10.1186/s12889-024-18333-z.

Cost-related medication nonadherence in adults with COPD in the United States 2013-2020

Xin Wen[1], Hongbin Qiu[1], Bo Yu[2,3], Jinfeng Bi[4], Xia Gu[2,3], Yiying Zhang[#5], Shanjie Wang[#6,7]

Affiliations expand

- PMID: 38509510

- PMCID: PMC10956194

- DOI: 10.1186/s12889-024-18333-z

Abstract

Background: Cost-related medication nonadherence (CRN) is associated with poor prognosis among patients with chronic obstructive pulmonary disease (COPD), a population that requires long-term treatment for secondary prevention. In this study, we aimed to estimate the prevalence and sociodemographic characteristics of CRN in individuals with COPD in the US.

Methods: In a nationally representative survey of US adults in the National Health Interview Survey (2013-2020), we identified individuals aged ≥18 years with a self-reported history of COPD. Cross-sectional study.

Results: Of the 15,928 surveyed individuals, a weighted 18.56% (2.39 million) reported experiencing CRN, including 12.50% (1.61 million) missing doses, 13.30% (1.72 million) taking lower than prescribed doses, and 15.74% (2.03 million) delaying filling prescriptions to save costs. Factors including age < 65 years, female sex, low family income, lack of health insurance, and multimorbidity were associated with CRN.

Conclusions: In the US, one in six adults with COPD reported CRN. The influencing factors of CRN are multifaceted and necessitating more rigorous research. Targeted interventions based on the identified influencing factors in this study are recommended to enhance medication adherence among COPD patients.

Keywords: Chronic obstructive pulmonary disease; Cost-related medication adherence; Nonadherence behaviors; Self-management; Vulnerable population.

Conflict of interest statement

The authors declare no competing interests.

- 43 references
- 3 figures

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

4

BMC Med Res Methodol

. 2024 Mar 20;24(1):71.

doi: 10.1186/s12874-024-02175-9.

Implementation and external validation of the Cambridge Multimorbidity Score in the UK Biobank cohort

Hannah Harrison[1], Samantha Ip[2,3], Cristina Renzi[4,5], Yangfan Li[2], Matthew Barclay[4], Juliet Usher-Smith[2], Georgios Lyratzopoulos[4], Angela Wood[2,3,6,7], Antonis C Antoniou[2]

Affiliations expand

- PMID: 38509467

- PMCID: PMC10953059

- DOI: 10.1186/s12874-024-02175-9

Abstract

Background: Patients with multiple conditions present a growing challenge for healthcare provision. Measures of multimorbidity may support clinical management, healthcare resource allocation and accounting for the health of participants in purpose-designed cohorts. The recently developed Cambridge Multimorbidity scores (CMS) have the potential to achieve these aims using primary care records, however, they have not yet been validated outside of their development cohort.

Methods: The CMS, developed in the Clinical Research Practice Dataset (CPRD), were validated in UK Biobank participants whose data is not available in CPRD (the cohort used for CMS development) with available primary care records (n = 111,898). This required mapping of the 37 pre-existing conditions used in the CMS to the coding frameworks used by UK Biobank data providers. We used calibration plots and measures of discrimination to validate the CMS for two of the three outcomes used in the development study (death and primary care consultation rate) and explored variation by age and sex. We also examined the predictive ability of the CMS for the outcome of cancer diagnosis. The results were compared to an unweighted count score of the 37 pre-existing conditions.

Results: For all three outcomes considered, the CMS were poorly calibrated in UK Biobank. We observed a similar discriminative ability for the outcome of primary care consultation rate to that reported in the development study (C-index: 0.67 (95%CI:0.66-0.68) for both, 5-year follow-up); however, we report lower discrimination for the outcome of death than

the development study (0.69 (0.68-0.70) and 0.89 (0.88-0.90) respectively). Discrimination for cancer diagnosis was adequate (0.64 (0.63-0.65)). The CMS performs favourably to the unweighted count score for death, but not for the outcomes of primary care consultation rate or cancer diagnosis.

Conclusions: In the UK Biobank, CMS discriminates reasonably for the outcomes of death, primary care consultation rate and cancer diagnosis and may be a valuable resource for clinicians, public health professionals and data scientists. However, recalibration will be required to make accurate predictions when cohort composition and risk levels differ substantially from the development cohort. The generated resources (including codelists for the conditions and code for CMS implementation in UK Biobank) are available online.

Keywords: Electronic health records; External validation; Multimorbidity; Primary care records; UK Biobank.

Conflict of interest statement

The authors declare no competing interests.

- 23 references
- 2 figures

. 2024 Mar 19;11(1):e002641.

doi: 10.1136/openhrt-2024-002641.

Multimorbidity in patients with atrial fibrillation

Michelle Lobeek[1], Melissa E Middeldorp[1], Isabelle C Van Gelder[1], Michiel Rienstra[2]

Affiliations expand

- PMID: 38508658

- PMCID: PMC10952871

- DOI: 10.1136/openhrt-2024-002641

Abstract

There is an escalating trend in both the incidence and prevalence of atrial fibrillation (AF). AF is linked to numerous other comorbidities, contributing to the emergence of multimorbidity. The sustained rise in multimorbidity and AF prevalences exerts a significant strain on healthcare systems globally. The understanding of the relation between multimorbidity and AF is essential to determine effective healthcare strategies, improve patient outcomes to adequately address the burden of AF. It not only begins with the accurate identification of comorbidities in the setting of AF. There is also the need to understand the pathophysiology of the different comorbidities and their common interactions, and how multimorbidity influences AF perpetuation. To manage the challenges that rise from the increasing incidence and prevalence of both multimorbidity and AF, such as adverse events and hospitalisations, the treatment of comorbidities in AF has already gained importance and will need to be a primary focus in the forthcoming years. There are numerous challenges to overcome in the treatment of multimorbidity in AF, whereby the identification of comorbidities is essential. Integrated care strategies focused on a comprehensive multimorbidity management with an individual-centred approach need to be determined to improve healthcare strategies and reduce the AF-related risk of frailty, cardiovascular diseases and improve patient outcomes.

Keywords: Atrial Fibrillation; Pharmacology; RISK FACTORS.

Conflict of interest statement

Competing interests: The authors disclosed the following financial support: MR reports unrestricted grants from ZonMW, the Dutch Heart Foundation; DECISION project 848090001, the Netherlands Cardiovascular Research Initiative: an initiative with support of the Dutch Heart Foundation; RACE V (CVON 2014–9), RED-CVD (CVON2017-11) and the Top Sector Life Sciences & Health to the Dutch Heart Foundation (PPP Allowance; CVON-AI (2018B017). ICVG reports grants from the Dutch Heart Foundation (CVON RACE V, grant 2014-09). The UMCG, which employs MR, has received consultancy fees from Bayer and InCarda Therapeutics. All the other authors have nothing to disclose.

- 62 references
- 3 figures

6

J Affect Disord

. 2024 Mar 18:354:434-442.

doi: 10.1016/j.jad.2024.03.090. Online ahead of print.

Inter- and intrapopulation differences in the association between physical

multimorbidity and depressive symptoms

Haiyang Yu[1], Yike Zhang[1], Mengxiao Hu[1], Bowen Xiang[1], Sijia Wang[2], Qing Wang[3]

Affiliations expand

- PMID: 38508455

- DOI: 10.1016/j.jad.2024.03.090

Abstract

Background: The association between physical multimorbidity and depression differs by populations. However, no direct inter- or intrapopulation comparison of the association has been conducted. Thus, this study aims to estimate the association in China and the United States and reveal inter- and intrapopulation differences in the association.

Methods: Middle-aged and older adults from the China Health and Retirement Longitudinal Study and the Health and Retirement Study were included. Physical multimorbidity was defined as the simultaneous presence of two or more chronic physical conditions and depressive symptoms was measured by the Center for Epidemiologic Studies Depression Scale. Generalized estimating equation model and stratification multilevel method were the main statistical models.

Results: The presence of physical multimorbidity was associated with a higher risk of depression in both China (RR = 1.360 [95 % CI: 1.325-1.395]) and the US (RR = 1.613 [95 % CI: 1.529-1.701]). For individuals at a low risk of multimorbidity, multimorbidity was associated with 47.4 % (95 % CI: 1.377-1.579) and 71.1 % (95 % CI: 1.412-2.074) increases in the likelihood of depression in China and the US. The effect size was smaller for individuals at a moderate or high risk. However, the cross-national differences were greater for those with a high risk of multimorbidity.

Limitations: The self-report measures, attribution bias.

Conclusions: Compared to Chinese adults, the presence of physical multimorbidity led to an additional increase in depressive symptoms for American counterparts. The association was stronger for individuals at a low risk of multimorbidity, but cross-national differences were observed mostly among individuals at a high risk.

Keywords: China; Depressive symptoms; Interpopulation; Intrapopulation; Physical multimorbidity; The United States.

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 article.

7

Arch Public Health

-
-
-

. 2024 Mar 18;82(1):37.

doi: 10.1186/s13690-024-01264-x.

Appropriate Prescribing for older adults with Multimorbidity (Pro-M): protocol for a feasibility study

Jia Ying Tang[1], Poh Hoon June Teng[2], Christine Yuanxin Chen[3], Keng Teng Tan[4], Wendy Ang[5], Sabrina Lau[6], Alexis Guat Cheng Ang[3], Kay Khine Kyaw[6], Xin Yong Tay[5], Wan Min Stephanie Lim[4], Wrenzie Del Valle Espeleta[3], Huimin Lin[5], Yew Yoong Ding[2 6], Penny Lun[2]

Affiliations expand

- PMID: 38500190

- PMCID: PMC10949664

- DOI: 10.1186/s13690-024-01264-x

Abstract

Background: Potentially inappropriate prescribing is common among older adults with multimorbidity due to various reasons, from concurrent application of multiple single-disease clinical guidelines to fragmentation of care. Interventions such as medication review have been implemented worldwide to reduce inappropriate prescribing for older adults. However, the implementability of such interventions are underexplored in the outpatient clinics in Singapore's public hospitals. Hence, the Pro-M study aims to assess the feasibility of implementing a physician-pharmacist collaborative care intervention in geriatric medicine outpatient clinics to facilitate appropriate prescribing for older adults in Singapore.

Methods: This is a single-arm, non-randomised feasibility study using a pre-post evaluation design. This study consists of two parts: (1) implementation phase of the intervention (6 months) and an (2) evaluation phase (3 months). Eligible patients will be recruited from geriatric medicine outpatient clinics at two public hospitals in Singapore through convenience sampling. The main components of the Pro-M intervention are: (1) pharmacist-facilitated medication reviews with feedback on any medication issues and potential recommendations to physicians, and (2) physicians communicating changes to other relevant prescribers. The evaluation phase will involve surveying and interviewing physicians and pharmacists involved in the implementation of the intervention. A mixed-method approach will be employed for data collection and analysis. The quantitative and qualitative findings will be triangulated and reported using Proctor's implementation outcomes: appropriateness, penetration, acceptability, fidelity, feasibility, and sustainability. A basic cost analysis will be conducted alongside the study.

Discussion: This is a phase 2 study to test the feasibility of implementing an intervention that was co-created with stakeholders during phase 1 development of an intervention to optimise prescribing for older adults with multimorbidity. The implementation will be assessed using Proctor's implementation outcomes to provide insights on the process and the feasibility of implementing medication reviews for older adults with multimorbidity as a routine practice in outpatient clinics. Data collected from this study will inform a subsequent scale-up study.

Trial registration: ClinicalTrials.gov Identifier: NCT05756478. Registered on 06 March 2023.

Keywords: Feasibility study; Medication review; Older adults; Potentially inappropriate prescribing; Proctor’s implementation outcomes.

Conflict of interest statement

The authors declare no competing interests.

- 39 references
- 1 figure

SUPPLEMENTARY INFO

Associated data, Grants and fundingexpand

FULL TEXT LINKS

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

1
Biochem Genet

.
. 2024 Mar 24.

doi: 10.1007/s10528-024-10742-4. Online ahead of print.

Potential Impact of SOD2 (rs4880; p.Val16Ala) Variant with the Susceptibility for Childhood Bronchial Asthma

Nahla H Anber[1], Hanaa Elsayed Ahmed Shahin[2,3], Heba K Badawy[4], Enas A Oraby[1], Sameh A Mohammed[5], Esraa Ibrahim A Shaaban[6], Zeinab Rizk Attia[7], Shereen Mohamed[8], Mona Farag Shabana[9], Mohamed Adel El-Eshmawy[10], Riham Elsayed[11], Afaf M Elsaid[12], Adel I Alalawy[13], Rami M Elshazli[14]

Affiliations expand

- PMID: 38522064

- DOI: 10.1007/s10528-024-10742-4

Abstract

Oxidative stress is a sophisticated situation that orignates from the accumulation of reactive free radicals within cellular compartments. The antioxidant mechanism of the MnSOD enzyme facilitates the removal of these lethal oxygen species from cellular components. The main goal of this pertained work is to study the contribution of the SOD2 (rs4880; p.Val16Ala) variant to the development of bronchial asthma among children. The study's design was carried out based on a total of 254 participants including 127 asthmatic children (91 atopic and 36 non-atopic) along with 127 unrelated healthy controls. Allelic discrimination analysis was executed using the T-ARMS-PCR protocol. This potential variant conferred a significant association with decreased risk of bronchial asthmatic children under allelic (OR = 0.56, P-value = 0.002), recessive (OR = 0.32, P-value = 0.011), and dominant (OR = 0.51, P-value = 0.040) models. Additionally, atopic and non-atopic asthmatic children indicated a protection against bronchial asthma development under allelic, and dominant models (p-value < 0.05). Our findings suggested that the SOD2*rs4880 variant was correlated with decreased risk of childhood bronchial asthma.

Keywords: SOD2*Val16Ala; SOD2*rs4880; Oxidative stress and Bronchial asthma.

- 54 references

FULL TEXT LINKS

UNIMORE

Proceed to details

Cite

Share

2

J Transl Med

-
-
-

. 2024 Mar 23;22(1):301.

doi: 10.1186/s12967-024-05100-2.

An integrated metabo-lipidomics profile of induced sputum for the identification of novel biomarkers in the differential diagnosis of asthma and COPD

Serena Correnti[1], Mariaimmacolata Preianò[2], Fabia Gamboni[3], Daniel Stephenson[3], Corrado Pelaia[4], Girolamo Pelaia[2], Rocco Savino[4], Angelo D'Alessandro[3], Rosa Terracciano[5]

Affiliations expand

- PMID: 38521955

- DOI: 10.1186/s12967-024-05100-2

Abstract

Background: Due to their complexity and to the presence of common clinical features, differentiation between asthma and chronic obstructive pulmonary disease (COPD) can be a challenging task, complicated in such cases also by asthma-COPD overlap syndrome. The distinct immune/inflammatory and structural substrates of COPD and asthma are responsible for significant differences in the responses to standard pharmacologic treatments. Therefore, an accurate diagnosis is of central relevance to assure the appropriate therapeutic intervention in order to achieve safe and effective patient care. Induced sputum (IS) accurately mirrors inflammation in the airways, providing a more direct picture of lung cell metabolism in comparison to those specimen that reflect analytes in the systemic circulation.

Methods: An integrated untargeted metabolomics and lipidomics analysis was performed in IS of asthmatic (n = 15) and COPD (n = 22) patients based on Ultra-High-Pressure Liquid Chromatography-Mass Spectrometry (UHPLC-MS) and UHPLC-tandem MS (UHPLC-MS/MS). Partial Least Squares-Discriminant Analysis (PLS-DA) was applied to resulting dataset. The analysis of main enriched metabolic pathways and the association of the preliminary metabolites/lipids pattern identified to clinical parameters of asthma/COPD differentiation were explored. Multivariate ROC analysis was performed in order to determine the discriminatory power and the reliability of the putative biomarkers for diagnosis between COPD and asthma.

Results: PLS-DA indicated a clear separation between COPD and asthmatic patients. Among the 15 selected candidate biomarkers based on Variable Importance in Projection scores, putrescine showed the highest score. A differential IS bio-signature of 22 metabolites and lipids was found, which showed statistically significant variations between asthma and COPD. Of these 22 compounds, 18 were decreased and 4 increased in COPD compared to asthmatic patients. The IS levels of Phosphatidylethanolamine (PE) (34:1), Phosphatidylglycerol (PG) (18:1;18:2) and spermine were significantly higher in asthmatic subjects compared to COPD.

Conclusions: This is the first pilot study to analyse the IS metabolomics/lipidomics signatures relevant in discriminating asthma vs COPD. The role of polyamines, of 6-Hydroxykynurenic acid and of D-rhamnose as well as of other important players related to the alteration of glycerophospholipid, aminoacid/biotin and energy metabolism provided the construction of a diagnostic model that, if validated on a larger prospective cohort, might be used to rapidly and accurately discriminate asthma from COPD.

Keywords: Asthma; Biomarkers; COPD; Induced sputum; Lipidomics; Mass spectrometry; Metabolomics.

- 116 references

3

J Asthma

-
-
-

. 2024 Mar 23:1-41.

doi: 10.1080/02770903.2024.2332351. Online ahead of print.

Real-world clinical remission of severe asthma with benralizumab in Spanish adults with severe asthma

Eva Martinez-Moragon[1], Eusebi Chiner[2], Alexandra Suliana Mogrovejo[1], Marta Palop Cervera[3], Inmaculada Lluch Tortajada[4], Ignacio Boira Enrique[2], Andrés Fernando Sánchez Vera[1]

Affiliations expand

- PMID: 38520265

- DOI: 10.1080/02770903.2024.2332351

Abstract

Patients with severe eosinophilic asthma experience high risk of exacerbations and reduced quality of life. Benralizumab, a monoclonal antibody binding to IL-5 receptor α subunit, is an approved drug for its treatment. The objective was to describe clinical remission after benralizumab prescription in routine clinical practice. Retrospective multicenter study with data from four hospitals in Valencian Community (Spain) with asthma units between 2019 and 2020. Data was gathered at baseline and after 12 months. We considered clinical remission after one year if the patient remained without exacerbations and use of systemic corticosteroids and with good clinical control and normal lung function. Data from 139 patients was gathered. At 12-month follow-up, 44.1% were at clinical remission, since 84.0%, 77.5%, 51.0% and 95.5% of patients did not experience exacerbations, had total asthma control test score of ≥20, prebronchodilator FEV_1 of ≥80% and did not use systemic corticosteroids. A significant reduction of long-acting muscarinic antagonists ($p = 0.0001$), leukotriene receptor antagonists ($p = 0.0326$), oral corticosteroids ($p < 0.0001$) and short-acting beta agonists ($p = 0.0499$) was observed. Baseline factors with greatest individual influence on clinical remission were employment situation, tobacco use, comorbidity number, eosinophil value, number of exacerbations, FEV_1, emergency visit number, and ACT, MiniAQLQ and TAI scores. Final analysis of multiple logistic regression indicated that having baseline FEV_1 value below 80% increases remission chance 9.7 times a year compared to FEV_1 >80%. Clinical remission after treatment with benralizumab is achievable in a high percentage of patients with severe asthma eosinophilia not controlled in real life.

Keywords: benralizumab; biological treatment; clinical remission; real-world; severe asthma.

4

J Allergy Clin Immunol Pract

. 2024 Mar 20:S2213-2198(24)00288-5.

doi: 10.1016/j.jaip.2024.03.026. Online ahead of print.

Assessing inhaled corticosteroid adherence and responsiveness in severe asthma using beclometasone dipropionate/formoterol NEXThaler™ dose-counting and nitric oxide monitoring

Hnin Ww Aung[1], Claire E Boddy[2], Eleanor Hampson[2], Mark Bell[2], Lauren A Parnell[2], Kumaran Balasundaram[2], Anna C Murphy[2], Shamsa Naveed[1], Peter Bradding[3]

Affiliations expand

- PMID: 38518866

- DOI: 10.1016/j.jaip.2024.03.026

Abstract

Background: 65% of people with severe asthma and a FeNO ≥45 ppb are non-adherent to inhaled corticosteroids (ICS). Digital devices recording both time-of-use and inhaler technique identify non-adherence and ICS responsiveness but are not widely available. As

the NEXThaler™ dose counter only activates at an inspiratory flow of 35 L/min, this may provide an alternative to identifying ICS responsiveness.

Objective: To assess ICS adherence and responsiveness in severe asthma using beclometasone/formoterol (200/6 mcg) NEXThaler™ (BFN) dose-counting.

Methods: Severe asthmatics with a FeNO ≥45 ppb were invited to use BFN in place of their usual ICS/long-acting β2-agonist (LABA). FeNO, ACQ6, lung function and blood eosinophil count were monitored for 3 months. A log10ΔFeNO ≥0.24 was used to define FeNO suppression as the primary marker of ICS responsiveness at day 28.

Results: 27/48 (56%) patients demonstrated significant FeNO suppression at month 1 (median pre-114, post-48 ppb, p<0.001). A small but significant reduction occurred in FeNO non-suppressors. ACQ6 fell a median 1.2 units in FeNO suppressors (p<0.001) and 0.5 units in non-suppressors (p=0.025). These effects were sustained until month 3 in FeNO suppressors with a significant improvement in FEV1 and blood eosinophils. 67% (18/27) of those with baseline ICS/LABA prescription refills of ≥80% were FeNO suppressors suggesting prior non-adherence despite adequate prescription collection. 79% of FeNO suppressors did not require biologics within mean 11.4 months from initial dose counting.

Conclusion: BFN dose counting identifies ICS responsiveness in severe asthma with the implication that these patients may not need to progress to biological therapies.

Keywords: Adherence; FeNO; NEXThaler™; Severe asthma.

5

Nursing

-
-
-

. 2024 Apr 1;54(4):13-15.

doi: 10.1097/01.NURSE.0001007624.74890.2b. Epub 2024 Mar 22.

Biologics for severe asthma

Morgan Faulconer[1], Dan Sheridan

Affiliations expand

- PMID: 38517494

- DOI: 10.1097/01.NURSE.0001007624.74890.2b

No abstract available

- 21 references

6

BMC Pulm Med

-
-
-

. 2024 Mar 21;24(1):149.

doi: 10.1186/s12890-024-02964-4.

Long-term multicenter comparison shows equivalent efficacy of monoclonal antibodies in severe asthma therapy

Moritz Z Kayser[1], Hendrik Suhling[2], Jan Fuge[2 3], Christopher A Hinze[2], Nora Drick[2], Nikolaus Kneidinger[4 5], Jürgen Behr[4 5], Christian Taube[6], Tobias Welte[2 3], Ina Haasler[# 6], Katrin Milger[# 4]

Affiliations expand

- PMID: 38515071

- PMCID: PMC10956233

- DOI: 10.1186/s12890-024-02964-4

Abstract

Background: Monoclonal antibodies (biologics) drastically changed severe asthma therapy. Mepolizumab (anti-interleukin (IL) 5), benralizumab (anti-IL5 receptor alpha), and dupilumab (anti-IL4/13) are the most used biologics in this context. While all biologics are efficient individually, the choice of biologic is complicated by insufficient data on their comparative long-term treatment efficacy. Here, we compare the real-life efficacy of these biologics in asthma therapy over 12 months.

Methods: 280 severe asthma patients treated with mepolizumab (129/280, 46%), benralizumab (83/280, 30%) or dupilumab (68/280, 24%) for one year were analyzed retrospectively. Data were collected at baseline and after 6 and 12 months of therapy. Endpoints were changes pulmonary function (PF), exacerbation rate, oral corticosteroid (OCS) use and dose, asthma control test (ACT) score and fractional exhaled nitric oxide (FeNO) levels as well as responder status measured by the recently published "Biologic Asthma Response Score" (BARS).

Results: All biologics led to significant improvements in PF, ACT and OCS dose. Only Mepolizumab and Benralizumab significantly decreased the exacerbation rate, while only Mepolizumab and Dupilumab significantly decreased FeNO. Responder rates measured by BARS were high across all groups: roughly half of all patients achieved full response and most of the remainder achieved at least partial responder status. Overall, outcomes were similar between groups after both 6 and 12 months.

Conclusions: All biologics showed great efficacy in individual parameters and high responder rates measured by BARS without a clinically relevant advantage for any antibody. Response was usually achieved after 6 months and retained at 12 months, emphasizing the utility of early response assessment.

Keywords: Benralizumab; Biologic Asthma Response Score; Dupilumab; Long-term treatment response; Mepolizumab; Severe asthma.

Conflict of interest statement

MK: Personal fees/speaker honoraria from AstraZeneca and GSK outside the submitted work.
HS: Personal fees/speaker honoraria from AstraZeneca, GSK, Novartis and Sanofi, outside the submitted work.
JF: Personal fees/speaker honoraria from AstraZeneca outside the submitted work.
CH: Nothing to declare.
ND: Nothing to declare.
NK: Personal fees from AstraZeneca outside the submitted work.
JB: Personal fees for consultancy and lectures from Actelion, Bayer, Boehringer Ingelheim and Roche, and personal fees for consultancy from Galapagos, Biogen, BMS and Pliant, outside the submitted work.
CT: Nothing to declare.
TW: T.W. and/or his institution received grants and advisory/lecture/clinical trial fees from AstraZeneca, Basilea, Biotest, Bayer, Boehringer, Berlin Chemie, GSK, Infectopharm, MSD, Novartis, Pfizer, Roche, AstraZeneca, Basilea, Biotest, Bayer, Boehringer, Gilead, GSK, Janssen, Novartis, Pfizer, Roche, all outside the submitted work.
IH: Speaker honoraria from AstraZeneca, GSK, Sanofi, outside the submitted work.
KM: Personal fees/speaker honoraria from AstraZeneca, GSK, Novartis, Sanofi, outside the submitted work.

7

Thorax

-
-
-

. 2024 Mar 21:thorax-2023-220952.

doi: 10.1136/thorax-2023-220952. Online ahead of print.

Clinical implications of airway obstruction with normal or low FEV_1 in childhood and adolescence

Hans Jacob Lohne Koefoed[1,2,3], Gang Wang[4,5,6,7], Ulrike Gehring[8], Sandra Ekstrom[4,6,9], Inger Kull[4,10], Roel Vermeulen[8], Jolanda M A Boer[11], Anna Bergstrom[6,9], Gerard H Koppelman[2,3], Erik Melén[4,10], Judith M Vonk[3,12], Jenny Hallberg[4,10]

Affiliations expand

- PMID: 38514183

- DOI: 10.1136/thorax-2023-220952

Abstract

Background: Airway obstruction is defined by spirometry as a low forced expiratory volume in 1 s (FEV_1) to forced vital capacity (FVC) ratio. This impaired ratio may originate from a low FEV_1 (classic) or a normal FEV_1 in combination with a large FVC (dysanaptic). The clinical implications of dysanaptic obstruction during childhood and adolescence in the general population remain unclear.

Aims: To investigate the association between airway obstruction with a low or normal FEV_1 in childhood and adolescence, and asthma, wheezing and bronchial hyperresponsiveness (BHR).

Methods: In the BAMSE (Barn/Child, Allergy, Milieu, Stockholm, Epidemiology; Sweden) and PIAMA (Prevention and Incidence of Asthma and Mite Allergy; the Netherlands) birth cohorts, obstruction (FEV_1:FVC ratio less than the lower limit of normal, LLN) at ages 8, 12 (PIAMA only) or 16 years was classified as classic (FEV_1 <LLN) or dysanaptic (FEV_1 ≥LLN) obstruction. Cross-sectional and longitudinal associations between these two types of obstruction and respiratory health outcomes were estimated by cohort-adjusted logistic regression on pooled data.

Results: The prevalence of classic obstruction at ages 8, 12 and 16 in the two cohorts was 1.5%, 1.1% and 1.5%, respectively. Dysanaptic obstruction was slightly more prevalent: 3.9%, 2.5% and 4.6%, respectively. Obstruction, regardless of FEV_1, was consistently associated with higher odds of asthma (dysanaptic obstruction: OR 2.29, 95% CI 1.40 to 3.74), wheezing, asthma medication use and BHR compared with the normal lung function

group. Approximately one-third of the subjects with dysanaptic obstruction in childhood remained dysanaptic during adolescence.

Clinical implications: Children and adolescents with airway obstruction had, regardless of their FEV_1 level, a higher prevalence of asthma and wheezing. Follow-up and treatment at these ages should be guided by the presence of airway obstruction.

Keywords: Asthma; Asthma Epidemiology; Asthma Guidelines; Clinical Epidemiology; Lung Physiology; Paediatric asthma.

Conflict of interest statement

Competing interests: GHK reports grant support from the Netherlands Lung Foundation, TEVA the Netherlands, GSK, Vertex, Ubbo Emmius Foundation, European Union (H2020) and ZonMW outside the submitted work. GHK reports lecture and/or advisory fees from GSK, AstraZeneca and PureIMS (money to institution). EM reports lecture and/or advisory board fees from ALK, Airsonett, AstraZeneca, Chiesi, Novartis and Sanofi outside the submitted work. GW reports lecture fees from Sanofi outside the submitted work.

J Allergy Clin Immunol Pract

. 2024 Mar 19:S2213-2198(24)00287-3.

doi: 10.1016/j.jaip.2024.03.025. Online ahead of print.

Summary of the Dutch multidisciplinary practice Guideline on Asthma and Pregnancy

Sarah A Bendien[1], Martijn D de Kruif[2], Hanneke Feitsma[3], Cathelijn van Hoolwerff-Blikkendaal[4], Kirsten Koehorst-Ter Huurne[5], Alie Kuiterman[6], Ekaterina V Baranova[7], Arjan Wittkampf[8], Annette Brons[9], Marjo Poulissen[10], Akke-Nynke van der Meer[11]

Affiliations expand

- PMID: 38513758

- DOI: 10.1016/j.jaip.2024.03.025

Abstract

Asthma is the most common chronic respiratory disease in women of childbearing age and during pregnancy. This paper presents a summary of the Dutch multidisciplinary guideline on asthma and pregnancy. The aim of this guideline is to provide structured, where possible, evidence-based recommendations to optimize the management of asthma during pregnancy. The main topics covered in this guideline are: preconception counseling, the safety of asthma medications during pregnancy and breastfeeding and risk assessment and monitoring of asthma during pregnancy. As there are many caregivers involved and a uniform approach is desirable, this guideline has been developed in collaboration with all relevant healthcare providers and patient representatives.

Keywords: asthma; breastfeeding; guidelines; multidisciplinary; neonatal outcomes; pregnancy; safety asthma medication.

9

Review

Lung

-
-
-

. 2024 Mar 21.

doi: 10.1007/s00408-023-00667-x. Online ahead of print.

Outcomes of Extracorporeal Life Support (ECLS) in Acute Severe Asthma: A Narrative Review

Nneoma Ekechukwu[1], Sachin Batra[2], Deborah Orsi[1], Marjan Rahmanian[1], Maneesha Bangar[1], Amira Mohamed[1]

Affiliations expand

- PMID: 38512466

- DOI: 10.1007/s00408-023-00667-x

Abstract

Background: In this narrative review we aimed to explore outcomes of extracorporeal life support (extracorporeal membrane oxygenation (ECMO) and extracorporeal carbon dioxide removal (ECCO2R)) as rescue therapy in patients with status asthmaticus requiring mechanical ventilation.

Methods: Multiple databases were searched for studies fulfilling inclusion criteria. Articles reporting mortality and complications of ECMO and ECCO2R in mechanically ventilated patients with acute severe asthma (ASA) were included. Pooled estimates of mortality and complications were obtained by fitting Poisson's normal modeling.

Results: Six retrospective studies fulfilled inclusion criteria thus yielding a pooled mortality rate of 17% (13-20%), pooled risk of bleeding of 22% (7-37%), mechanical complications in 26% (21-31%), infection in 8% (0-21%) and pneumothorax rate 4% (2-6%).

Conclusion: Our review identified a variation between institutions in the initiation of ECMO and ECCO2R in patients with status asthmaticus and discrepancy in the severity of illness at the time of cannulation. Despite that, mortality in these studies was relatively low with some studies reporting no mortality which could be attributed to selection bias. While ECMO and ECCO2R use in severe asthma patients is associated with complication risks, further studies exploring the use of ECMO and ECCO2R with mechanical ventilation are required to identify patients with favorable risk benefit ratio.

Keywords: Acute severe asthma; Extracorporeal carbon dioxide removal (ECCO2R); Extracorporeal life support; Extracorporeal membrane oxygenation (ECMO); Status asthmaticus.

- 15 references

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

10

Randomized Controlled Trial

Trials

-
-
-

. 2024 Mar 20;25(1):202.

doi: 10.1186/s13063-024-08041-9.

A cluster-randomized study to evaluate the effectiveness and cost-effectiveness of the Assessment of Burden of Chronic Conditions (ABCC) tool in South Tyrolean primary care for patients with COPD, asthma, type 2 diabetes, and heart failure: the ABCC South Tyrol study

Christian J Wiedermann[1], Pasqualina Marino[2], Angelika Mahlknecht[2], Verena Barbieri[2], Giuliano Piccoliori[2], Adolf Engl[2], Annerika H M Gidding-Slok[3]

Affiliations expand

- PMID: 38509576

- PMCID: PMC10953192

- DOI: 10.1186/s13063-024-08041-9

Abstract

Background: Chronic diseases, such as chronic obstructive pulmonary disease (COPD), asthma, type 2 diabetes, and heart failure, often coexist and contribute to a significant burden on individuals and health systems. The Assessment of Burden of Chronic Conditions (ABCC) tool, already in routine clinical use in the Netherlands, aims to comprehensively assess and visualize disease burden, stimulate self-management, and encourage shared decision-making. This study aims to validate the German and Italian versions of the ABCC tool and evaluate its effectiveness and cost-effectiveness in the South Tyrolean Primary Care setting.

Methods: This is a cluster-randomized study involving approximately 400 patients with COPD, asthma, type 2 diabetes, and heart failure who received care from the South

Tyrolean General Practices. Initially, the ABCC tool will be translated into German and Italian and validated. Subsequently, half of the participants will use the validated ABCC tool for patient-reported outcome measurement assessments, while the other half will receive usual care. The primary outcome measure is the change in the patients' perception of the quality of care after 18 months. The secondary outcomes included changes in quality of life, self-management behavior, and healthcare utilization. The missing data will be managed using multiple imputations. Additionally, a cost-effectiveness analysis that considers the direct medical costs reimbursed by the National Health Service will be conducted.

Discussion: This study provides insights into the application, validation, and efficacy of the ABCC tool in the South Tyrolean healthcare context. The tool's potential to enhance person-centered care, improve the quality of life, and possibly reduce healthcare costs could greatly contribute to sustainable healthcare. The challenges of implementation, such as software integration and the use of an EU data platform, will provide lessons for future international patient care data management.

Trial registration: ISRCTN registry, ISRCTN13531607. Registered on August 23, 2023.

Keywords: Assessment of Burden of Chronic Conditions tool; Chronic diseases; Cost-effectiveness; Health care utilization; Health technology assessment; Patient-reported outcome measures; Primary care; Quality of care; Quality of life; Self-management.

Conflict of interest statement

The authors declare that they have no competing interests that could have influenced the results or interpretations of this study. AHMG-S developed the ABCC tool at the University of Maastricht and has made it freely available for use with no restrictions or charges. Some of the salaries of CJW, AM, and VB are covered by the funds raised. These circumstances did not influence the study design or plans for data collection, analysis, or interpretation of results. All authors had full access to all data and took responsibility for the integrity and accuracy of the study protocol.

- 41 references

11

J Occup Med Toxicol

. 2024 Mar 20;19(1):8.

doi: 10.1186/s12995-024-00406-9.

Quality of life and work functionality in severe asthma patients: the impact of biological therapies

Veruscka Leso[1], Claudio Candia[2], Daniela Pacella[3], Antonio Molino[2], Caterina Nocera[4], Mauro Maniscalco[2,5], Ivo Iavicoli[4]

Affiliations expand

- PMID: 38509562

- PMCID: PMC10953125

- DOI: 10.1186/s12995-024-00406-9

Abstract

Background: Severe asthma can cause poor health status, poor health-related quality of life (HRQoL) and an impaired functioning at work. However, to date, limited data are available on the impact of the biological therapies on such outcomes. Therefore, aim of the present study was to prospectively assess the clinical, quality of life and work functionality issues in severe asthma patients both at baseline and after 6 months of biological therapies and determine which individual, pathological and occupational factors can influence such parameters.

Methods: Fifty-two patients were enrolled between December 2022 and June 2023. Patients' personal, clinical, functional and occupational features were assessed. The Short Form Health Survey (SF-12), the Work Productivity and Activity Impairment (WPAI) questionnaire and the Work Ability Index (WAI) were employed to assess HRQoL, the employee's productivity and perception of work ability, respectively.

Results: Among the enrolled patients, 30 (57.70%) were employed. Biological therapy induced a significant improvement in clinical and functional parameters, e.g., FEV1% (72 ± 12 vs.87 ± 13%; 72 ± 14 vs. 86 ± 14%), FVC% (92 ± 11 vs. 101 ± 11%; 90 ± 13 vs. 98 ± 14%) and FEV_1/FVC (62 ± 11 vs. 71 ± 8%; 64 ± 9 vs. 70 ± 8%) in workers and non-workers, respectively ($P < 0.001$). Comparably, the perception of life quality significantly improved, as physical and mental health scores, in the overall cohort, increased from 40.7 ± 10.3 and 48.5 ± 8.5 to 46.8 ± 8.6 and 51.6 ± 6.4, respectively ($P < 0.001$). The work ability perception significantly improved from a moderate to a good one (34 ± 6 vs. 40 ± 6, $P = 0.001$). A significant reduction in the absenteeism (19 ± 15 vs. 3 ± 11%; $P < 0.001$) and presenteeism rate (53 ± 24 vs. 29 ± 26%; $P < 0.001$), and an improvement in daily (40 ± 27.5% vs. 28.9 ± 24.7%, $P < 0.001$, in the overall population) and work activities (57 ± 25 vs. 29 ± 27%, $P < 0.001$) was determined. Gender, age, symptoms control and pulmonary functionality were correlated with the physical and mental health perception, daily activity impairment and work ability.

Conclusions: Our study pointed out that biological therapies improved clinical, general life and occupational outcomes in patients with severe asthma. The correlation between clinical aspects and psychological and occupational issues suggest the relevance for a multidisciplinary management of the disease for an effective participation of patients in the world of work.

Keywords: Asthma management; Biological therapy; Health promotion; Lung functionality; Occupational health; Quality of life; Severe asthma; Work ability; Work productivity.

Conflict of interest statement

The authors declare no competing interests.

- 50 references
- 4 figures

12

J Allergy Clin Immunol Pract

. 2024 Mar 18:S2213-2198(24)00280-0.

doi: 10.1016/j.jaip.2024.03.018. Online ahead of print.

Gaps in Care Among Uncontrolled Severe Asthma Patients in the United States

Tara Carr[1], Joseph Tkacz[2], Yen Chung[3], Christopher S Ambrose[4], Joseph Spahn[5], Pallavi Rane[6], Yan Wang[7], Andrew W Lindsley[8], Benjamin Lewing[9], Autumn Burnette[10]

Affiliations expand

- PMID: 38508336

- DOI: 10.1016/j.jaip.2024.03.018

Abstract

Background: Understanding the implementation of key guideline recommendations is critical for management of severe asthma (SA) in the treatment of uncontrolled disease.

Objective: To assess specialist visits and medication escalation in US patients with SA following events indicating-uncontrolled-disease (EUD) and associations with health outcomes and social disparity indicators.

Methods: SA patients appearing in administrative claims data spanning 2015-2020 were indexed hierarchically on asthma-related EUD, including hospitalizations, emergency department visits with systemic corticosteroid treatment (SCS), or outpatient visits with SCS. SA patients without EUD served as controls. Eligibility included age 12+, 12-months enrollment pre- and post-index, no biologic use, and no other major respiratory disease

during the pre-period. Escalation of care in the form of specialist visits and medication escalation, healthcare resource utilization (HCRU), costs, and disease exacerbations were assessed during follow-up.

Results: 180,736 SA patients were identified (90,368 uncontrolled, 90,368 controls). Between 35-51% of SA patients with an EUD had no specialist visit or medication escalation. Follow-up exacerbations ranged from 51-64% across EUD cohorts, compared to 13% in controls. Among uncontrolled SA patients who were Black or Hispanic/Latino, 41% and 38%, respectively, had no specialist visit or medication escalation after EUD, compared to 33% of non-Hispanic White patients.

Conclusion: A substantial proportion of uncontrolled SA patients had no evidence of specialist visits or medication escalation following uncontrolled disease, and there was a clear relationship between uncontrolled disease and subsequent HCRU and exacerbations. Findings highlight the need for improved guideline-based care delivery to SA patients, particularly for those facing social disparities.

Keywords: disease exacerbations; healthcare costs; persistent asthma; severe asthma.

13

Trials

. 2024 Mar 20;25(1):197.

doi: 10.1186/s13063-024-08012-0.

Bronchiolitis recovery and the use of High Efficiency Particulate Air (HEPA)

Filters (The BREATHE Study): study protocol for a multi-center, parallel, double-blind, randomized controlled clinical trial

Kelly Cowan[#1], Erin O Semmens[#2], Jeannette Y Lee[3], Ethan S Walker[2], Paul G Smith[2], Linda Fu[4], Rosalyn Singleton[5], Sara McClure Cox[2], Jennifer Faiella[2], Laurie Chassereau[6], Lora Lawrence[7], Jun Ying[8], Jaime Baldner[9], Maryam Garza[9], Robert Annett[10], Sheva K Chervinskiy[11], Jessica Snowden[7]

Affiliations expand

- PMID: 38504367
- PMCID: PMC10953277
- DOI: 10.1186/s13063-024-08012-0

Abstract

Background: Acute viral bronchiolitis is the most common reason for hospitalization of infants in the USA. Infants hospitalized for bronchiolitis are at high risk for recurrent respiratory symptoms and wheeze in the subsequent year, and longer-term adverse respiratory outcomes such as persistent childhood asthma. There are no effective secondary prevention strategies. Multiple factors, including air pollutant exposure, contribute to risk of adverse respiratory outcomes in these infants. Improvement in indoor air quality following hospitalization for bronchiolitis may be a prevention opportunity to reduce symptom burden. Use of stand-alone high efficiency particulate air (HEPA) filtration units is a simple method to reduce particulate matter ≤ 2.5 μm in diameter ($PM_{2.5}$), a common component of household air pollution that is strongly linked to health effects.

Methods: BREATHE is a multi-center, parallel, double-blind, randomized controlled clinical trial. Two hundred twenty-eight children < 12 months of age hospitalized for the first time with bronchiolitis will participate. Children will be randomized 1:1 to receive a 24-week home intervention with filtration units containing HEPA and carbon filters (in the child's sleep space and a common room) or to a control group with units that do not contain HEPA and carbon filters. The primary objective is to determine if use of HEPA filtration units reduces respiratory symptom burden for 24 weeks compared to use of control units. Secondary objectives are to assess the efficacy of the HEPA intervention relative to control

on (1) number of unscheduled healthcare visits for respiratory complaints, (2) child quality of life, and (3) average $PM_{2.5}$ levels in the home.

Discussion: We propose to test the use of HEPA filtration to improve indoor air quality as a strategy to reduce post-bronchiolitis respiratory symptom burden in at-risk infants with severe bronchiolitis. If the intervention proves successful, this trial will support use of HEPA filtration for children with bronchiolitis to reduce respiratory symptom burden following hospitalization.

Trial registration: NCT05615870. Registered on November 14, 2022.

Keywords: Air filtration; Bronchiolitis; HEPA; Indoor air quality; PM2.5; Particulate matter.

Conflict of interest statement

Jessica Snowden, MD, discloses a relevant financial relationship with the ineligible company Pfizer. Dr. Snowden is a consultant for the Pfizer company; however, all potential conflicts of interest have been mitigated. The other authors have no competing interests.

- 99 references

SUPPLEMENTARY INFO

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

FULL TEXT LINKS

Read free full text at BMC UNIMORE

Proceed to details

Cite

Share

14

PLoS One

-
-
-

. 2024 Mar 19;19(3):e0292980.

doi: 10.1371/journal.pone.0292980. eCollection 2024.

Explainable artificial intelligence for cough-related quality of life impairment prediction in asthmatic patients

Sara Narteni[1,2], Ilaria Baiardini[3], Fulvio Braido[3], Maurizio Mongelli[1]

Affiliations expand

- PMID: 38502606

- PMCID: PMC10950232

- DOI: 10.1371/journal.pone.0292980

Abstract

Explainable Artificial Intelligence (XAI) is becoming a disruptive trend in healthcare, allowing for transparency and interpretability of autonomous decision-making. In this study, we present an innovative application of a rule-based classification model to identify the main causes of chronic cough-related quality of life (QoL) impairment in a cohort of asthmatic patients. The proposed approach first involves the design of a suitable symptoms questionnaire and the subsequent analyses via XAI. Specifically, feature ranking, derived from statistically validated decision rules, helped in automatically identifying the main factors influencing an impaired QoL: pharynx/larynx and upper airways when asthma is under control, and asthma itself and digestive trait when asthma is not controlled. Moreover, the obtained if-then rules identified specific thresholds on the symptoms associated to the impaired QoL. These results, by finding priorities among symptoms, may prove helpful in supporting physicians in the choice of the most adequate diagnostic/therapeutic plan.

Conflict of interest statement

The authors have declared that no competing interests exist.

- 24 references
- 5 figures

SUPPLEMENTARY INFO

MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

15

Pediatr Pulmonol

-
-
-

. 2024 Mar 19.

doi: 10.1002/ppul.26978. Online ahead of print.

The current state of pediatric asthma in Australia

Shivanthan Shanthikumar[1 2 3], Nusrat Homaira[4 5 6], Brett Montgomery[7], Harriet Hiscock[3 8 9], Katherine Chen[3 8 10]

Affiliations expand

- PMID: 38501321

- DOI: 10.1002/ppul.26978

No abstract available

- 13 references

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Proceed to details

Cite

Share

16

Review

Pediatr Pulmonol

-
-
-

. 2024 Mar 19.

doi: 10.1002/ppul.26960. Online ahead of print.

Clinical efficacy of montelukast sodium combination therapy for cough variant asthma in children: A meta-analysis

Shihai Yang[1], Xia He[2], Rixia Zhang[3]

Affiliations expand

- PMID: 38501316

- DOI: 10.1002/ppul.26960

Abstract

This meta-analysis aims to assess the clinical effectiveness of combination therapy with montelukast sodium for the treatment of cough variant asthma (CVA) in children, intending to provide clinical evidence and data to guide the selection of clinical therapy. A literature review was conducted using numerous databases, including China National Knowledge Infrastructure (CNKI), Wanfang database, Embase, PubMed, and Web of Science, from inception to December 2023. Trials meeting the criteria for the combined treatment of montelukast sodium for CVA in children were included. Stata 16.0 software was utilized for meta-analysis. The combined treatment group received montelukast sodium in addition to the control group, while the control group received budesonide, fluticasone propionate, salmeterol-fluticasone, or ketotifen alone. This investigation included 18 papers. All subjects were from the Chinese population. Compared to the control group, the combined treatment group demonstrated a higher effective rate (relative ratio [RR] = 1.23, 95% confidence interval [CI]: 1.18-1.29, $p < .001$), but no difference in the incidence of adverse reactions (RR = 0.65, 95% CI: 0.42-1.02, $p = .060$) after treatment. Moreover, the peak expiratory flow (PEF) (SMD = 1.69, 95% CI: 1.09-2.30, $p < .001$), forced vital capacity (FVC) (SMD = 1.67, 95% CI: 0.94-2.39, $p < .001$), forced expiratory volume in 1 s (FEV1) (SMD = 1.74, 95% CI: 1.09-2.40, $p < .001$), and FEV1/FVC (SMD = 1.84, 95% CI: 0.41-3.28, $p = .012$) were significantly higher in the combined treatment group than in the control group after treatment. Compared with the control group, the levels of tumor necrosis factor-α (SMD = -2.38, 95% CI: -3.22 to -1.55, $p < .001$), IL-4 (SMD = -2.65, 95% CI: -3.26 to -2.04, $p < .001$), and IgE (SMD = -2.98, 95% CI: -3.24 to -2.72, $p < .001$) were significantly lower in the combined treatment group after treatment. The combined use of montelukast sodium in the treatment of pediatric CVA in China is associated with a significant clinical effect, making it a reasonable therapeutic approach.

Keywords: children; cough variant asthma; meta-analysis; montelukast sodium.

- 34 references

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

Proceed to details

Cite

17

ERJ Open Res

-
-
-

. 2024 Mar 18;10(2):01025-2023.

doi: 10.1183/23120541.01025-2023. eCollection 2024 Mar.

Use of CompEx in eosinophilic patients with severe, uncontrolled asthma on benralizumab

Clare Bolton[1], Tim Harrison[1,2], Njira Lugogo[3], Anne Fuhlbrigge[4], Ian Hirsch[5], Thomas Bengtsson[6], Stefan Peterson[6], Martin Sidaway[7], Esther Garcia Gil[8], Malin Fagerås[9], Carla A Da Silva[7]

Affiliations expand

- PMID: 38500798

- PMCID: PMC10945385

- DOI: 10.1183/23120541.01025-2023

Abstract

Background: CompEx Asthma, a composite end-point for asthma exacerbations, captures clinically relevant, diary-based acute worsening events (AWEs) (defined as deterioration in daily peak expiratory flow concurrent with deterioration in asthma symptoms and/or rescue therapy use) and severe exacerbations (SevEx) (defined by American Thoracic Society/European Respiratory Society guidelines). We hypothesised that CompEx and SevEx would show similar benralizumab treatment effects and correlations to blood eosinophil counts in patients with severe asthma.

Methods: This *post hoc* analysis of pooled 12-month data from two phase 3 studies included patients aged ≥16 years with severe, uncontrolled asthma who were randomised

to benralizumab 30 mg or placebo. Annualised event rates were analysed using a negative binomial model. The impact of blood eosinophil count on treatment effect was assessed.

Results: Among patients with a blood eosinophil count ≥300 cells·μL^{-1} (n=913), benralizumab reduced the annualised event rate *versus* placebo for CompEx (1.57 *versus* 2.57; risk ratio 0.61, 95% CI 0.53-0.70, p<0.001), SevEx (0.94 *versus* 1.55; risk ratio 0.60, 95% CI 0.52-0.70, p<0.001) and AWE (0.92 *versus* 1.57; risk ratio 0.59, 95% CI 0.48-0.72, p<0.001), with greater treatment effects observed for higher blood eosinophil counts. In patients with blood eosinophil count ≥300 cells·μL^{-1}, benralizumab was associated with shorter median event duration (CompEx: 10.5 days *versus* 17.0 days; SevEx: 10.0 days *versus* 15.0 days; AWE: 5.0 days *versus* 6.0 days).

Conclusions: Benralizumab reduced the risk of CompEx events with treatment effects similar to those for SevEx and AWEs across a range of blood eosinophil counts. Use of CompEx supports the evaluation of benralizumab and other novel drugs in clinical studies.

Conflict of interest statement

Conflict of interest: C. Bolton, T. Harrison, I. Hirsch, M. Sidaway, M. Fagerås and C.A. Da Silva are employees of, and own stock in, AstraZeneca. Conflict of interest: N. Lugogo has received research funding from Sanofi, GSK, Genentech, Teva, Regeneron and AstraZeneca, and consulting fees from AstraZeneca, GSK and Teva; has served on advisory boards for Sanofi, AstraZeneca, Genentech, Teva, Amgen and GSK; and was a Spanish speaker at a national conference on allergy that was sponsored by AstraZeneca. She has received compensation for development of CME content for IKH and Medscape. Conflict of interest: A. Fuhlbrigge has received grant support from the Patient-Centered Outcomes Research Institute. She has also received personal fees from AstraZeneca and Novartis, and is an unpaid consultant to Teva Pharmaceuticals for epidemiological analyses related to asthma. Conflict of interest: T. Bengtsson and S. Peterson are employees of StatMind, which received funding from AstraZeneca to complete the statistical analyses. Conflict of interest: E. Garcia Gil was an employee of AstraZeneca at the time of the study.

18

Eur Arch Otorhinolaryngol

.
. 2024 Mar 18.

doi: 10.1007/s00405-024-08553-9. Online ahead of print.

Efficacy of dupilumab in real-life settings: a STROBE study

A Gal[1], R Gravier-Dumonceau[2], M Penicaud[1], D Ebode[1], T Radulesco[#3], J Michel[#4]

Affiliations expand

- PMID: 38498194

- DOI: 10.1007/s00405-024-08553-9

Abstract

Background: Dupilumab, a monoclonal antibody targeting IL-4 and IL-13, has demonstrated its efficacy in several clinical trials. However, to date, real-life data remains limited.

Objective: The aim of our study was to assess the real-life impact of dupilumab on patients with severe and uncontrolled chronic rhinosinusitis with nasal polyps (CRSwNP) quality of life.

Materials and methods: This was a retrospective, monocentric, observational, real-life study, conducted in accordance with the STROBE guidelines. The following parameters were collected before treatment and at 1, 4, and 12 months: Sino-Nasal Outcome Test-22 (SNOT-22), nasal polyp score (NPS), Sniffin' Sticks-16 (SST-16), visual analog scale (VAS) for loss of smell, nasal congestion score (NCS), gustatory VAS, asthma control, oral corticosteroid usage, surgery rates, and occurrence of side effects.

Results: The study included 47 patients. SNOT-22 scores decreased from 52.4 ± 24.3 to 12.7 ± 10.5 at 12 months ($p < 0.001$). NPS decreased from 6.15 ± 1.71 to 1.57 ± 1.40 at 12

months ($p < 0.001$). SST-16 scores increased from 1.6 ± 2.83 to 9.1 ± 5.4 at 12 months ($p < 0.001$). NCS decreased from 2.45 ± 0.72 to 0.38 ± 0.63 at 12 months ($p < 0.001$). Prior to treatment, 72.3% were using oral corticosteroids, compared to 17.0% at 12 months ($p < 0.01$). Two patients required additional surgery, and 17% reported completely uncontrolled asthma, compared to 0% at 12 months ($p < 0.01$).

Conclusion: Our real-life results confirm the efficacy of Dupilumab in the treatment of severe and uncontrolled CRSwNP.

Keywords: Asthma; Biologics; CRSwNP; Dupilumab; Eosinophils; Monoclonal antibody; Nasal polyposis; Real life; Type 2 inflammation.

- 25 references

FULL TEXT LINKS

SpringerLink FULL-TEXT ARTICLE UNIMORE

Proceed to details

Cite

Share

19

Review

Expert Opin Pharmacother

-
-
-

. 2024 Mar 20:1-11.

doi: 10.1080/14656566.2024.2332627. Online ahead of print.

The pharmacological management of asthma in adults: 2023 update

Maria Gabriella Matera[1], Barbara Rinaldi[1], Rosa Annibale[2], Vito De Novellis[1], Mario Cazzola[3]

Affiliations expand

- PMID: 38497368

- DOI: 10.1080/14656566.2024.2332627

Abstract

Introduction: The pharmacotherapy of asthma is a dynamic process that changes as our knowledge of the underlying pathophysiology and treatment of this disease continues to evolve. This implies the need for continuous revision of the recommendations of asthma guidelines and strategies.

Areas covered: This review summarizes the latest key practical information on the pharmacological management of asthma in adults. We provide the background to the 2023 update of the GINA strategy report, focusing on changes and discussing areas of uncertainty. We review current and emerging pharmacotherapy for uncontrolled asthma, including synthetic agents and new biologics, and provide expert perspectives and opinions on the treatment of uncontrolled asthma.

Expert opinion: The current pharmacological treatment of asthma, based on a step-by-step, control-based approach, with ICSs, LABAs and LAMAs being the mainstay generally provides good symptom control. Biologic therapies are often effective in treating $T2_{high}$ severe asthma. However, there is still room for improvement, such as the discovery of new molecules that specifically target chronic inflammation and, most importantly, the ability to provide solutions to the various areas of uncertainty that still exist. Also finding solutions to improve the accessibility and affordability of rescue ICS in resource-constrained settings is critical.

Keywords: Asthma; Global initiative for asthma; biologics; biomarkers; guidelines; pharmacotherapy; treatable traits.

20

Med Lett Drugs Ther

-
-
-

. 2024 Mar 18;66(1698):41-43.

doi: 10.58347/tml.2024.1698a.

Airsupra: An inhaled albuterol/budesonide combination for asthma

No authors listed

- PMID: 38466211

- DOI: 10.58347/tml.2024.1698a

No abstract available

Keywords: Airsupra; Breyna; ProAir; Proventil; Symbicort; Ventolin; Xopenex; adverse effects; albuterol; asthma; budesonide; dosage; drug interactions; efficacy; formoterol; inhaled corticosteroids; lactation; levalbuterol; pregnancy; safety.

1
J Allergy Clin Immunol Pract

. 2024 Mar 21:S2213-2198(24)00286-1.

doi: 10.1016/j.jaip.2024.03.024. Online ahead of print.

MASK-air®: An OECD (Organisation for Economic Coordination and Development) Best Practice for Public Health on integrated care for chronic diseases

Jean Bousquet[1], Bernardo Sousa-Pinto[2], Josep M Anto[3], Anna Bedbrook[4], Joao A Fonseca[2], Torsten Zuberbier[5]; MASK-air think tank

Collaborators, Affiliations expand

- PMID: 38521122

- DOI: 10.1016/j.jaip.2024.03.024

Abstract

In the recent report of the Organisation for Economic Coordination and Development (OECD) on Best Practices for Integrating Care to Prevent and Manage Chronic Diseases, an app on rhinitis and asthma (MASK-air®) has been listed. The OECD is a reliable source of evidence-based policy analysis and economic data largely used by governments. It has published several BPs on Public Health. On the 10th of May 2023, the OECD published 13 BPs for Integrating Care to Prevent and Manage Chronic Diseases in the European Union. The report did not cover all models of integrated care, rather, it "focuse(d) on those that are of key strategic interest to policy makers." New MASK-air® studies (not published in the report) include equity, usability of the app in old age adults, economic impact, quality-of-life and allergen immunotherapy. MASK-air® is freely available on iOS and Android in 30 countries and has been recently introduced in the USA. The MASK-air® OECD BP

represents a model of digitally-enabled, patient-centred care for chronic diseases using a holistic approach of shared decision making.

Keywords: OECD; asthma; best practice; policy makers; rhinitis.

2

J Allergy Clin Immunol

. 2024 Mar 19:S0091-6749(24)00235-5.

doi: 10.1016/j.jaci.2024.01.030. Online ahead of print.

IgE to cyclophilins in pollen allergic children: epidemiological, clinical and diagnostic relevance of a neglected panallergen

Paolo Maria Matricardi [1], Ekaterina Potapova [2], Valentina Panetta [3], Jonas Lidholm [4], Lars Mattsson [4], Enrico Scala [5], Roberto Bernardini [6], Carlo Caffarelli [7], Antonella Casani [8], Rosa Cervone [6], Loredana Chini [9], Pasquale Comberiati [10], Giovanna De Castro [11], Michele Miraglia Del Giudice [12], Iride Dello Iacono [13], Andrea Di Rienzo Businco [14], Marcella Gallucci [15], Arianna Giannetti [16], Viviana Moschese [9], Elena Varin [17], Annamaria Bianchi [18], Mauro Calvani [18], Tullio Frediani [11], Francesco Macrì [11], Nunzia Maiello [12], Francesco Paravati [19], Umberto Pelosi [20], Diego Peroni [21], Giuseppe Pingitore [22], Mariangela Tosca [23], Anna Maria Zicari [11], Giampaolo Ricci [15], Riccardo Asero [24], Salvatore Tripodi [14]; Italian Pediatric Allergy Network

Affiliations expand

- PMID: 38513837

- DOI: 10.1016/j.jaci.2024.01.030

Abstract

Background: - Cyclophilins are ubiquitous panallergens whose epidemiological, diagnostic, and clinical relevance is largely unknown and whose sensitization is rarely examined in routine allergy practice. The aim of this study was to investigate the epidemiological, diagnostic, and clinical relevance of cyclophilin in seasonal allergic rhinitis and its comorbidities.

Methods: - We examined a random sample (25%, n 253) of 1263 Italian children affected by seasonal allergic rhinitis from the "Panallergen in Pediatrics" (PAN-PED) cohort. Patients' disease phenotype had been already fully characterized through questionnaires (ARIA), skin prick tests (ALK), IgE tests to extracts, major and cross-reactive allergenic molecules of a comprehensive variety of allergenic pollen (immunoCAP), and carbohydrate cross-reacting determinants (CCD) (NOVEOS). We also performed nested studies of sensitization prevalence, correlation and allergen extract inhibition in patients (A) sensitized to birch pollen extract but lacking IgE to Bet v 1, Bet v 2, and Bet v 4, (74/1263) or with the highest serum level of IgE to Bet v 1 (26 within 1263), and (B) in patients with sensitization to extracts of ragweed (18), mugwort (18), pellitory (20), Plantago (19), and plane tree (20), but not to their respective major allergenic molecule, profilins and polcalcins. IgE to cyclophilin was detected with recombinant Bet v 7 (ImmunoCAP) and extract inhibition tests were performed with the same rBet v 7.

Results: In the randomized population, IgE to rBet v 7 was detected in 43/253 (17%) patients. It was associated with asthma ($p<0.028$) and oral allergy syndrome ($p<0.017$) in univariate, but not in a multivariate analysis adjusted for IgE to profilins (Phl p 12), PR.10s (Bet v 1), and LTPs (Pru p 3). IgE to r Bet v 7 was also highly prevalent (47/74; 63%) among patients with unexplained sensitization to birch pollen extract. In patients with unexplained sensitization to ragweed, mugwort, pellitory, Plantago and plane tree pollen, the levels of IgE to those extracts correlated with the levels of IgE to rBet v 7, and they were also significantly inhibited by rBet v 7 (inhibition range 45%-74%).

Conclusions: - IgE sensitization to cyclophilin is very frequent in pollen-allergic patients living in temperate areas and can produce "false" positive outcomes in SPT and IgE tests to many different pollen extracts. The spectrum of pollen species containing allergenic cyclophilins is probably broader than previously known. Our results suggest that guidelines of molecular diagnostics should include this allergen family and that new tests based on plant cyclophilins should be produced and used with sera of pollen-allergic patients for a more precise identification of the culprit pollen extract and a tailored prescription of allergen immunotherapy.

Keywords: allergic rhinitis; allergy; asthma; component resolved diagnostics; cross-reactivity; cyclophilins; diagnosis; immunoglobulin E; oral allergy syndrome; panallergens; pollen; precision medicine.

3

Review

Int Immunopharmacol

-
-
-

. 2024 Mar 19:131:111899.

doi: 10.1016/j.intimp.2024.111899. Online ahead of print.

ILC2s: Unraveling the innate immune orchestrators in allergic inflammation

Hui-Fei Lu [1], Yi-Chi Zhou [2], Dan-Dan Luo [3], Dun-Hui Yang [4], Xi-Jia Wang [3], Bao-Hui Cheng [5], Xian-Hai Zeng [6]

Affiliations expand

- PMID: 38513576

- DOI: 10.1016/j.intimp.2024.111899

Abstract

The prevalence rate of allergic diseases including asthma, atopic rhinitis (AR) and atopic dermatitis (AD) has been significantly increasing in recent decades due to environmental changes and social developments. With the study of innate lymphoid cells, the crucial role played by type 2 innate lymphoid cells (ILC2s) have been progressively unveiled in allergic diseases. ILC2s, which are a subset of innate lymphocytes initiate allergic responses. They respond swiftly during the onset of allergic reactions and produce type 2 cytokines, working in conjunction with T helper type 2 (Th2) cells to induce and sustain type 2 immune responses. The role of ILC2s represents an intriguing frontier in immunology; however, the intricate immune mechanisms of ILC2s in allergic responses remain relatively poorly understood. To gain a comphrehensive understanding of the research progress of ILC2, we summarize recent advances in ILC2s biology in pathologic allergic inflammation to inspire novel approaches for managing allergic diseases.

Keywords: Allergic asthma; Allergic dermatitis; Allergic rhinitis; ILC2s; Type 2 immune response.

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.

4

Dermatologie (Heidelb)

. 2024 Mar 19.

doi: 10.1007/s00105-024-05323-w. Online ahead of print.

[Bronchial asthma and allergic rhinitis-The skin sample reveals a severe systemic disease]

[Article in German]

Priscila Wölbing[1], Susanne Dugas-Breit[1], Wolfgang Hartschuh[1,2], Ferdinand Toberer[3]

Affiliations expand

- PMID: 38502363

- DOI: 10.1007/s00105-024-05323-w

Abstract

in English, German

This article reports the case of a 30-year-old female patient who suffered for many years from initially unspecific symptoms, such as recurrent, nonallergic and noninfectious sinusitis, late-onset bronchial asthma and pronounced lymphadenopathy; however, the correct diagnosis of eosinophilic granulomatosis with polyangiitis (EGPA) could only be made by histological investigations after the appearance of skin symptoms. The EGPA is a severe systemic disease which, if left untreated, can cause multiple organ damage and even be fatal. With adequate treatment the disease is mild in more than 90% of cases and patients can even completely recover. By making the correct diagnosis, the patient could be successfully treated and the risk of late manifestations and subsequent damage with a potentially fatal outcome was reduced.

Keywords: ANCA-associated vasculitis; Churg-Strauss syndrome; Eosinophilia; Eosinophilic granulomatosis with polyangiitis; Late onset Asthma bronchiale; Late-onset asthma bronchiale.

- 10 references

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

UNIMORE

Proceed to details

Cite

Share

5

J Laryngol Otol

-
-
-

. 2024 Apr;138(4):355.

doi: 10.1017/S0022215124000379. Epub 2024 Mar 19.

Biological agents in chronic rhinosinusitis, simulation in ENT training and the 'fragility index' for randomised controlled trials

Edward W Fisher, Jonathan Fishman

- PMID: 38501212

- DOI: 10.1017/S0022215124000379

No abstract available

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

chronic cough

1
Review

Chest

.
. 2024 Mar 18:S0012-3692(24)00396-9.

doi: 10.1016/j.chest.2024.03.026. Online ahead of print.

Laryngeal Dysfunction Manifesting as Chronic Refractory Cough and Dyspnea Laryngeal Physiology in Respiratory Health and Disease

Krishna M Sundar[1], Amanda Stark[2], Michael J Morris[3]

Affiliations expand

- PMID: 38508333

- DOI: 10.1016/j.chest.2024.03.026

Abstract

Topic importance: Laryngeal dysfunction as a cause of chronic refractory cough (CRC) and episodic dyspnea is often missed which results in unnecessary testing and delays in diagnosis. Understanding laryngeal roles in breathing and airway protection can help to appreciate the propensity to laryngeal dysfunction with aging, chronic lung disease and sleep apnea.

Review findings: The human larynx is a complex muscular structure that undertakes multiple roles of breathing, vocalization, coughing and swallowing. To undertake these

activities, the larynx has a high density of sensory and motor innervation. Besides common embryological origins with the pharynx and esophagus with which many laryngeal activities are shared, somatomotor and autonomic pathways regulate emotional, cognitive and complex motor sequence-planning activities within the larynx. Due to its unique location, the larynx is susceptible to infectious and gastroesophageal reflux-related insults. Couple this with key roles in regulation of airflow and mediation of airway protective reflexes, it is not surprising that neuropathic abnormalities and muscle dysfunction can develop frequently. The expression of laryngeal dysfunction as hypersensitivity to mechanical, thermal, chemical and other stimuli leads to exaggerated airway protective reflexes (laryngeal adductor reflex and cough reflex) manifesting as dyspnea and cough.

Summary: Pulmonologists should incorporate assessment of laryngeal dysfunction during evaluation of CRC and dyspnea. Recognition of laryngeal hypersensitivity in patient with CRC can identify patients that can benefit from cough suppression therapies. Similarly, timely identification of inducible laryngeal obstruction can not only resolve episodic dyspnea but lessen need for unnecessary testing and treatments.

Keywords: Chronic cough; dysphonia; vocal cord dysfunction.

Explainable artificial intelligence for cough-related quality of life impairment prediction in asthmatic patients

Sara Narteni[1,2], Ilaria Baiardini[3], Fulvio Braido[3], Maurizio Mongelli[1]

Affiliations expand

- PMID: 38502606
- PMCID: PMC10950232
- DOI: 10.1371/journal.pone.0292980

Abstract

Explainable Artificial Intelligence (XAI) is becoming a disruptive trend in healthcare, allowing for transparency and interpretability of autonomous decision-making. In this study, we present an innovative application of a rule-based classification model to identify the main causes of chronic cough-related quality of life (QoL) impairment in a cohort of asthmatic patients. The proposed approach first involves the design of a suitable symptoms questionnaire and the subsequent analyses via XAI. Specifically, feature ranking, derived from statistically validated decision rules, helped in automatically identifying the main factors influencing an impaired QoL: pharynx/larynx and upper airways when asthma is under control, and asthma itself and digestive trait when asthma is not controlled. Moreover, the obtained if-then rules identified specific thresholds on the symptoms associated to the impaired QoL. These results, by finding priorities among symptoms, may prove helpful in supporting physicians in the choice of the most adequate diagnostic/therapeutic plan.

Conflict of interest statement

The authors have declared that no competing interests exist.

- 24 references
- 5 figures

SUPPLEMENTARY INFO

MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

3

Case Reports

Pract Neurol

-
-
-

. 2024 Mar 19;24(2):116-120.

doi: 10.1136/pn-2023-003816.

Neurosarcoidosis with chronic cough and Horner's syndrome

Emma Callanan[1], Patricia Mcnamara[2], Gordon Ingle[2]

Affiliations expand

- PMID: 38160054

- DOI: 10.1136/pn-2023-003816

Abstract

A 62-year-old man attended ophthalmology for a simple ptosis repair. He had a chronic cough, a Horner's syndrome with post-gustatory hyperhidrosis. He was referred to the respiratory and neurology teams. MR scan of his head and neck found evidence of multifocal disease at the skull base and carotid canal, and further tests identified additional deposits in the hilar lymph nodes, heart and sacrum. A transbronchial biopsy confirmed the diagnosis of sarcoidosis. His symptoms and imaging responded well to corticosteroids, but he still undergoes regular imaging. We discuss the features of Horner's syndrome, and the autonomic associations of a chronic cough.

Keywords: AUTONOMIC; CLINICAL NEUROLOGY; NEUROANATOMY; RESPIRATORY MEDICINE.

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Supplementary conceptsexpand

FULL TEXT LINKS

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

1
J Asthma

-
-
-

. 2024 Mar 23:1-9.

doi: 10.1080/02770903.2024.2334901. Online ahead of print.

Bronchiectasis Severity Index and FACED scores in patients with allergic bronchopulmonary aspergillosis complicating asthma: do they correlate with immunological severity or high-attenuation mucus?

Shruti Phadnis[1], Valliappan Muthu[1], Inderpaul S Sehgal[1], Kuruswamy T Prasad[1], Sahajal Dhooria[1], Ashutosh N Aggarwal[1], Ritesh Agarwal[1]

Affiliations expand

- PMID: 38520686

- DOI: 10.1080/02770903.2024.2334901

Abstract

Background: The utility of two disease-severity indices, namely bronchiectasis severity index (BSI) and FACED score in allergic bronchopulmonary aspergillosis (ABPA) remains unknown.**Objective:** To correlate the BSI and FACED scores with immunological parameters (serum IgE [total and *A. fumigatus*-specific], *A. fumigatus*-specific IgG, blood eosinophil count), and high-attenuation mucus on chest computed tomography in ABPA. The secondary objectives were to evaluate the correlation between BSI and FACED scores and correlate the BSI/FACED scores with the bronchiectasis health questionnaire (BHQ) and Saint George's Respiratory Questionnaire (SGRQ).**Methods:** We included treatment-naïve ABPA subjects with bronchiectasis in a prospective observational study. We computed the BSI and FACED scores for each subject before initiating treatment. The subjects also completed two quality-of-life questionnaires (BHQ and SGRQ).**Results:** We included 91 subjects. The mean (standard deviation) BSI and FACED scores were 3.43 (3.39) and 1.43 (1.27). We found no correlation between BSI or FACED with any immunological parameter or high-attenuation mucus. There was a strong correlation between BSI and FACED scores ($r = 0.76$, $p < 0.001$). We found a weak correlation between BSI and BHQ/SGRQ and FACED and SGRQ.**Conclusion:** We found no correlation between BSI and FACED with immunological parameters in ABPA. However, we found a significant correlation between BSI and FACED and a weak correlation between SGRQ and BHQ. ABPA likely requires a separate disease-severity scoring system.

Keywords: Aspergillus; allergic bronchopulmonary mycosis; asthma; bronchiectasis; quality of life.

2

BMC Pulm Med

. 2024 Mar 20;24(1):144.

doi: 10.1186/s12890-024-02962-6.

The role of Neutrophil counts, infections and Smoking in mediating the Effect of Bronchiectasis on Chronic Obstructive Pulmonary Disease: a mendelian randomization study

Lei Gu[#1,2,3], Wei Liu[#4], Jian-An Huang[1,2,3], Lujian Zhu[5], Xiaowen Hu[6], Jian Yue[7], Jing Lin[8]

Affiliations expand

- PMID: 38509541

- PMCID: PMC10953251

- DOI: 10.1186/s12890-024-02962-6

Abstract

Background: The causality of the relationship between bronchiectasis and chronic obstructive pulmonary disease (COPD) remains unclear. This study aims to investigate the potential causal relationship between them, with a specific focus on the role of airway inflammation, infections, smoking as the mediators in the development of COPD.

Methods: We conducted a two-sample Mendelian randomization (MR) analysis to assess: (1) the causal impact of bronchiectasis on COPD, sex, smoking status, infections, eosinophil and neutrophil counts, as well as the causal impact of COPD on bronchiectasis; (2) the causal effect of smoking status, infections and neutrophil counts on COPD; and (3) the extent to which the smoking status, infections and neutrophil counts might mediate any influence of bronchiectasis on the development of COPD.

Results: COPD was associated with a higher risk of bronchiectasis (OR 1.28 [95% CI 1.05, 1.56]). Bronchiectasis was associated with a higher risk of COPD (OR 1.08 [95% CI 1.04, 1.13]), higher levels of neutrophil (OR 1.01 [95% CI 1.00, 1.01]), higher risk of respiratory infections (OR 1.04 [95% CI 1.02, 1.06]) and lower risk of smoking. The causal associations of higher neutrophil cells, respiratory infections and smoking with higher COPD risk remained after performing sensitivity analyses that considered different models of horizontal pleiotropy, with OR 1.17, 1.69 and 95.13, respectively. The bronchiectasis-COPD effect was 0.99, 0.85 and 122.79 with genetic adjustment for neutrophils, respiratory infections and smoking.

Conclusion: COPD and bronchiectasis are mutually causal. And increased neutrophil cell count and respiratory infections appears to mediate much of the effect of bronchiectasis on COPD.

Keywords: Bronchiectasis; Chronic obstructive Pulmonary Disease; Mendelian randomization; Neutrophil; Respiratory infections; Smoking.

Conflict of interest statement

The authors declare no competing interests.

- 20 references
- 5 figures

SUPPLEMENTARY INFO

MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

3

ERJ Open Res

. 2024 Mar 18;10(2):00715-2023.

doi: 10.1183/23120541.00715-2023. eCollection 2024 Mar.

Measuring accuracy of International Classification of Diseases codes in identification of patients with non-cystic fibrosis bronchiectasis

O'Neil Green[1], Sybille Liautaud[1], Alexander Knee[2], Lucy Modahl[3]

Affiliations expand

- PMID: 38500799

- PMCID: PMC10945379

- DOI: 10.1183/23120541.00715-2023

Abstract

Introduction: Non-cystic fibrosis bronchiectasis is a disease which is increasing in incidence and prevalence worldwide. The incidence of the disease is frequently estimated using databases that rely on International Classification of Diseases, ninth and tenth revisions, clinical modification (ICD-9-CM/ICD-10-CM) discharge diagnoses. Code accuracy

has proved to be a major issue for other diagnoses using ICD codes. This study aims to investigate the accuracy of the ICD codes for the diagnosis of non-cystic fibrosis bronchiectasis.

Methods: This is a retrospective diagnostic accuracy study which compares the radiologist's diagnosis of bronchiectasis with the ICD code reflection of that diagnosis at discharge.

Results: Sensitivities were 34% (same for both ICD-9-CM and ICD-10-CM windows) and specificities ranged from 69% for the ICD-9-CM window to 81% for ICD-10-CM window.

Conclusion: We observed that ICD codes are an insufficient method to identify patients with a radiologist diagnosis of bronchiectasis.

Conflict of interest statement

Conflict of 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.

- 21 references
- 2 figures

4

ERJ Open Res

. 2024 Mar 18;10(2):00713-2023.

doi: 10.1183/23120541.00713-2023. eCollection 2024 Mar.

Diagnostic delay in bronchiectasis: an Italian perspective

Carlo Chessari[1], Edoardo Simonetta[2], Francesco Amati[2,3], Mattia Nigro[2,3], Anna Stainer[2,3], Giovanni Sotgiu[4], Mariangela Puci[4], Andrea Gramegna[5,6], Francesco Blasi[5,6], Letizia Corinna Morlacchi[5,6], Agata Alba Maria Domenica Buscemi[5,6], Valentina Conio[7,8], Vincenzo Sanci[7,8], Angelo G Corsico[7,8], Paola Faverio[9,10], Weronika Michalak[9,10], Fabrizio Luppi[9,10], Claudia Crimi[11,12], Carlo Vancheri[11,12], Raffaele Campisi[11], Maria Rosaria Vulpi[13], Giovanna Elisiana Carpagnano[13], Marianna Cicchetti[13], Kseniia Sekretna[14], Nicola Scichilone[1], Salvatore Battaglia[1], Stefano Aliberti[2,3]

Affiliations expand

- PMID: 38500794

- PMCID: PMC10945380

- DOI: 10.1183/23120541.00713-2023

Abstract

It takes ~3.5 years to reach a diagnosis of bronchiectasis from onset of symptoms: the long patient's journey in Italy https://bit.ly/46XMWAz.

Conflict of interest statement

Conflict of interest: G. Sotgiu is an associate editor of this journal. Conflict of interest: A. Gramegna reports consulting fees from Vertex and Zambon, outside the submitted work; payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from Vertex, Chiesi and Insmed, outside the submitted work; support for attending meetings and/or travel from Neupharma, Chiesi and Insmed, outside the submitted work; participation on a Data Safety Monitoring Board or Advisory Board for Vertex, outside the submitted work. Conflict of interest: F. Blasi reports grants or contracts from AstraZeneca, Chiesi, GlaxoSmithKline and Insmed, outside the submitted work; consulting fees from GlaxoSmithKline, Menarini and OM Pharma, outside the submitted work; payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from AstraZeneca, Chiesi, GlaxoSmithKline, Grifols, Insmed, Menarini, Om Pharma, Pfizer, Sanofi, Vertex, Viatris and Zambon, outside the submitted work. Conflict of interest: C. Crimi reports payment or honoraria for lectures, presentations,

speakers' bureaus, manuscript writing or educational events from GSK, Sanofi, AstraZeneca, F&P, ResMed and Novartis, outside the submitted work; and patent pending number 102023000013077 not related to the submitted work. Conflict of interest: S. Aliberti reports grants or contracts from Insmed Incorporated, Chiesi, Fisher & Paykel and GSK, outside the submitted work; royalties or licenses from McGraw Hill, outside the submitted work; consulting fees from Insmed Incorporated, Insmed Italy, Insmed Ireland Ltd, Zambon Spa, AstraZeneca UK Limited, AstraZeneca Pharmaceutical LP, CSL Behring GmbH, Grifols, Fondazione Internazionale Menarini, Moderna, Chiesi, MSD Italia S.r.l., BRAHMS, Physioassist SAS and GlaxoSmithKline Spa, outside the submitted work; payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from GlaxoSmithKline Spa, Thermofisher Scientific, Insmed Italy, Insmed Ireland Ltd, Zambon and Fondazione Internazionale Menarini, outside the submitted work; and participation on a Data Safety Monitoring Board or Advisory Board for Insmed Incorporated, Insmed Italy, AstraZeneca UK Limited and MSD Italia S.r.l, outside the submitted work. Conflict of interest: The remaining authors have nothing to disclose.

- 12 references

5

ERJ Open Res

-
-
-

. 2024 Mar 18;10(2):00867-2023.

doi: 10.1183/23120541.00867-2023. eCollection 2024 Mar.

COPD Assessment Test and risk of readmission in patients with

bronchiectasis: a prospective cohort study

Juan Wang[1,2], Xiaoting Chen[3,2], Siqi He[1,2], Jing Li[1], Tianyuan Ma[3], Lu Liu[4], Lei Zhang[5], Xiaoning Bu[1]

Affiliations expand

- PMID: 38500792
- PMCID: PMC10945388
- DOI: 10.1183/23120541.00867-2023

Abstract

Introduction: Readmission following bronchiectasis exacerbation is a common and challenging clinical problem and few simple predictive tools exist. The COPD Assessment Test (CAT) is an easy-to-use questionnaire. This study aims to evaluate the predictive value of CAT scores in determining the risk of readmission in patients with bronchiectasis exacerbation.

Methods: We conducted a prospective cohort study in 106 bronchiectasis patients admitted with exacerbation. All patients completed the CAT at admission and at discharge. Patients were followed-up for 12 months to collect data on readmission. The area under the curve was used to measure the predictive value of CAT at admission, CAT at discharge and change in CAT for readmission due to bronchiectasis exacerbation.

Results: 46 patients were readmitted for bronchiectasis exacerbation within 12 months. High CAT at admission was an independent risk factor for readmission within 12 months in patients with acute exacerbation of bronchiectasis (hazard ratio 3.201, 95% CI 1.065-9.624; $p<0.038$) after adjustment for confounding variables. The cut-off value of CAT at admission and CAT at discharge to predict 12-month readmission in patients with acute exacerbation of bronchiectasis was 23.5 (sensitivity 62.2%, specificity 83.6%) and 15.5 (sensitivity 52.2%, specificity 87.0%).

Conclusions: CAT at admission is a strong predictor of readmission in patients with bronchiectasis exacerbation.

Conflict of interest statement

Conflict of interest: J. Wang reports no conflicts of interest. Conflict of interest: X. Chen reports no conflicts of interest. Conflict of interest: S. He reports no conflicts of interest. Conflict of interest: J. Li reports no conflicts of interest. Conflict of interest: T. Ma reports no conflicts of interest. Conflict of interest: L. Liu reports no conflicts of interest. Conflict of interest: L. Zhang reports no conflicts of interest. Conflict of interest: X. Bu reports no conflicts of interest.

- 35 references
- 5 figures

6

Lung

-
-
-

. 2024 Mar 18.

doi: 10.1007/s00408-024-00683-5. Online ahead of print.

Asymptomatic Dysphagia and Aspiration in Patients with Idiopathic Bronchiectasis

Tal Perluk[1], Eiman Abu Bandora[2], Ophir Freund[3], Tommy Jacob[2], Inbal Friedman Regev[3], Eyal Kleinhendler[3], Michal Shteinberg[4,5], Amir Bar-Shai[3], Yael Oestriecher-Kedem[2]

Affiliations expand

- PMID: 38499811

- DOI: 10.1007/s00408-024-00683-5

Abstract

Purpose: Although considered contributors to idiopathic bronchiectasis (IB), neither dysphagia nor silent aspiration have been systematically evaluated in IB patients. We aimed to explore the prevalence of asymptomatic dysphagia and silent aspiration in IB patients and to identify parameters predictive of their presence.

Methods: This prospective cohort study included IB patients from our Pulmonary Institute without prior history of dysphagia and without prior dysphagia workup. Swallowing function was assessed by the Eating Assessment Tool (EAT-10) questionnaire and by the Fiberoptic Endoscopic Evaluation of Swallowing (FEES) test.

Results: Forty-seven patients (31 females, mean age 67 ± 16 years) were recruited. An EAT-10 score ≥ 3 (risk for swallowing problems) was present in 21 patients (44.6%). Forty-two patients (89.3%) had at least one abnormal swallowing parameter in the FEES test. Six patients (12.7%) had a penetration aspiration score (PAS) in the FEES of at least 6, indicating aspiration. An EAT-10 score of 3 was found to be the ideal cutoff to predict aspiration in the FEES, with a good level of accuracy (area under the curve = 0.78, 95% CI 0.629-0.932, p = 0.03) and sensitivity of 83%. This cutoff also showed a trend towards a more severe disease using the FACED (forced expiratory volume, age, colonization with pseudomonas, extension of lung involvement, dyspnea) score (p = 0.05).

Conclusion: Dysphagia is prevalent in IB and may be undiagnosed if not specifically sought. We recommend screening all patients with IB for dysphagia by the EAT-10 questionnaire and referring all those with a score of ≥ 3 to formal swallowing assessment.

Keywords: Aspiration; Bronchiectasis; Diagnosis; EAT-10 score; Fiberoptic Endoscopic Evaluation of Swallowing.

- 33 references

7

Respiration

-
-
-

. 2024 Mar 18.

doi: 10.1159/000538091. Online ahead of print.

Pectoralis muscle area as a predictor of mortality in patients hospitalized with bronchiectasis exacerbation

Hyewon Seo, Seung-Ick Cha, Jongmin Park, Jae-Kwang Lim, Won Kee Lee, Ji-Eun Park, Sun Ha Choi, Yong Hoon Lee, Seung-Soo Yoo, Shin-Yup Lee, Jaehee Lee, Chang-Ho Kim, Jae-Yong Park

- PMID: 38499001

- DOI: 10.1159/000538091

Abstract

Introduction: Data on factors related to mortality in patients with bronchiectasis exacerbation are insufficient. Computerized tomography (CT) can measure the pectoralis muscle area (PMA) and is a useful tool to diagnose sarcopenia. This study aimed to evaluate whether PMA can predict mortality in patients with bronchiectasis exacerbation.

Methods: Patients hospitalized due to bronchiectasis exacerbation at a single center were retrospectively divided into survivors and non-survivors based on 1-year mortality. Thereafter, a comparison of the clinical and radiologic characteristics was conducted between the two groups.

Results: A total of 66 (14%) patients died at 1 year. In the multivariate analysis, age, body mass index (BMI) < 18.4 kg/m2, sex-specific PMA quartile, ≥ 3 exacerbations in the previous year, serum albumin < 3.5 g/dL, cystic bronchiectasis, tuberculosis-destroyed lung, and diabetes mellitus were independent predictors for the 1-year mortality in patients hospitalized with bronchiectasis exacerbation. A lower PMA was associated with a lower overall survival rate in the survival analysis according to sex-specific quartiles of PMA. PMA had the highest area under the curve during assessment of prognostic

performance in predicting the 1-year mortality. The lowest sex-specific PMA quartile group exhibited higher disease severity than the highest quartile group.

Conclusions: CT-derived PMA was an independent predictor of 1-year mortality in patients hospitalized with bronchiectasis exacerbation. Patients with lower PMA exhibited higher disease severity. These findings suggest that PMA might be a useful marker for providing additional information regarding prognosis of patients with bronchiectasis exacerbation.