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COPD

1
J Patient Rep Outcomes

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. 2022 Nov 26;6(1):119.

doi: 10.1186/s41687-022-00521-3.

Comparability of a provisioned device versus bring your own device for completion of patient-reported outcome measures by participants with chronic obstructive pulmonary disease: quantitative study findings

Stacie Hudgens[1], Louise Newton[2], Sonya Eremenco[3], Mabel Crescioni[4], Tara Symonds[2], Philip C G Griffiths[2], David S Reasner[5], Bill Byrom[6], Paul O'Donohoe[7], Susan Vallow[8], Patient-Reported Outcome (PRO) Consortium and Electronic Clinical Outcome Assessment (eCOA) Consortium

Affiliations expand

- PMID: 36435889

- DOI: 10.1186/s41687-022-00521-3

Abstract

Objective: To quantitatively compare equivalence and compliance of patient-reported outcome (PRO) data collected via provisioned device (PD) versus bring your own device (BYOD).

Methods: Participants with stable chronic obstructive pulmonary disease (COPD) completed the EXAcerbations of Chronic Pulmonary Disease Tool (EXACT®) daily and COPD Assessment Test™ (CAT) and Patient Global Impression of Severity (PGIS) of COPD weekly on either PD or BYOD for 15 days, then switched device types for 15 days. EXACT was scored using the Evaluating Respiratory Symptoms in COPD (E-RS®: COPD) algorithm and equivalence assessed using intraclass correlation coefficients (ICCs) adjusting for cross-over sequence, period, and time. Two one-sided tests (TOSTs) used ICC adjusted means with 10%, 20%, and 40% of total score tested as equivalence margins. Compliance and comfort with technology were assessed. Equivalence across 3 device screen sizes was assessed following the second completion period.

Results: Participants (N = 64) reported high comfort with technology, with 79.7% reporting being "quite a bit" or "very" comfortable. Weekly compliance was high (BYOD = 89.7-100%; PD = 76.9-100%). CAT and E-RS: COPD scores correlated well with PGIS ($r > 0.50$) and demonstrated equivalence between PD and BYOD completion (ICC = 0.863-0.908). TOST equivalence was achieved within 10% of the total score ($p > 0.05$). PRO measure scores were equivalent across 3 different screen sizes (ICC = 0.972-0.989).

Conclusions: Measure completion was high and scores equivalent between PD and BYOD, supporting use of BYOD in addition to PD for collecting PRO data in COPD studies and in demographically diverse patient populations.

Keywords: BYOD; Bring your own device; COPD; PRO; Patient-reported outcome.

- 9 references

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Heart Lung

. 2022 Nov 23;58:91-97.

doi: 10.1016/j.hrtlng.2022.11.009. Online ahead of print.

Respiratory and peripheral muscle strength influence recovery of exercise capacity after severe exacerbation of COPD? An observational prospective cohort study

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Affiliations expand

- PMID: 36434827

- DOI: 10.1016/j.hrtlng.2022.11.009

Abstract

Background: Patients with acute exacerbation of chronic obstructive pulmonary disease (AECOPD) have decreased exercise tolerance, which may persist for months. In this context, little is known about the associations between muscle strength and recovery of exercise capacity.

Objective: To assess whether respiratory and peripheral muscle strength influence recovery of exercise capacity in patients hospitalized due to AECOPD.

Methods: Twenty-seven AECOPD patients (aged 69 ± 7 years, 56% male) were included. The following assessments were performed within 24 to 72 h of hospital admission: (i) respiratory muscle strength, measured by maximal inspiratory and expiratory pressures (MIP and MEP); (ii) peripheral muscle strength, assessed by handgrip and quadriceps muscle strength; and (iii) exercise capacity, measured by 6-min walking distance (6MWD). The 6MWD was reassessed 30 days later to determine the recovery of exercise capacity.

Results: After 30 days, while 63% of the patients showed clinically important improvement in the 6MWD (recovery ≥ 30 m), 37% showed no change (recovery < 30 m). During hospital stay, the non-recovered group had lower quadriceps muscle strength compared to the recovered group (15 ± 5 vs. 22 ± 6 kgf; P = 0.006), with no significant difference for MIP, MEP and handgrip strength. Only quadriceps muscle strength was associated with recovery of exercise capacity (r = 0.56; P = 0.003).

Conclusion: AECOPD patients with quadriceps muscle weakness during hospitalization have poor recovery of exercise capacity after 30 days. This finding suggests the importance of early rehabilitation to improve quadriceps strength and accelerate functional recovery after AECOPD.

Keywords: COPD; Exercise capacity; Hospitalization; Muscle strength.

Conflict of interest statement

Declarations of Competing Interest None.
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J Cardiothorac Surg

. 2022 Nov 24;17(1):294.

doi: 10.1186/s13019-022-02042-y.

Preoperative inhalation therapy for patients with chronic obstructive pulmonary disease undergoing lung surgery: a retrospective study

Ryusuke Machino[1,2], Koichiro Shimoyama[1], Takeshi Nagayasu[2], Tsutomu Tagawa[3]

Affiliations expand

- PMID: 36434678

- DOI: 10.1186/s13019-022-02042-y

Abstract

Background: Research shows that even the short-term administration of inhaled drugs immediately before surgery can improve respiratory function in surgical candidates with chronic obstructive pulmonary disease (COPD). However, the long-term efficacies of different types of long-acting inhaled agents when used during a short preoperative period remain unclear. Therefore, we evaluated the efficacies of short-term, preoperative long-acting muscarinic antagonists (LAMAs), inhaled corticosteroids with long-acting β2-agonists (ICSs/LABAs), and long-acting muscarinic antagonists with long-acting β2-agonists (LAMAs/LABAs) in patients with COPD after lung resection.

Methods: Patients who underwent anatomical lung resections between April 2010 and March 2020 were divided into the non-COPD (193 patients) and COPD (241 patients) groups. The COPD group underwent preoperative treatment with either a LAMA (51 patients), an ICS/LABA (112 patients), or a LAMA/LABA (78 patients) for almost 1 month, with pulmonary function tests performed initially, just before surgery, and at 1 and 6 months after surgery. Improvement in preoperative respiratory function by inhalation therapy and the maintenance of improvement in respiratory function after surgery were examined in each group.

Results: The COPD group had significantly higher proportions of men, older patients, smokers, and histopathologic types except for adenocarcinoma than the non-COPD group; however, there were neither differences in sex, age, percentage of smokers, or histopathologic type among the inhalant groups within the COPD group nor were there differences in percentage of GOLD stage, preoperative inhalation period, or percentage of resected lobes in lobectomy. Preoperative increases in forced expiratory volume in 1.0 s (FEV1.0) were significantly higher in the COPD group (129.07 ± 11.29 mL) than in the non-COPD group (-2.32 ± 12.93 mL) ($p < 0.0001$). At 6 months, there was no significant difference in residual FEV1.0 between the COPD-LAMA/LABA (2017.46 ± 62.43 mL) and non-COPD groups (2046.93 ± 40.53 mL). The FEV1.0 reduction rate was more suppressed in the COPD-LAMA/LABA group than in the non-COPD group at 1 and 6 months after surgery.

Conclusions: Short-term, preoperative, inhaled pharmacotherapies, particularly LAMAs/LABAs, were effective at improving respiratory function in patients with COPD; thus, these agents are recommended for use in this population.

Keywords: Chronic obstructive pulmonary disease; Inhalation; Lung surgery.

- 23 references

Proceed to details

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4

Crit Rev Clin Lab Sci

. 2022 Nov 24;1-18.

doi: 10.1080/10408363.2022.2140329. Online ahead of print.

Metabolomics of asthma, COPD, and asthma-COPD overlap: an overview

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Affiliations expand

- PMID: 36420874

- DOI: 10.1080/10408363.2022.2140329

Abstract

The two common progressive lung diseases, asthma and chronic obstructive pulmonary disease (COPD), are the leading causes of morbidity and mortality worldwide. Asthma-COPD overlap, referred to as ACO, is another complex pulmonary disease that manifests itself with features of both asthma and COPD. The disease has no clear diagnostic or therapeutic guidelines, thereby making both diagnosis and treatment challenging. Though a number of studies on ACO have been documented, gaps in knowledge regarding the

pathophysiologic mechanism of this disorder exist. Addressing this issue is an urgent need for improved diagnostic and therapeutic management of the disease. Metabolomics, an increasingly popular technique, reveals the pathogenesis of complex diseases and holds promise in biomarker discovery. This comprehensive narrative review, comprising 99 original research articles in the last five years (2017-2022), summarizes the scientific advances in terms of metabolic alterations in patients with asthma, COPD, and ACO. The analytical tools, nuclear magnetic resonance (NMR), gas chromatography-mass spectrometry (GC-MS), and liquid chromatography-mass spectrometry (LC-MS), commonly used to study the expression of the metabolome, are discussed. Challenges frequently encountered during metabolite identification and quality assessment are highlighted. Bridging the gap between phenotype and metabotype is envisioned in the future.

Keywords: COPD; Metabolomics; NMR; asthma; asthma-COPD overlap; mass spectrometry.

Multicenter Study

BMC Prim Care

. 2022 Nov 22;23(1):295.

doi: 10.1186/s12875-022-01904-7.

Appropriateness of antibiotic treatment of acute respiratory tract infections in Tunisian primary care and emergency

departments: a multicenter cross-sectional study

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Affiliations expand

- PMID: 36418965

- DOI: 10.1186/s12875-022-01904-7

Abstract

Background: Little is known about the pattern and appropriateness of antibiotic prescriptions in patients with acute respiratory tract infections (ARTIs).

Objective: Describe the antibiotics used to treat ARTIs in Tunisian primary care offices and emergency departments (EDs), and assess the appropriateness of their use.

Methods: It was a prospective multicenter cross-sectional observational clinical study conducted at 63 primary care offices and 6 EDS during a period of 8 months. Appropriateness of antibiotic prescription was evaluated by trained physicians using the medication appropriateness index (MAI). The MAI ratings generated a weighted score of 0 to 18 with higher scores indicating low appropriateness. The study was conducted in accordance with the Declaration of Helsinki and national and institutional standards. The study was approved by the Ethics committee of Monastir Medical Faculty.

Results: From the 12,880 patients screened we included 9886 patients. The mean age was 47.4, and 55.4% were men. The most frequent diagnosis of ARTI was were acute bronchitis (45.3%), COPD exacerbation (16.3%), tonsillitis (14.6%), rhinopharyngitis (12.2%) and sinusitis (11.5%). The most prescribed classes of antibiotics were penicillins (58.3%), fluoroquinolones (17.6%), and macrolides (16.9%). Antibiotic therapy was inappropriate in 75.5% of patients of whom 65.2% had bronchitis. 65% of patients had one or more antibiotic prescribing inappropriateness criteria as assessed by the MAI. The most frequently rated criteria were with expensiveness (75.8%) and indication (40%). Amoxicillin-clavulanic acid and levofloxacin were the most inappropriately prescribed antibiotics. History of cardiac ischemia ([OR] 3.66; 95% [CI] 2.17-10.26; $p < 0.001$), asthma ([OR] 3.29, 95% [CI] 1.77-6.13; $p < 0.001$), diabetes ([OR] 2.09, 95% [CI] 1.54-2.97; $p = 0.003$), history of COPD ([OR] 1.75, 95% [CI] 1.43-2.15; $p < 0.001$) and age > 65 years (Odds Ratio [OR] 1.35,

95% confidence interval [CI] 1.16-1.58; p < 0.001) were associated with a higher likelihood of inappropriate prescribing.

Conclusion: Our findings indicate a high inappropriate use of antibiotics in ARTIs treated in in primary care and EDs. This was mostly related to antibiotic prescription in acute bronchitis and overuse of expensive broad spectrum antibiotics. Future interventions to improve antibiotic prescribing in primary care and EDs is needed.

Trial registration: the trial is registered at Clinicaltrials.gov registry (NCT04482231).

Keywords: Acute respiratory tract infections; Antibiotics; Appropriateness.

- 34 references

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances, Associated dataexpand

Proceed to details

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6

Clin Respir J

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. 2022 Nov 22.

doi: 10.1111/crj.13554. Online ahead of print.

Chronic obstructive pulmonary disease is associated with an increased risk of herpes zoster: A retrospective United States claims database analysis

Philippe Thompson-Leduc[1], Parinaz Ghaswalla[2], Wendy Y Cheng[3], Min-Jung Wang[3], Michael Bogart[4], Brandon J Patterson[2], Mei Sheng Duh[3], Suna Park[3], Barbara P Yawn[5]

Affiliations expand

- PMID: 36415956

- DOI: 10.1111/crj.13554

Abstract

Chronic obstructive pulmonary disease (COPD) has been reported as a potential risk factor for developing herpes zoster (HZ). We aimed at comparing incidence rates of HZ between people with versus without COPD in the US. This retrospective cohort study used data from Optum's de-identified Clinformatics Data Mart database from 1/1/2013 through 12/31/2018. We identified two cohorts of people ≥40 years without prior HZ, HZ vaccination, postherpetic neuralgia (PHN) or HZ ophthalmicus: those with (COPD+) and those without (COPD-) a COPD diagnosis. Adjusted incidence rate ratios (aIRRs) of HZ and PHN were calculated using generalized linear models, controlling for the propensity score of being diagnosed with COPD and relevant demographic and clinical characteristics. People in the COPD+ cohort (n = 161 970) were considerably older, had more comorbidities and were more likely to use corticosteroids than those in the COPD- cohort (n = 9 643 522). The incidence rate of HZ was 5.7-fold higher in the COPD+ versus COPD- cohorts (13.0 vs. 2.3 per 1000 person-years [PY]; aIRR, 2.77; 95% confidence interval [CI], 2.69 to 2.85; P < 0.001). The unadjusted incidence rate of PHN was 1.7-fold higher in the COPD+/HZ+ versus COPD-/HZ+ cohort (64.8 vs. 37.1 per 1000 PY), but not after adjustment (aIRR, 1.07; 95% CI, 0.79 to 1.45). HZ and PHN incidence rates increased with age. After adjustment, COPD+ adults had a 2.8-fold increased risk of developing HZ. These results may help to increase awareness about potential risk factors for HZ and highlight the need for vaccination among those at increased risk.

Keywords: United States; chronic obstructive pulmonary disease; herpes zoster; incidence rate.

- 27 references

SUPPLEMENTARY INFO

Grant supportexpand

FULL TEXT LINKS

Randomized Controlled Trial

JAMA

. 2022 Nov 22;328(20):2022-2032.

doi: 10.1001/jama.2022.20206.

Effect of Regular, Low-Dose, Extended-release Morphine on Chronic Breathlessness in Chronic Obstructive Pulmonary Disease: The BEAMS Randomized Clinical Trial

Magnus Ekström[1,2], Diana Ferreira[3], Sungwon Chang[2], Sandra Louw[4], Miriam J Johnson[5], Danny J Eckert[6], Belinda Fazekas[2], Katherine J Clark[7,8], Meera R Agar[2], David C Currow[3,9], Australian National Palliative Care Clinical Studies Collaborative

Collaborators, Affiliations expand

- PMID: 36413230

- DOI: 10.1001/jama.2022.20206

Abstract

Importance: Chronic breathlessness is common in people with chronic obstructive pulmonary disease (COPD). Regular, low-dose, extended-release morphine may relieve breathlessness, but evidence about its efficacy and dosing is needed.

Objective: To determine the effect of different doses of extended-release morphine on worst breathlessness in people with COPD after 1 week of treatment.

Design, setting, and participants: Multicenter, double-blind, placebo-controlled randomized clinical trial including people with COPD and chronic breathlessness (defined as a modified Medical Research Council score of 3 to 4) conducted at 20 centers in Australia. People were enrolled between September 1, 2016, and November 20, 2019, and followed up through December 26, 2019.

Interventions: People were randomized 1:1:1 to 8 mg/d or 16 mg/d of oral extended-release morphine or placebo during week 1. At the start of weeks 2 and 3, people were randomized 1:1 to 8 mg/d of extended-release morphine, which was added to the prior week's dose, or placebo.

Main outcomes and measures: The primary outcome was change in the intensity of worst breathlessness on a numerical rating scale (score range, 0 [none] to 10 [being worst or most intense]) using the mean score at baseline (from days -3 to -1) to the mean score after week 1 of treatment (from days 5 to 7) in the 8 mg/d and 16 mg/d of extended-release morphine groups vs the placebo group. Secondary outcomes included change in daily step count measured using an actigraphy device from baseline (day -1) to the mean step count from week 3 (from days 19 to 21).

Results: Among the 160 people randomized, 156 were included in the primary analyses (median age, 72 years [IQR, 67 to 78 years]; 48% were women) and 138 (88%) completed treatment at week 1 (48 in the 8 mg/d of morphine group, 43 in the 16 mg/d of morphine group, and 47 in the placebo group). The change in the intensity of worst breathlessness at week 1 was not significantly different between the 8 mg/d of morphine group and the placebo group (mean difference, -0.3 [95% CI, -0.9 to 0.4]) or between the 16 mg/d of morphine group and the placebo group (mean difference, -0.3 [95%, CI, -1.0 to 0.4]). At week 3, the secondary outcome of change in mean daily step count was not significantly different between the 8 mg/d of morphine group and the placebo group (mean difference, -1453 [95% CI, -3310 to 405]), between the 16 mg/d of morphine group and the placebo group (mean difference, -1312 [95% CI, -3220 to 596]), between the 24 mg/d of morphine group and the placebo group (mean difference, -692 [95% CI, -2553 to 1170]), or between the 32 mg/d of morphine group and the placebo group (mean difference, -1924 [95% CI, -47 699 to 921]).

Conclusions and relevance: Among people with COPD and severe chronic breathlessness, daily low-dose, extended-release morphine did not significantly reduce the intensity of worst breathlessness after 1 week of treatment. These findings do not support the use of these doses of extended-release morphine to relieve breathlessness.

Trial registration: ClinicalTrials.gov Identifier: NCT02720822.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances, Associated dataexpand

FULL TEXT LINKS

JAMA FULL TEXT

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Respiration

. 2022 Nov 22;1-10.

doi: 10.1159/000527100. Online ahead of print.

Sternocleidomastoid Muscle Thickness Correlates with Exercise Tolerance in Patients with COPD

Masashi Shiraishi[1,2], Yuji Higashimoto[1], Ryuji Sugiya[1], Hiroki Mizusawa[1], Yu Takeda[1], Shuhei Fujita[1], Osamu Nishiyama[2], Shintarou Kudo[3], Tamotsu Kimura[1], Kanji Fukuda[1], Yuji Tohda[2]

Affiliations expand

- PMID: 36412608

- DOI: 10.1159/000527100

Free article

Abstract

Background: Patients with chronic obstructive pulmonary disease (COPD) have difficulties inhaling as the diaphragm becomes flattened and weakened due to lung hyperinflation. This weakened respiratory function is compensated for by the increased activity of the accessory respiratory muscles, such as the sternocleidomastoid muscle (SCM).

Objectives: This study aimed to evaluate the difference in the SCM thickening fraction (SCM TF) of each respiratory phase (end-expiration, resting inspiration, and end-inspiration), as measured using ultrasonography (US), between patients with COPD and control subjects. We also evaluate the correlation between the SCM TF of each respiratory phase and exercise tolerance in patients with COPD.

Methods: Patients with COPD (n = 44) and age-matched controls (n = 20) underwent US for determination of the SCM TF. Ventilation parameters, including the peak oxygen uptake (peak VO2) and the change in the inspiratory capacity, were measured during cardiopulmonary exercise testing. The SCM thickness and TF was measured during end-expiration, resting breathing, and end-inspiration.

Results: The SCM was significantly thinner in patients with COPD than in controls at end-expiration. The increase in the SCM TF from end-expiration to end-inspiration in patients with COPD did not differ significantly from that in control subjects. In contrast, the SCM TF from end-expiration to resting inspiration was significantly greater in patients with COPD than in control subjects. The peak VO2 was strongly positively correlated with the SCM TF from end-expiration to end-inspiration in patients with COPD ($r = 0.71$, $p < 0.01$).

Conclusions: The SCM may be thinner in patients with COPD than in controls. The SCM TF may also be associated with exercise tolerance.

Keywords: Cardiopulmonary exercise test; Chronic obstructive pulmonary disease; Sternocleidomastoid muscle.

9

PLoS One

. 2022 Nov 21;17(11):e0277973.

doi: 10.1371/journal.pone.0277973. eCollection 2022.

Physical activity pattern of patients with interstitial lung disease compared to patients with COPD: A propensity-matched study

Sofie Breuls[1], Cintia Pereira de Araujo[2], Astrid Blondeel[1], Jonas Yserbyt[3], Wim Janssens[3], Wim Wuyts[3], Thierry Troosters[1], Heleen Demeyer[1,4]

Affiliations expand

- PMID: 36409724

- DOI: 10.1371/journal.pone.0277973

Free article

Abstract

Introduction: Physical activity (PA) is reduced in patients with interstitial lung disease (ILD) and chronic obstructive pulmonary disease (COPD). Evidence about the PA pattern of patients with ILD is scarce. If PA of patients with ILD would be comparable to COPD, it is tempting to speculate that existing interventions focusing on enhancing PA could be as effective in ILD as already shown in COPD. Therefore, we aimed to compare PA and the correlates with PA in matched patients with ILD, COPD, and healthy subjects.

Materials and methods: Patients with ILD (n = 45), COPD (n = 45) and healthy subjects (n = 30) were propensity matched. PA level, pattern, and PA correlations with lung function and physical performance (6-minute walking distance and quadriceps force) were compared between groups.

Results: Daily number of steps was similar in both patient groups (mean±SE: 5631±459 for ILD, 5544±547 for COPD, p = 0.900), but significantly lower compared to healthy subjects (10031±536, p<0.001 for both). Mean intensity of PA tended to be lower in the ILD group (mean±SE metabolic equivalents of task per day: 1.41±0.04) compared to COPD (1.52±0.05, p = 0.074) and healthy individuals (1.67±0.04, p<0.001). The pattern of PA over one day was found to be similar between the three groups. Lastly, the correlation between PA and 6-minute walking distance was significantly weaker in patients with ILD compared to patients with COPD (respectively r = 0.348 and r = 0.739; p<0.05 for both).

Conclusions: For a given functional reserve, patients with ILD perform an equal amount of steps but perform PA at lower intensity compared to patients with COPD. Both groups are less active compared to healthy control subjects. Functional exercise capacity was shown to be only moderately related to PA. This can potentially influence the effectiveness of PA interventions that can be expected.

Conflict of interest statement

The authors have declared that no competing interests exist.

Pol Arch Intern Med

. 2022 Nov 25;132(11):16357.

doi: 10.20452/pamw.16357. Epub 2022 Oct 14.

Challenges in pulmonary rehabilitation: COVID-19 and beyond

Cristoforo Incorvaia, Lisa Longo, Elena Makri, Erminia Ridolo

- PMID: 36239638

- DOI: 10.20452/pamw.16357

Free article

Abstract

Pulmonary rehabilitation is a comprehensive multidisciplinary intervention requiring a team involving an expert chest physician, an exercise training specialist, a nutritional expert, a psychologist, a social worker, and an occupational therapist, who together aim at improving respiratory functional capacity in patients with chronic obstructive pulmonary disease (COPD). We aimed at evaluating the effectiveness of pulmonary rehabilitation in a large number of trials, systematic reviews, and meta-analyses in pre-COVID-19 conditions, and the impact of pulmonary rehabilitation during the COVID-19 pandemic was estimated based on results of abundant available studies. As many as 34 studies were selected to assess the global results of pulmonary rehabilitation in COPD patients before the pandemic, and 40 studies were selected from the literature concerning pulmonary rehabilitation during the COVID-19 pandemic.A large number of systematic reviews and meta-analyses reported on the efficacy of rehabilitation in COPD patients, based on the improvement in inspiratory muscle strength, exercise capacity, dyspnea, and quality of life. The response to rehabilitation in patients with COVID-19 is also satisfactory. The effectiveness of pulmonary rehabilitation in COPD patients shows an evolving need for health care professionals to design an individually tailored pulmonary rehabilitation program for patients with COVID-19 to alleviate the chronic symptoms and reduce complications.

J Cardiopulm Rehabil Prev

. 2022 Nov 25.

doi: 10.1097/HCR.0000000000000735. Online ahead of print.

Strategies to Improve Enrollment and Participation in Pulmonary Rehabilitation Following a Hospitalization for COPD: RESULTS OF A NATIONAL SURVEY

Rajashree Kotejoshyer[1], Julianna Eve, Aruna Priya, Kathleen Mazor, Kerry A Spitzer, Penelope S Pekow, Quinn R Pack, Peter K Lindenauer

Affiliations expand

- PMID: 36137210

- DOI: 10.1097/HCR.0000000000000735

Abstract

Purpose: Pulmonary rehabilitation (PR) improves outcomes for patients with chronic obstructive pulmonary disease (COPD); however, very few patients attend. We sought to describe strategies used to promote participation in PR after a hospitalization for COPD.

Methods: A random sample of 323 United States based PR programs was surveyed. Using a positive deviance approach, a 39-itme survey was developed based on interviews with clinicians at hospitals demonstrating high rates of participation in PR. Items focused on strategies used to promote participation as well as relevant contextual factors.

Results: Responses were received from 209 programs (65%), of which 88% (n = 184) were hospital-based outpatient facilities. Most (91%, n = 190) programs described enrolling

patients continuously, and 80% (n = 167) reported a wait time from referral to the initial PR visit of <4 wk. Organization-level strategies to increase referral to PR included active surveillance (48%, n = 100) and COPD-focused staff (49%, n = 102). Provider-level strategies included clinician education (45%, n = 94), provider outreach (43%, n = 89), order sets (45%, n = 93), and automated referrals (23%, n = 48). Patient-level strategies included bedside education (53%, n = 111), flyers (49%, n = 103), motivational interviewing (33%, n = 69), financial counseling (64%, n = 134), and transportation assistance (35%, n = 73). Fewer than one-quarter (18%, n = 38) of PR programs reported using both bedside education and automatic referral, and 42% (n = 88) programs did not use either strategy.

Conclusions: This study describes current practices in the United States, and highlights opportunities for improvement at the organization, provider, and patient level. Future research needs to demonstrate the effectiveness of these strategies, alone or in combination.

Conflict of interest statement

The authors declare no conflicts of interest.

- 39 references

Fam Pract

. 2022 Nov 22;39(6):1056-1062.

doi: 10.1093/fampra/cmac042.

Chronic diseases and comorbidities in adults with and without intellectual disabilities: comparative cross-sectional study in Dutch general practice

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Affiliations expand

- PMID: 35579254
- PMCID: PMC9680667
- DOI: 10.1093/fampra/cmac042

Free PMC article

Abstract

Background: Chronic disease and comorbidity patterns in people with intellectual disabilities (ID) are more complex than in the general population. However, incomplete understanding of these differences limits care providers in addressing them.

Objective: To compare chronic disease and comorbidity patterns in chronically ill patients with and without ID in Dutch general practice.

Methods: In this population-based study, a multi-regional primary care database of 2018 was combined with national population data to improve identification of adults with ID. Prevalence was calculated using Poisson regression to estimate prevalence ratios and 95% confidence intervals for the highest-impact chronic diseases (ischemic heart disease (IHD), cerebrovascular disease (CVD), diabetes mellitus (DM), and chronic obstructive pulmonary disease (COPD)) and comorbidities.

Results: Information from 18,114 people with ID and 1,093,995 people without ID was available. When considering age and sex, CVD (PR = 1.1), DM (PR = 1.6), and COPD (PR = 1.5) times more prevalent in people with than without ID. At younger age, people with ID

more often had a chronic disease and multiple comorbidities. Males with ID most often had a chronic disease and multiple comorbidities. Comorbidities of circulatory nature were most common.

Conclusions: This study identified a younger onset of chronic illness and a higher prevalence of multiple comorbidities among people with ID in general practice than those without ID. This underlines the complexity of people with ID and chronic diseases in general practice. As this study confirmed the earlier onset of chronic diseases and comorbidities, it is recommended to acknowledge these age differences when following chronic disease guidelines.

Keywords: chronic disease; comorbidity; general practice; intellectual disability; population health; prevalence.

- 40 references
- 4 figures

SUPPLEMENTARY INFO

MeSH terms, Grant supportexpand

FULL TEXT LINKS

OXFORD ACADEMIC

ASTHMA

1
Review

Int J Mol Sci

-
-
-

. 2022 Nov 21;23(22):14466.

doi: 10.3390/ijms232214466.

Human Lung Mast Cells: Therapeutic Implications in Asthma

Remo Poto[1,2], Gjada Criscuolo[1,2], Gianni Marone[1,2,3,4], Chris E Brightling[5], Gilda Varricchi[1,2,3,4]

Affiliations expand

- PMID: 36430941

- DOI: 10.3390/ijms232214466

Abstract

Mast cells are strategically located in different compartments of the lung in asthmatic patients. These cells are widely recognized as central effectors and immunomodulators in different asthma phenotypes. Mast cell mediators activate a wide spectrum of cells of the innate and adaptive immune system during airway inflammation. Moreover, these cells modulate the activities of several structural cells (i.e., fibroblasts, airway smooth muscle cells, bronchial epithelial and goblet cells, and endothelial cells) in the human lung. These findings indicate that lung mast cells and their mediators significantly contribute to the immune induction of airway remodeling in severe asthma. Therapies targeting mast cell mediators and/or their receptors, including monoclonal antibodies targeting IgE, IL-4/IL-13, IL-5/IL-5Rα, IL-4Rα, TSLP, and IL-33, have been found safe and effective in the treatment of different phenotypes of asthma. Moreover, agonists of inhibitory receptors expressed by human mast cells (Siglec-8, Siglec-6) are under investigation for asthma treatment. Increasing evidence suggests that different approaches to depleting mast cells show promising results in severe asthma treatment. Novel treatments targeting mast cells can presumably change the course of the disease and induce drug-free remission in bronchial asthma. Here, we provide an overview of current and promising treatments for asthma that directly or indirectly target lung mast cells.

Keywords: airway remodeling; asthma; basophil; biological therapies; eosinophil; macrophage; mast cell.

Pulmonology

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. 2022 Nov 22;S2531-0437(22)00252-5.

doi: 10.1016/j.pulmoe.2022.10.005. Online ahead of print.

Identification by cluster analysis of patients with asthma and nasal symptoms using the MASK-air® mHealth app

J Bousquet[1], B Sousa-Pinto[2], J M Anto[3], R Amaral[2], L Brussino[4], G W Canonica[5], A A Cruz[6], B Gemicioglu[7], T Haahtela[8], M Kupczyk[9], V Kvedariene[10], D E Larenas-Linnemann[11], R Louis[12], N Pham-Thi[13], F Puggioni[5], F S Regateiro[14], J Romantowski[15], J Sastre[16], N Scichilone[17], L Taborda-Barata[18], M T Ventura[19], I Agache[20], A Bedbrook[21], K C Bergmann[22], S Bosnic-Anticevich[23], M Bonini[24], L-P Boulet[25], G Brusselle[26], R Buhl[27], L Cecchi[28], D Charpin[29], C Chaves-Loureiro[30], W Czarlewski[31], F de Blay[32], P Devillier[33], G Joos[26], M Jutel[34], L Klimek[35], P Kuna[9], D Laune[36], J L Pech[37], M Makela[8], M Morais-Almeida[38], R Nadif[39], M Niedoszytko[15], K Ohta[40], N G Papadopoulos[41], A Papi[42], D R Yeverino[43], N Roche[44], A Sá-Sousa[2], B Samolinski[45], M H Shamji[46], A Sheikh[47], C Suppli Ulrik[48], O S Usmani[49], A Valiulis[50], O Vandenplas[51], A Yorgancioglu[52], T Zuberbier[22], J A Fonseca[2]

Affiliations expand

- PMID: 36428213

- DOI: 10.1016/j.pulmoe.2022.10.005

Abstract

Background: The self-reporting of asthma frequently leads to patient misidentification in epidemiological studies. Strategies combining the triangulation of data sources may help to improve the identification of people with asthma. We aimed to combine information from the self-reporting of asthma, medication use and symptoms to identify asthma patterns in the users of an mHealth app.

Methods: We studied MASK-air® users who reported their daily asthma symptoms (assessed by a 0-100 visual analogue scale - "VAS Asthma") at least three times (either in three different months or in any period). K-means cluster analysis methods were applied to identify asthma patterns based on: (i) whether the user self-reported asthma; (ii) whether the user reported asthma medication use and (iii) VAS asthma. Clusters were compared by the number of medications used, VAS asthma levels and Control of Asthma and Allergic Rhinitis Test (CARAT) levels.

Findings: We assessed a total of 8,075 MASK-air® users. The main clustering approach resulted in the identification of seven groups. These groups were interpreted as probable: (i) severe/uncontrolled asthma despite treatment (11.9-16.1% of MASK-air® users); (ii) treated and partly-controlled asthma (6.3-9.7%); (iii) treated and controlled asthma (4.6-5.5%); (iv) untreated uncontrolled asthma (18.2-20.5%); (v) untreated partly-controlled asthma (10.1-10.7%); (vi) untreated controlled asthma (6.7-8.5%) and (vii) no evidence of asthma (33.0-40.2%). This classification was validated in a study of 192 patients enrolled by physicians.

Interpretation: We identified seven profiles based on the probability of having asthma and on its level of control. mHealth tools are hypothesis-generating and complement classical epidemiological approaches in identifying patients with asthma.

Keywords: Asthma; Cluster analysis; Control; Rhinitis; Treatment.

BMJ Case Rep

. 2022 Nov 25;15(11):e252658.

doi: 10.1136/bcr-2022-252658.

ABPA sans asthma: an entity to remember

Avinash Anil Nair[1], Leena Robinson Vimala[2], Divya Chandran[2], Richa Gupta[3]

Affiliations expand

- PMID: 36428029

- DOI: 10.1136/bcr-2022-252658

Abstract

A male patient in his 20s presented with a cough and a small volume of haemoptysis that lasted a year. He had no other constitutional symptoms and a respiratory examination was suggestive of a consolidation. A chronic infection, such as tuberculosis, was suspected. The routine evaluation showed peripheral eosinophilia with raised serum total IgE. Sputum examination for tuberculosis was negative; hence, a high-resolution CT of the thorax was performed, which revealed bilateral bronchiectasis with high-attenuation mucus plugging. The imaging and blood profiles were in favour of allergic bronchopulmonary aspergillosis, but there was no history suggestive of asthma, and the pulmonary function test was normal. The patient underwent a skin prick test and an allergen-specific IgE test for *Aspergillus fumigatus*, and both were positive. His bronchoalveolar lavage cultures also grew *A. fumigatus*, and he responded well to antifungal therapy. This case illustrates the presentation of a rare entity-allergic bronchopulmonary aspergillosis sans asthma.

Keywords: Allergy, asthma; Asthma; Respiratory medicine; Respiratory system; TB and other respiratory infections.

Conflict of interest statement

Competing interests: None declared.

Proceed to details

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J Affect Disord

. 2022 Nov 22;S0165-0327(22)01305-2.

doi: 10.1016/j.jad.2022.11.045. Online ahead of print.

Multi-dimensional analyses of the associations between depression, nocturnal awakening and asthmatic outcomes

Zhigang Hu [1], Yufeng Tian [2], Xinyu Song [3], Ke Hu [4], Ailan Yang [5]

Affiliations expand

- PMID: 36427647

- DOI: 10.1016/j.jad.2022.11.045

Abstract

Background: Depression plays an important role in the occurrence and development of asthma. Nocturnal awakening secondary to asthma is a crucial sign of the deterioration of asthmatic outcomes. This study plans to determine the associations between depression, nocturnal awakening and asthmatic outcomes by using multi-dimensional analyses.

Methods: Study population came from the Adult Asthma Call-Back Survey 2013-2017. Multivariable regression analysis with binomial or Poisson models, dose-dependent analysis and mediation analysis were used to explore the associations between depression and nocturnal awakening with asthmatic episodes/attacks, emergency room (ER) and hospital visits.

Results: 18,684 physician-diagnosis asthmatics were included into this study. This population consisted of 31.4 % with nocturnal awakening and 37.6 % with depression. Multivariable binomial analyses suggested that nocturnal awakening and depression were positively associated with asthmatic episodes/attacks and ER visits. Dose-dependent analyses demonstrated that the increase of nocturnal awakening was positively associated with the increase of depression and three asthmatic outcomes. Asthmatics with depression

had the higher prevalence (adjusted OR = 1.17, 95%CI: 1.08-1.27) and frequency (adjusted RR = 1.08, 95%CI: 1.07-1.10) of nocturnal awakening than those without depression. Mediation analyses suggested that clarification of verbiage denoted trivial effect of depression on the associations between nocturnal awakening with asthmatic outcomes, while nocturnal awakening mildly mediated these associations between depression with asthmatic episodes/attacks (15.26 %, 95%CI: 7.29 %-28.7 %) and ER visits (13.29 %, 95%CI: 5.33 %-44.12 %).

Limitation: The cross-sectional nature limited inferences on causality.

Conclusions: Our findings showed that depression and nocturnal awakening might affect asthmatic outcomes. Nocturnal awakening harbored the mediated effect in the correlations between depression and asthmatic outcomes.

Keywords: Asthma; Depression; Dose-dependent; Mediation analysis; Nocturnal awakening.

Conflict of interest statement

Conflict of interest The authors declare that they have no conflict of interest.
Proceed to details

Review

Pharmacol Ther

. 2022 Nov 22;108313.

doi: 10.1016/j.pharmthera.2022.108313. Online ahead of print.

The role of PGE2 and EP receptors on lung's immune and structural cells; possibilities for future asthma therapy

Dominik Cebulla[1], Chiel van Geffen[1], Saeed Kolahian[2]

Affiliations expand

- PMID: 36427569

- DOI: 10.1016/j.pharmthera.2022.108313

Abstract

Asthma is the most common airway chronic disease with treatments aimed mainly to control the symptoms. Adrenergic receptor agonists, corticosteroids and anti-leukotrienes have been used for decades, and the development of more targeted asthma treatments, known as biological therapies, were only recently established. However, due to the complexity of asthma and the limited efficacy as well as the side effects of available treatments, there is an urgent need for a new generation of asthma therapies. The anti-inflammatory and bronchodilatory effects of prostaglandin E2 in asthma are promising, yet complicated by undesirable side effects, such as cough and airway irritation. In this review, we summarize the most important literature on the role of all four E prostanoid (EP) receptors on the lung's immune and structural cells to further dissect the relevance of EP2/EP4 receptors as potential targets for future asthma therapy.

Keywords: Asthma; EP receptors; Immune and structural cells; Lung; PGE2; Pharmacotherapy.

Conflict of interest statement

Declaration of Competing Interest The authors declare that there are no conflicts of interest.

SUPPLEMENTARY INFO

Publication typesexpand

Proceed to details

Immunology

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. 2022 Nov 24.

doi: 10.1111/imm.13613. Online ahead of print.

Exploration of the Efficacy of Anti-Immunoglobulin E Monoclonal Antibodies in the Treatment of Allergic Asthma

Xue-Jiao Qian[1], Xiao-Tian Hu[2], Ping Jiang[1]

Affiliations expand

- PMID: 36424828

- DOI: 10.1111/imm.13613

Abstract

Objective: The present study aims to evaluate the efficacy of an anti-immunoglobulin E monoclonal antibody (omalizumab) in the treatment of allergic asthma (AS).

Methods: A total of 34 patients with moderate-to-severe bronchial asthma admitted to the Respiratory Department of Tianjin First Central Hospital between September 2019 and September 2021 were enrolled in this study. The patients were treated with omalizumab in addition to conventional inhaled corticosteroids + long-acting β2 agonist treatment. The therapeutic effects before and after the addition of omalizumab were compared.

Results: The lung function indicators (ratio of the forced expiratory volume [FEV] in the first second to the forced vital capacity, FEV in the first second, forced expiratory flow [FEF]

at 50% of vital capacity, FEF at 75% of vital capacity, and maximum mid-expiratory flow), fractionated exhaled nitric oxide values, asthma control test scores, rhinoconjunctivitis quality of life questionnaire scores, and urticaria control test scores were significantly different after 4 months of the regular administration of omalizumab ($P < 0.05$) compared with before administration.

Conclusion: The use of omalizumab had a significant efficacy in the treatment of patients with AS, and the effects were obvious in the subgroups of patients with a combination of AS and atopic dermatitis, chronic urticaria, and allergic rhinitis. These results indicate that the treatment is worthy of clinical promotion.

Keywords: Allergic asthma; Allergic rhinitis; Atopic dermatitis; Chronic urticaria; Dynamic lung function; Omalizumab.

Thorax

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. 2022 Nov 24;thoraxjnl-2022-218724.

doi: 10.1136/thorax-2022-218724. Online ahead of print.

Mortality in non-exacerbating COPD: a longitudinal analysis of UK primary care data

Alexandra Lenoir[1,2], Hannah Whittaker[3], Alicia Gayle[3,4], Debbie Jarvis[3], Jennifer K Quint[5]

Affiliations expand

- PMID: 36423926

- DOI: 10.1136/thorax-2022-218724

Abstract

Introduction: Non-exacerbating patients with chronic obstructive pulmonary disease (COPD) are a less studied phenotype. We investigated clinical characteristics, mortality rates and causes of death among non-exacerbating compared with exacerbating patients with COPD.

Methods: We used data from the Clinical Practice Research Datalink, Hospital Episode Statistics and Office for National Statistics between 1 January 2004 and 31 December 2018. Ever smokers with a COPD diagnosis with minimum 3 years of baseline information were included. We compared overall using Cox regression and cause-specific mortality rates using competing risk analysis, adjusted for age, sex, deprivation, smoking status, body mass index, GOLD stage and comorbidities. Causes of death were identified using International Classification of Diseases-10 codes.

Results: Among 67 516 patients, 17.3% did not exacerbate during the 3-year baseline period. Mean follow-up was 4 years. Non-exacerbators were more likely to be male (63.3% vs 52.4%, p<0.001) and less often had a history of asthma (33.9% vs 43.6%, p<0.001) or FEV_1<50% predicted (23.7 vs 31.8%) compared with exacerbators. Adjusted HR for overall mortality in non-exacerbators compared with exacerbators was 0.62 (95% CI 0.56 to 0.70) in the first year of follow-up and 0.87 (95% CI 0.83 to 0.91) thereafter. Non-exacerbating patients with COPD died less of respiratory causes than exacerbators (29.2% vs 40.3%) and more of malignancies (29.4% vs 23.4%) and cardiovascular diseases (26.2% vs 22.9%). HRs for malignant and circulatory causes of death were increased after the first year of follow-up.

Discussion: In this primary care cohort, non-exacerbators showed distinct clinical characteristics and lower mortality rates. Non-exacerbators were equally likely to die of respiratory, malignant or cardiovascular diseases.

Keywords: COPD epidemiology; COPD exacerbations.

Conflict of interest statement

Competing interests: None declared.

Thorax

. 2022 Nov 23;thorax-2022-219591.

doi: 10.1136/thorax-2022-219591. Online ahead of print.

Rebound in asthma exacerbations following relaxation of COVID-19 restrictions: a longitudinal population-based study (COVIDENCE UK)

Florence Tydeman[1], Paul E Pfeffer[2,3], Giulia Vivaldi[1,4], Hayley Holt[1,4], Mohammad Talaei[4], David Jolliffe[1,4], Gwyneth Davies[5,6], Ronan A Lyons[5], Christopher Griffiths[4,7], Frank Kee[8], Aziz Sheikh[9,10], Seif O Shaheen[4], Adrian R Martineau[11,3,7]

Affiliations expand

- PMID: 36423925

- DOI: 10.1136/thorax-2022-219591

Abstract

Background: The imposition of restrictions on social mixing early in the COVID-19 pandemic was followed by a reduction in asthma exacerbations in multiple settings internationally. Temporal trends in social mixing, incident acute respiratory infections (ARI) and asthma exacerbations following relaxation of COVID-19 restrictions have not yet been described.

Methods: We conducted a population-based longitudinal study in 2312 UK adults with asthma between November 2020 and April 2022. Details of face covering use, social mixing, incident ARI and severe asthma exacerbations were collected via monthly online questionnaires. Temporal changes in these parameters were visualised using Poisson generalised additive models. Multilevel logistic regression was used to test for associations between incident ARI and risk of asthma exacerbations, adjusting for potential confounders.

Results: Relaxation of COVID-19 restrictions from April 2021 coincided with reduced face covering use ($p<0.001$), increased frequency of indoor visits to public places and other households ($p<0.001$) and rising incidence of COVID-19 ($p<0.001$), non-COVID-19 ARI ($p<0.001$) and severe asthma exacerbations ($p=0.007$). Incident non-COVID-19 ARI associated independently with increased risk of asthma exacerbation (adjusted OR 5.75, 95% CI 4.75 to 6.97) as did incident COVID-19, both prior to emergence of the omicron variant of SARS-CoV-2 (5.89, 3.45 to 10.04) and subsequently (5.69, 3.89 to 8.31).

Conclusions: Relaxation of COVID-19 restrictions coincided with decreased face covering use, increased social mixing and a rebound in ARI and asthma exacerbations. Associations between incident ARI and risk of severe asthma exacerbation were similar for non-COVID-19 ARI and COVID-19, both before and after emergence of the SARS-CoV-2 omicron variant.

Study registration number: NCT04330599.

Keywords: Asthma; COVID-19.

Conflict of interest statement

Competing interests: RAL declares membership of the Welsh Government COVID19 Technical Advisory Group. AS is a member of the Scottish Government Chief Medical Officer's COVID-19 Advisory Group and its Standing Committee on Pandemics. He is also a member of the UK Government's NERVTAG's Risk Stratification Subgroup. All other authors declare that they have no competing interests.

Editorial

Eur Respir J

. 2022 Nov 24;60(5):2201748.

doi: 10.1183/13993003.01748-2022. Print 2022 Nov.

Plasma cells: a feasible therapeutic target in pulmonary fibrosis?

Amanda T Goodwin[1], Paul W Noble[2], Amanda L Tatler[3]

Affiliations expand

- PMID: 36423920

- DOI: 10.1183/13993003.01748-2022

No abstract available

Conflict of interest statement

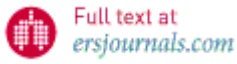
Conflict of interest: A.T. Goodwin has received research funding from an Asthma + Lung UK Malcolm Weallens Pulmonary Fibrosis grant and a Medical Research Council clinical training fellowship, in addition to conference travel grants from the British Association for Lung Research and the British Thoracic Society. P.W. Noble sits on the scientific advisory boards of Pliant Therapeutics and Lasson Therapeutics; he has received prior honoraria payments from Boehringer Ingelheim and Genentech/Roche and owns stocks in Pliant Therapeutics. A.L. Tatler is a co-investigator on an MRC Programme Grant and a Cystic Fibrosis Foundation project grant; additionally, she acts as a consultant to Pliant

Therapeutics and Accession Therapeutics; she has received honoraria from the Universities of Edinburgh, Southampton and Hull (in the past three years) for PhD examination services and speaker fees from the Australasian Rare Lung Disease Conference in 2021.

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS



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J Allergy Clin Immunol Pract

. 2022 Nov 21;S2213-2198(22)01203-X.

doi: 10.1016/j.jaip.2022.11.009. Online ahead of print.

Quantitative and qualitative methods of evaluating response to biologics in severe asthma patients: results from a real-world study

Miguel Estravís[1], Jacqueline Pérez-Pazos[2], Maria J Martin[3], Jacinto Ramos-González[4], María Gil-Melcón[5], Cristina Martín-García[6], Asunción García-Sánchez[7], Catalina Sanz[8], Ignacio Dávila[9]

Affiliations expand

- PMID: 36423868

- DOI: 10.1016/j.jaip.2022.11.009

No abstract available

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ELSEVIER FULL-TEXT ARTICLE

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Crit Rev Clin Lab Sci

. 2022 Nov 24;1-18.

doi: 10.1080/10408363.2022.2140329. Online ahead of print.

Metabolomics of asthma, COPD, and asthma–COPD overlap: an overview

Sanjukta Dasgupta[1], Nilanjana Ghosh[1], Parthasarathi Bhattacharyya[2], Sushmita Roy Chowdhury[3], Koel Chaudhury[1]

Affiliations expand

- PMID: 36420874

- DOI: 10.1080/10408363.2022.2140329

Abstract

The two common progressive lung diseases, asthma and chronic obstructive pulmonary disease (COPD), are the leading causes of morbidity and mortality worldwide. Asthma-COPD overlap, referred to as ACO, is another complex pulmonary disease that manifests itself with features of both asthma and COPD. The disease has no clear diagnostic or therapeutic guidelines, thereby making both diagnosis and treatment challenging. Though a number of studies on ACO have been documented, gaps in knowledge regarding the

pathophysiologic mechanism of this disorder exist. Addressing this issue is an urgent need for improved diagnostic and therapeutic management of the disease. Metabolomics, an increasingly popular technique, reveals the pathogenesis of complex diseases and holds promise in biomarker discovery. This comprehensive narrative review, comprising 99 original research articles in the last five years (2017-2022), summarizes the scientific advances in terms of metabolic alterations in patients with asthma, COPD, and ACO. The analytical tools, nuclear magnetic resonance (NMR), gas chromatography-mass spectrometry (GC-MS), and liquid chromatography-mass spectrometry (LC-MS), commonly used to study the expression of the metabolome, are discussed. Challenges frequently encountered during metabolite identification and quality assessment are highlighted. Bridging the gap between phenotype and metabotype is envisioned in the future.

Keywords: COPD; Metabolomics; NMR; asthma; asthma-COPD overlap; mass spectrometry.

J Investig Allergol Clin Immunol

. 2022 Nov 22;0.

doi: 10.18176/jiaci.0872. Online ahead of print.

Early effectivity of dupilumab in patients with t2 severe asthma: a prospective real-life study

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

Affiliations expand

- PMID: 36420744

- DOI: 10.18176/jiaci.0872

No abstract available

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

Proceed to details

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J Investig Allergol Clin Immunol

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. 2022 Nov 22;0.

doi: 10.18176/jiaci.0871. Online ahead of print.

Prevalence, T2-biomarkers and cost of severe asthma in the era of biologics: The BRAVO-1 study

C Domingo[1,2], A Sicras-Mainar[3], A Sicras-Navarro[3], A Sogo[1,3], R M Mirapeix[4], C Engroba[5]

Affiliations expand

- PMID: 36420740

- DOI: 10.18176/jiaci.0871

Abstract

Background and objectives: The last decade has seen a new era of classifications of asthma pathophysiology which have changed the treatment options available. To update the figures of prevalence of T2 asthma, comorbidities, biomarker characterization and costs of severe asthma in patients≥12-years-old adapted to this new situation.

Methods: Retroprospective, observational, nationwide study using a top-down approach. Data were obtained from the BIG-PAC®, an electronic medical record database of 1.7 million patients in Spain. Patients≥12-years-old who had received medical care during the period 2016-2017 and diagnosed with asthma at least one year prior to the index date were included and followed for one year.

Results: Prevalence of asthma was 5.5%. Of these patients, asthma was severe in 3.031 (7.7%), 81.2% of whom presented T2 asthma. Among severe asthma patients, 64·1% were uncontrolled, 31.2% were Oral corticosteroids-dependent (37% in the uncontrolled severe asthma group) and only 3.8% were on biologics. The most common T2 comorbidities were allergic rhinitis (66·1%), atopic dermatitis (29·1%) and chronic rhinositis with nasal polyps (14.6%). Mortality rates in the total and the uncontrolled severe asthma groups were 4.2% and 5.5% respectively. The total annual costs per patient with severe asthma were 5.890€ (uncontrolled) and 2.841€ (controlled).

Conclusions: In the era of biologics, most severe asthma patients present T2 asthma. Despite the availability of new treatments, the rates of uncontrolled and oral corticosteroids-dependent patients with severe asthma remain high, but biologics still underused. The costs of uncontrolled severe asthma are twice as high as those of controlled severe asthma.

Keywords: Asthma comorbidities; Asthma costs; Asthma prevalence; Severe asthma; Type 2 asthma; Uncontrolled asthma.

Review

J Investig Allergol Clin Immunol

. 2022 Nov 24;0.

doi: 10.18176/jiaci.0878. Online ahead of print.

Asthma exacerbations: the genes behind the scenes

E Herrera-Luis[1], E Forno[2], J C Celedón[3], M Pino-Yanes[1,3,4]

Affiliations expand

- PMID: 36420738

- DOI: 10.18176/jiaci.0878

Abstract

The clinical and socioeconomic burden of asthma exacerbations (AEs) represents a major public health problem. In the last four years, there has been an increase in ethnic diversity in candidate-gene and genome-wide association studies (GWAS) of AEs, which in the latter case has led to the identification of novel genes and underlying pathobiological processes. Pharmacogenomics, admixture mapping analyses, and the combination of multiple "omic" layers have contributed to prioritizing genomic regions of interest and/or understanding the functional consequences of genetic variation. Despite this, the field still lags behind the genomics of asthma, where a vast compendium of genetic approaches has been used (e.g., gene-environment interactions, next-generation sequencing, or polygenic risk scores). Furthermore, the roles of the DNA methylome and histone modifications in AEs have been scarcely investigated, and microRNA findings remain to be validated in independent studies. Likewise, the most recent transcriptomic studies highlight the importance of host-airway microbiome interaction in the modulation of AEs risk. Leveraging -omics and deep-phenotyping data from sub-types or homogenous subgroups of patients will be crucial to overcome the inherent heterogeneity of AEs, and boost the identification of potential therapeutic targets and the implementation of precision medicine in clinical practice for AEs.

Keywords: Asthma exacerbations; Epigenetics; Genomics; Transcriptomics.

J Asthma

. 2022 Nov 23;1-14.

doi: 10.1080/02770903.2022.2152351. Online ahead of print.

Obesity-related pediatric asthma: relationships between pulmonary function and clinical outcomes

Sheena Starr[1], Matthew Wysocki[2], Jesenya D DeLeon[2], Gabriella Silverstein[1], Kimberly Arcoleo[3], Deepa Rastogi[2], Jonathan M Feldman[1,2]

Affiliations expand

- PMID: 36420526

- DOI: 10.1080/02770903.2022.2152351

Abstract

Objective: We hypothesized that children with obesity-related asthma would have worse self-reported asthma control, report an increased number of asthma symptoms and have lower FEV_1/FVC associated with worse clinical asthma outcomes compared to children with asthma only.

Methods: Cross sectional analyses examined two hundred and eighteen (obesity-related asthma = 109, asthma only = 109) children, ages 7-15 that were recruited from clinics and hospitals within the Bronx, NY. Pulmonary function was assessed by forced expiratory volume in the first second (percent predicted FEV_1) and the ratio of FEV_1 to the forced vital capacity of the lungs (FEV_1/FVC). Structural equation modeling examined if pulmonary function was associated with asthma control and clinical outcomes between groups.

Results: Lower percent predicted FEV_1 was associated with increased hospitalizations (p =.03) and oral steroid bursts in the past 12 months (p =.03) in the obesity-related

asthma group but not in the asthma only group. FEV_1/FVC was also associated with increased hospitalizations (p = .02) and oral steroid bursts (p = .008) in the obesity-related asthma group but not the asthma only group. Lower FEV_1/FVC was associated with the number of asthma symptoms endorsed in the asthma only group but not in the obesity-related asthma group. Percent predicted FEV_1 and FEV_1/FVC was not associated with asthma control in either group.

Conclusions: Pulmonary function was associated with oral steroid bursts and hospitalizations but not self-reported asthma control, suggesting the importance of incorporating measures of pulmonary function into the treatment of pediatric obesity-related asthma. (*word count: 246*).

Keywords: : Asthma Control; Body Mass Index; Health Disparities; Healthcare Utilization; Oral Steroids.

Multicenter Study

BMC Prim Care

. 2022 Nov 22;23(1):295.

doi: 10.1186/s12875-022-01904-7.

Appropriateness of antibiotic treatment of acute respiratory tract infections in Tunisian primary care and emergency

departments: a multicenter cross-sectional study

Khaoula Bel Haj Ali[1,2], Adel Sekma[1,2], Selma Messous[2], Imen Trabelsi[2], Jalel Ben Youssef[3], Hamida Maghraoui[4], Rabie Razgallah[5], Adel Walha[1,2], Mohamed Habib Grissa[1,2], Kaouthar Beltaief[1,2], Zied Mezgar[6], Ahmed Coubantini[7], Wahid Bouida[1,2], Mohamed Amine Msolli[1,2], Riadh Boukef[2,8], Hamdi Boubaker[1,2], Semir Nouira[9,10]

Affiliations expand

- PMID: 36418965

- DOI: 10.1186/s12875-022-01904-7

Abstract

Background: Little is known about the pattern and appropriateness of antibiotic prescriptions in patients with acute respiratory tract infections (ARTIs).

Objective: Describe the antibiotics used to treat ARTIs in Tunisian primary care offices and emergency departments (EDs), and assess the appropriateness of their use.

Methods: It was a prospective multicenter cross-sectional observational clinical study conducted at 63 primary care offices and 6 EDS during a period of 8 months. Appropriateness of antibiotic prescription was evaluated by trained physicians using the medication appropriateness index (MAI). The MAI ratings generated a weighted score of 0 to 18 with higher scores indicating low appropriateness. The study was conducted in accordance with the Declaration of Helsinki and national and institutional standards. The study was approved by the Ethics committee of Monastir Medical Faculty.

Results: From the 12,880 patients screened we included 9886 patients. The mean age was 47.4, and 55.4% were men. The most frequent diagnosis of ARTI was were acute bronchitis (45.3%), COPD exacerbation (16.3%), tonsillitis (14.6%), rhinopharyngitis (12.2%) and sinusitis (11.5%). The most prescribed classes of antibiotics were penicillins (58.3%), fluoroquinolones (17.6%), and macrolides (16.9%). Antibiotic therapy was inappropriate in 75.5% of patients of whom 65.2% had bronchitis. 65% of patients had one or more antibiotic prescribing inappropriateness criteria as assessed by the MAI. The most frequently rated criteria were with expensiveness (75.8%) and indication (40%). Amoxicillin-clavulanic acid and levofloxacin were the most inappropriately prescribed antibiotics. History of cardiac ischemia ([OR] 3.66; 95% [CI] 2.17-10.26; $p < 0.001$), asthma ([OR] 3.29, 95% [CI] 1.77-6.13; $p < 0.001$), diabetes ([OR] 2.09, 95% [CI] 1.54-2.97; $p = 0.003$), history of COPD ([OR] 1.75, 95% [CI] 1.43-2.15; $p < 0.001$) and age > 65 years (Odds Ratio [OR] 1.35,

95% confidence interval [CI] 1.16-1.58; p < 0.001) were associated with a higher likelihood of inappropriate prescribing.

Conclusion: Our findings indicate a high inappropriate use of antibiotics in ARTIs treated in in primary care and EDs. This was mostly related to antibiotic prescription in acute bronchitis and overuse of expensive broad spectrum antibiotics. Future interventions to improve antibiotic prescribing in primary care and EDs is needed.

Trial registration: the trial is registered at Clinicaltrials.gov registry (NCT04482231).

Keywords: Acute respiratory tract infections; Antibiotics; Appropriateness.

- 34 references

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances, Associated dataexpand

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Review

Pulm Ther

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. 2022 Nov 22.

doi: 10.1007/s41030-022-00203-x. Online ahead of print.

Asthma Exacerbations and Glucagon-Like Peptide-1 Receptor Agonists: a Review of the Current Evidence

Alan G Kaplan[1], James W Kim[2]

Affiliations expand

- PMID: 36417159

- DOI: 10.1007/s41030-022-00203-x

Abstract

Asthma is a chronic inflammatory disease involving multiple mediators and cytokines. While our current treatments have shown significant therapeutic benefits, there still appear to be some patients who, despite aggressive therapy, good adherence, and inhaler technique, continue to have exacerbations. Exacerbations lead to loss of lung function, exposure to systemic corticosteroids, effects on quality of life, and even mortality. There is a large number of glucagon-like peptide-1 (GLP-1) receptors in the lung even compared with other organs, and studies have shown evidence of reduced exacerbations in asthmatics treated with GLP-1 receptor agonists (GLP-1 RA). While weight loss may affect lung mechanics, evidence of inflammatory changes has been revealed that could explain this relationship. This article will review the data behind these conjectures and outline potential clinical utility and the need for future studies to truly understand the role of GLP-1 receptors in the lung.

Keywords: Asthma; Inflammation; Obesity; Phenotype; Weight loss.

Plain language summary

Obesity is a common issue and a comorbidity that negatively impacts asthma outcomes. Weight loss can improve asthma outcomes, and evidence shows that a particular type of therapy currently indicated for diabetes that assists in weight loss and targets receptors that are abundant in the lungs will outperform other therapies. GLP-1-receptor agonists may particularly help overweight patients who have asthma to control the disease as best as possible and prevent exacerbations. Video Abstract.

- 105 references

SUPPLEMENTARY INFO

Publication typesexpand

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Cite

J Am Heart Assoc

. 2022 Nov 23;e026644.

doi: 10.1161/JAHA.122.026644. Online ahead of print.

Persistent Asthma Is Associated With Carotid Plaque in MESA

Matthew C Tattersall[1], Alison S Dasiewicz[2], Robyn L McClelland[3], Nizar N Jarjour[4], Claudia E Korcarz[1], Carol C Mitchell[1], Stephane Esnault[4], Moyses Szklo[5], James H Stein[1]

Affiliations expand

- PMID: 36416156

- DOI: 10.1161/JAHA.122.026644

Free article

Abstract

Background Asthma and atherosclerotic cardiovascular disease share an underlying inflammatory pathophysiology. We hypothesized that persistent asthma is associated with carotid plaque burden, a strong predictor of atherosclerotic cardiovascular disease events. Methods and Results The MESA (Multi-Ethnic Study of Atherosclerosis) enrolled adults free of known atherosclerotic cardiovascular disease at baseline. Subtype of asthma was determined at examination 1. Persistent asthma was defined as asthma requiring use of controller medications, and intermittent asthma was defined as asthma without controller medications. B-mode carotid ultrasound was performed to detect carotid plaques (total plaque score [TPS], range 0-12). Multivariable regression modeling with robust variances evaluated the association of asthma subtype and carotid plaque burden. The 5029 participants were a mean (SD) age of 61.6 (10.0) years (53% were women, 26% were Black individuals, 23% were Hispanic individuals, and 12% were Chinese individuals). Carotid plaque was present in 50.5% of participants without asthma (TPS, 1.29 [1.80]), 49.5% of

participants with intermittent asthma (TPS, 1.25 [1.76]), and 67% of participants with persistent asthma (TPS, 2.08 [2.35]) ($P \leq 0.003$). Participants with persistent asthma had higher interleukin-6 (1.89 [1.61] pg/mL) than participants without asthma (1.52 [1.21] pg/mL; $P=0.02$). In fully adjusted models, persistent asthma was associated with carotid plaque presence (odds ratio, 1.83 [95% confidence interval, 1.21-2.76]; $P<0.001$) and TPS ($\beta=0.66$; $P<0.01$), without attenuation after adjustment for baseline interleukin-6 ($P=0.02$) or CRP (C-reactive protein) ($P=0.01$). Conclusions Participants with persistent asthma had higher carotid plaque burden and higher levels of inflammatory biomarkers, compared with participants without asthma. Adjustment for baseline inflammatory biomarkers did not attenuate the association between carotid plaque and asthma subtype, highlighting the increased atherosclerotic cardiovascular disease risk among those with persistent asthma may be multifactorial.

Keywords: asthma; carotid plaque; inflammation.

ERJ Open Res

. 2022 Nov 21;8(4):00235-2022.

doi: 10.1183/23120541.00235-2022. eCollection 2022 Oct.

Long-term follow-up after bronchoscopic lung volume reduction valve treatment for emphysema

Jorine E Hartman[1,2], Karin Klooster[1,2], T David Koster[1,2], Nick H T Ten Hacken[1,2], Marlies van Dijk[1,2], Dirk-Jan Slebos[1,2]

Affiliations expand

- PMID: 36415650

- PMCID: PMC9677246

- DOI: 10.1183/23120541.00235-2022

Free PMC article

Abstract

Background: Multiple studies have shown that patients with severe emphysema can significantly benefit from bronchoscopic lung volume reduction endobronchial valve (EBV) treatment up to 1 year after treatment. However, hardly any data exist on longer term follow-up, especially on quality of life. Our aim was to investigate long-term follow-up after EBV treatment up to 3 years including quality of life in a real-life routine clinical setting.

Methods: We retrospectively included patients who underwent EBV treatment in our hospital in the Netherlands at least 3 years prior. Patients were invited for annual visits to our hospital, and spirometry, body plethysmography, 6-min walk distance (6MWD) test and St George's Respiratory Questionnaire (SGRQ) were performed during these visits.

Results: At 1-, 2- and 3-year follow-up, data were available from 189, 146 and 112 patients, respectively. Forced expiratory volume in 1 s, residual volume and SGRQ total score significantly improved up to 3 years after treatment compared with baseline, and 6MWD up to 2 years after treatment. In general, the magnitude of improvements gradually decreased over time.

Conclusions: Our results show that patients can benefit at least up to 3 years after EBV treatment. For the first time we found that patients can also benefit in terms of quality of life in the long term, which is an important outcome for this group of patients with end-stage COPD.

Conflict of interest statement

Conflict of interest: K. Klooster reports payment or honoraria for lectures from PulmonX and Boehringer. D-J. Slebos reports grants or contracts from PulmonX, PneumRx/BTG/Boston Scientific, FreeFlowMedical and Nuvaira (principal investigator and advisor, to institution); consulting fees, payment or honoraria for lectures, support for attending meetings and/or travel, and receipt of study material and medical devices to

institution from PulmonX, PneumRx and Nuvaira. All other authors have nothing to disclose.

- 30 references
- 2 figures

J Asthma

. 2022 Nov 22;1-14.

doi: 10.1080/02770903.2022.2151466. Online ahead of print.

Asthma is Associated with Bullying Victimization in Rural Adolescents

April J Ancheta[1], Phillippe B Cunningham[2], Jianfang Liu[3], Jennifer S Powell[2], Colleen A Halliday[2], Jean-Marie Bruzzese[3]

Affiliations expand

- PMID: 36413706

- DOI: 10.1080/02770903.2022.2151466

Abstract

Objective: We characterized bullying among rural adolescents and examined the association between asthma and bullying victimization.

Methods: Participants (*N* = 1905; 44.5% Black) were students attending rural high schools who were screened for a randomized trial to address uncontrolled asthma. Screening questions asked students about asthma diagnosis and symptoms, bullying victimization, and demographic characteristics. Logistic regression analyses with school as a fixed effect were employed to examine the extent to which demographic factors, asthma diagnosis, asthma status (i.e., current asthma, no asthma, possible undiagnosed asthma), and among those with current asthma, asthma severity, were associated with bullying victimization. Sensitivity analyses using bullying frequency as the outcome were also conducted.

Results: 26.0% reported being bullied. Younger age and self-identifying as White were associated with increased risk of bullying victimization. Compared to those with no asthma, those with current asthma or possible undiagnosed asthma were at increased risk for bullying victimization (adjusted odds ratio [AOR] = 2.46; 95% confidence interval (CI)=1.76-3.46 and AOR = 2.42; 95% CI = 1.87-3.14, respectively). Among those with current asthma, persistent symptoms increased the risk for bullying victimization (AOR = 2.59; 95% CI = 1.45-4.71). Similar results were obtained with sensitivity analyses.

Conclusions: In a large rural community cohort, asthma was associated with bullying victimization. Findings suggest that rural students with asthma, with or without diagnosis, could benefit from schools creating inclusive environments that reduce victimization based on this medical condition. School administrators should foster environments that are accepting of all students' abilities and statuses and healthcare providers can provide proper asthma management education to these adolescents.

Keywords: asthma; bullying; chronic condition; non-urban; victimization; youth.

Chem Res Toxicol

. 2022 Nov 22.

doi: 10.1021/acs.chemrestox.2c00266. Online ahead of print.

New Method to Biomonitor Workers Exposed to 1,6-Hexamethylene Diisocyanate

Gabriele Sabbioni[1,2], Shirley A Pugh[1]

Affiliations expand

- PMID: 36413493

- DOI: 10.1021/acs.chemrestox.2c00266

Abstract

Isocyanates such as 1,6-hexamethylene diisocyanate (HDI), 4,4'-methylenediphenyl diisocyanate, and toluene diisocyanate are highly reactive compounds that have a variety of commercial applications, including manufacturing polyurethane foam, elastomers, paints, adhesives, coatings, insecticides, and many other products. Their primary route of occupational exposure is through inhalation. Due to their high chemical reactivity, they are toxic and have adverse effects at the cellular and subcellular levels, leading to irritative and immunological reactions associated with lung disease. High concentrations of isocyanates are strong respiratory irritants. Bronchial sensitization and asthma are among the major adverse clinical reactions associated with low-level chronic exposure to isocyanates. Albumin adducts have been linked to the mechanism of occupational asthma caused by isocyanates. Isocyanates react *in vivo* with albumin, which is recognized by the immune system. Albumin adducts of isocyanates trigger immune responses and are probably the antigenic basis for isocyanate asthma. Sensitization to isocyanates is the main pathway for adverse health effects. Therefore, markers for the biologically effective dose such as albumin adducts of HDI are needed. A new isocyanate adduct of HDI with lysine—*N*$^{\varepsilon}$-[(6-amino-hexyl-amino)carbonyl]-lysine (HDI-Lys)—was synthesized and characterized by ^{1}H-NMR, ^{13}C-NMR, and mass spectrometry (MS). Appropriate internal standards—HDI-Lys-4,4'-5,5'-d_4 (HDI-d_4-Lys) and *N*$^{\varepsilon}$-[(7-amino-heptyl-amino)carbonyl]-lysine (Hep-Lys)—were synthesized to establish a LC-MS/MS method for the analysis of HDI adducts in *in vitro* modified albumin and in workers. The presence of HDI-Lys was found after pronase digestion of albumin and confirmed by two independent chromatographic approaches: with a C8 reversed-phase column and with a hydrophilic interaction liquid chromatography column. Quantification was performed with positive electrospray ionization (ESI)-MS. The adduct peak found *in vivo* was confirmed with the less sensitive negative ESI-MS. In summary, these are new compounds and methods to determine isocyanate-specific adducts with albumin in workers exposed to HDI.

Curr Opin Allergy Clin Immunol

. 2022 Nov 23.

doi: 10.1097/ACI.0000000000000875. Online ahead of print.

Biologics for eosinophilic granulomatosis with polyangiitis

Marco Caminati[1], Matteo Maule[1], Federica Bello[2], Giacomo Emmi[3]

Affiliations expand

- PMID: 36413432

- DOI: 10.1097/ACI.0000000000000875

Abstract

Purpose of review: The link between severe asthma and eosinophilic granulomatosis with polyangiitis (EGPA) in terms of pathophysiological background, clinical manifestations and disease evolution has leaded to investigate the relevance of anti T2 monoclonal antibodies licensed for severe asthma patients as a treatment option for EGPA. The present review aimed to provide un update on EGPA pathophysiology and to critically summarize the most robust evidence coming from trials and real-life setting on the use of anti T2 biologics in EGPA patients.

Recent findings: Mepolizumab, an anti-interleukin-5 monoclonal antibody, is the only biologic drug targeting eosinophilic inflammation currently approved for EGPA treatment at the dose of 300 mg/4 weeks. Its use is restricted by the American College of Rheumatology guidelines to specific diseases phases and severity grades. However the most appropriate mepolizumab positioning and dose is still under investigation in the real life practice, which is providing an increasing amount of evidence confirming its efficacy, alone or in combination with other options in different disease stages. The relevance of other monoclonal antibodies interfering with T2 inflammation, including omalizumab and benralizumab, is under investigation but the evidence is still scarce.

Summary: Taking into account the suboptimal medium-long term safety profile of conventional EGPA treatments, the opportunity of selectively targeting eosinophilic inflammation certainly represents a revolutionary approach. However, further real-word evidence is required to effectively position the new treatments in the light of the disease complexity, including different immunological drivers, and individual variability.

- 43 references

Am J Respir Crit Care Med

. 2022 Nov 22.

doi: 10.1164/rccm.202211-2074ED. Online ahead of print.

The Intersection Between Autoimmunity, Macrophage

Dysfunction, Endotype and Exacerbations in Severe Asthma

Ryan C Murphy[1], Eric D Morrell[2], Teal S Hallstrand[3]

Affiliations expand

- PMID: 36413362

- DOI: 10.1164/rccm.202211-2074ED

No abstract available

Keywords: asthma; autoimmunity; endotype; exacerbation; macrophage.

BMJ Open

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. 2022 Nov 21;12(11):e066029.

doi: 10.1136/bmjopen-2022-066029.

Respiratory diseases in survivors of adult cancer compared with the general population: a systematic review protocol

Kirsty Andresen[1], Helena Carreira[2], Jennifer K Quint[3], Krishnan Bhaskaran[2]

Affiliations expand

- PMID: 36410834

- PMCID: PMC9680143

- DOI: 10.1136/bmjopen-2022-066029

Free PMC article

Abstract

Introduction: There is concern that survivors of adult cancers may be at increased risk of respiratory infections and of exacerbations of pre-existing respiratory conditions. Considering the high prevalence of respiratory disease in the general population, increased respiratory disease risk in survivors of adult cancers could translate into an important impact on morbidity and mortality. The aim of this systematic review is to summarise and assess the quality of all studies comparing respiratory outcomes between adult cancer survivors and individuals with no history of cancer.

Methods and analysis: This systematic literature review will be conducted using Medline, EMBASE and Cochrane. We will include cohort or case-control studies that provide a comparative estimate of the risk of a respiratory disease of interest in survivors of adult cancer against a comparator cohort of cancer-free individuals. No geographic, time or language restrictions will be applied. We will assess the risk of bias using the Scottish Intercollegiate Guidelines Network methodology checklists. Results will be summarised by type of respiratory outcome, cancer type and cancer survivorship definition. If sufficient numbers of homogeneous studies are found, summary measures of association will be calculated using random effects meta-analysis models.

Ethics and dissemination: Ethical approval is not applicable to our study. The results will be used to identify evidence gaps and priorities for future research to understand respiratory morbidity in survivors of adult cancers and identify possible mitigation strategies. Results from this review will be disseminated to clinical audiences and submitted to a peer-reviewed journal when completed.

Trial registration number: This study has been registered on PROSPERO (registration number: CRD42022311557).

Keywords: Chronic airways disease; EPIDEMIOLOGY; asthma; chronic airways disease; epidemiology; oncology; respiratory infections.

Conflict of interest statement

Competing interests: None declared.

- 10 references

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

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Comment

Int J Tuberc Lung Dis

-
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. 2022 Nov 25;26(1):1-104.

The Global Asthma Report 2022

No authors listed

- PMID: 36303302

No abstract available

Comment on

- A randomised controlled trial to evaluate a medication monitoring system for TB treatment.
  Acosta J, Flores P, Alarcón M, Grande-Ortiz M, Moreno-Exebio L, Puyen ZM. Int J Tuberc Lung Dis. 2022 Jan 1;26(1):44-49. doi: 10.5588/ijtld.21.0373. PMID: 34969428 **Free PMC article.** Clinical Trial.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

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Int J Tuberc Lung Dis

. 2022 Nov 25;26(1):86-87.

Asthma, Climate Change and Planetary Health

Arzu Yorgancioğlu, Zorana J Andersen, Kjeld Hansen, Omar Usmani, Neil Pearce, Kevin Mortimer, Achiri E Ndikum

- PMID: 36284434

No abstract available

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27

Int J Tuberc Lung Dis

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. 2022 Nov 25;26(1):29-31.

Global Asthma Management and Control

Luis García-Marcos, Chen-Yuan Chiang, Richard Silverwood, Innes Asher, Guy Marks, Kevin Mortimer, Philippa Ellwood, Eva Morales, Asma El-Sony

- PMID: 36284433

No abstract available

SUPPLEMENTARY INFO

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28

Int J Tuberc Lung Dis

. 2022 Nov 25;26(1):74-75.

Asthma in the Context of Other Chronic Respiratory Diseases in LMICs

Kevin Mortimer, Karen Bissell, Alvaro Cruz, Luis García-Marcos, Asma El Sony

- PMID: 36284430

No abstract available

SUPPLEMENTARY INFO

MeSH termsexpand

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29

Int J Tuberc Lung Dis

. 2022 Nov 25;26(1):32-35.

COVID-19 and Asthma

Chen-Yuan Chiang, Luis García-Marcos, Philippa Ellwood, Eamon Ellwood, Refiloe Masekela, Neil Pearce

- PMID: 36284428

No abstract available

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Int J Tuberc Lung Dis

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. 2022 Nov 25;26(1):14-15.

Asthma Network

Philippa Ellwood, Innes Asher, Karen Bissell, Chen-Yuan Chiang, Eamon Ellwood, Asma El Sony, Luis García-Marcos, Guy Marks, Refiloe Masekela, Eva Morales, Kevin Mortimer, Neil Pearce, David Strachan

- PMID: 36284425

No abstract available

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MeSH terms, Substancesexpand

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31

Int J Tuberc Lung Dis

. 2022 Nov 25;26(1):56-60.

Asthma in the European region

Luis García-Marcos

- PMID: 36284423

No abstract available

SUPPLEMENTARY INFO

MeSH termsexpand

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Int J Tuberc Lung Dis

. 2022 Nov 25;26(1):72-73.

New Approaches with Asthma Medicines

Chen-Yuan Chiang, Iain Crossingham, Asma El Sony, Rebecca Fortescue, Luis García-Marcos, Guy Marks, Refiloe Masekela, Helen Reddel

- PMID: 36284420

No abstract available

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Int J Tuberc Lung Dis

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. 2022 Nov 25;26(1):24-28.

Asthma Deaths

David Strachan, Charlotte Rutter, Eva Morales, Virginia Pérez Fernández, Kevin Mortimer

- PMID: 36284419

No abstract available

SUPPLEMENTARY INFO

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34

Int J Tuberc Lung Dis

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. 2022 Nov 25;26(1):20-23.

The Global Burden of Asthma

Charlotte Rutter, Richard Silverwood, Virginia Pérez Fernández, Neil Pearce, David Strachan, Kevin Mortimer, Maia Lesosky, Innes Asher, Philippa Ellwood, Chen-Yuan Chiang, Luis García-Marcos

- PMID: 36284412

No abstract available

SUPPLEMENTARY INFO

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Int J Tuberc Lung Dis

. 2022 Nov 25;26(1):43-47.

Asthma in the Region of the Americas

Blanca E Del-Río-Navarro

- PMID: 36284410

No abstract available

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MeSH termsexpand

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36

Int J Tuberc Lung Dis

. 2022 Nov 25;26(1):76-80.

Improving Access to Essential Asthma Medicines

Obianuju Ozoh

- PMID: 36284408

No abstract available

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

FULL TEXT LINKS

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37

Sci Total Environ

. 2022 Nov 25;849:157693.

doi: 10.1016/j.scitotenv.2022.157693. Epub 2022 Jul 28.

Long-term air pollution exposure, greenspace and health-related quality of life in the ECRHS study

Anne Boudier [1], Iana Markevych [2], Bénédicte Jacquemin [3], Michael J Abramson [4], Simone Accordini [5], Bertil Forsberg [6], Elaine Fuertes [7], Judith Garcia-Aymerich [8], Joachim Heinrich [9], Ane Johannessen [10], Bénédicte Leynaert [11], Isabelle Pin [12], Valérie Siroux [13]

Affiliations expand

- PMID: 35907524

- DOI: 10.1016/j.scitotenv.2022.157693

Abstract

Background: Associations of long-term exposure to air pollution and greenspace with health-related quality of life (HRQOL) are poorly studied and few studies have accounted for asthma-rhinitis status.

Objective: To assess the associations of air pollution and greenspace with HRQOL and whether asthma and/or rhinitis modify these associations.

Methods: The study was based on the participants in the second (2000-2002, n = 6542) and third (2011-2013, n = 3686) waves of the European Community Respiratory Health Survey (ECRHS) including 19 centres. The mean follow-up time was 11.3 years. HRQOL was assessed by the SF-36 Physical and Mental Component Summary scores (PCS and MCS). NO_2, $PM_{2.5}$ and PM_{10} annual concentrations were estimated at the residential address from existing land-use regression models. Greenspace around the residential address was estimated by the (i) mean of the Normalized Difference Vegetation Index (NDVI) and by the (ii) presence of green spaces within a 300 m buffer. Associations of each exposure variable with PCS and MCS were assessed by mixed linear regression models, accounting for the multicentre design and repeated data, and adjusting for potential confounders. Analyses were stratified by asthma-rhinitis status.

Results: The mean (SD) age of the ECRHS-II and III participants was 43 (7.1) and 54 (7.2) years, respectively, and 48 % were men. Higher NO_2, $PM_{2.5}$ and PM_{10} concentrations were associated with lower MCS (regression coefficients [95%CI] for one unit increase in the inter-quartile range of exposures were -0.69 [-1.23; -0.15], -1.79 [-2.88; -0.70], -1.80 [-2.98; -0.62] respectively). Higher NDVI and presence of forests were associated with higher MCS. No consistent associations were observed for PCS. Similar association patterns were observed regardless of asthma-rhinitis status.

Conclusion: European adults who resided at places with higher air pollution and lower greenspace were more likely to have lower mental component of HRQOL. Asthma or rhinitis status did not modify these associations.

Keywords: Asthma; Epidemiology; Greenness; NO(2); PM; Rhinitis; Well-being.

Conflict of interest statement

Declaration of competing interest MJA holds investigator initiated grants for unrelated research from Pfizer, Boehringer-Ingelheim, Sanofi and GSK. He has undertaken an unrelated consultancy for and received assistance with conference attendance from Sanofi. He has also received a speaker's fee from GSK.

- Cited by 1 article

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

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ELSEVIER FULL-TEXT ARTICLE

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Sci Total Environ

. 2022 Nov 20;848:157493.

doi: 10.1016/j.scitotenv.2022.157493. Epub 2022 Jul 22.

Associations between repeated measures of urinary phthalate metabolites and biomarkers of oxidative stress in a rural agricultural cohort of children with asthma

Ryan S Babadi[1], Anne M Riederer[2], Paul D Sampson[3], Sheela Sathyanarayana[4], Terrance J Kavanagh[5], Jennifer E Krenz[6], Syam S Andra[7], Seunghee Kim-Schulze[8], Karen L Jansen[9], Elizabeth Torres[10], Adriana Perez[11], Lisa R Younglove[12], Maria I Tchong-French[13], Catherine J Karr[14]

Affiliations expand

- PMID: 35878846

- DOI: 10.1016/j.scitotenv.2022.157493

Abstract

Phthalate exposure is widespread, and studies suggest an adverse relationship with asthma morbidity, including some support for oxidative stress as an underlying pathophysiological mechanism. Urinary phthalate metabolites have been associated with biomarkers of oxidative stress, but data are few in children diagnosed with asthma. We used participant data from the Home Air in Agriculture Pediatric Intervention Trial (HAPI) to examine longitudinal relationships between phthalates and oxidative stress in a cohort of Latino children with asthma residing in an agricultural community. We used linear mixed-effects models to estimate associations between 11 urinary phthalate metabolites (and one summed measure of di-2-ethylhexyl phthalate (DEHP) metabolites, ∑DEHP) and two urinary biomarkers of oxidative stress: a biomarker of lipid peroxidation via measure of 8-isoprostane and a biomarker of DNA/RNA oxidative damage via combined measure of 8-hydroxydeoxyguanosine (8-OHdG), 8-hydroxyguanosine (8-OHG), and 8-hydroxyguanine. Seventy-nine participants provided 281 observations. In covariate-adjusted models, we observed significant positive relationships between all phthalate metabolites and 8-isoprostane, effect sizes ranging from a 9.3 % (95 % CI: 4.2 %-14.7 %) increase in 8-isoprostane for each 100 % increase (i.e., doubling) of mono-(carboxy-isooctyl) phthalate (MCIOP), to a 21.0 % (95 % CI: 14.3 %-28.2 %) increase in 8-isoprostane for each doubling of mono-n-butyl phthalate (MNBP). For each doubling of mono-(carboxy-isononyl) phthalate (MCINP) and mono-ethyl phthalate (MEP), the DNA/RNA oxidative damage biomarker increased by 6.0 % (95 % CI: 0.2 %-12.2 %) and 6.5 % (95 % CI: 1.4 %-11.9 %), respectively. In conclusion, we provide unique data suggesting phthalate exposure is positively associated with oxidative stress in children with asthma. Our repeat measures provide novel identification of a consistent effect of phthalates on oxidative stress in children with asthma via lipid peroxidation. Confirmation in future studies of children with asthma is needed to enhance understanding of the role of phthalates in childhood asthma morbidity.

Keywords: Asthma; Children; DNA/RNA damage; Lipid peroxidation; Oxidative stress; Phthalate exposure.

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.

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

FULL TEXT LINKS

RHINITIS

1
BMC Med Genomics

. 2022 Nov 25;15(1):243.

doi: 10.1186/s12920-022-01389-4.

Genes related to allergen exposure in allergic rhinitis: a gene-chip-based study in a mouse model

Min Wang[1,2], Ying Li[1,2], Jun Yang[1,2], Xiangdong Wang[3,4,5], Luo Zhang[6,7,8,9]

Affiliations expand

- PMID: 36434595

- DOI: 10.1186/s12920-022-01389-4

Abstract

Background: The typical clinical symptoms of allergic rhinitis (AR) are known to be associated with allergen exposure; however, the underlying mechanisms are not fully understood. We wanted to gain a comprehensive view of the molecular mechanisms related to allergen exposure in a well-controlled mouse model of AR.

Methods: An OVA-induced AR model was developed. Two hours and 4 weeks after the last OVA challenge, AR symptoms and local immune responses were assessed. At the same time, differentially expressed genes (DEG) in nasal mucosa were identified by gene expression microarray and further analyzed by bioinformatics methods. Verification of DEG was done by quantitative RT-PCR and immunohistochemistry.

Results: The number of nasal rubbings and sneezes, serum OVA-specific IgE concentrations, and the number of neutrophils and eosinophils in the nasal mucosa were significantly increased at 2 h and decreased at 4 weeks after the last allergen challenge compared to controls. A total of 2119 DEG were identified, and their expression dynamics

were clustered into 8 profiles. Enriched functions in Profile 5, which had a similar trend to clinical features, were mainly related to inflammatory and immune response to environmental factors, eosinophils and neutrophils chemotaxis, and cell migration. Gene co-expression Network for genes from profile 5 identified BCL3, NFKB2, SOCS3, and CD53 having a higher degree. Profile 6 showed persistence of inflammatory and immune response at 4 weeks after the last allergen challenge. Olfactory and coagulation functions were enriched mainly in profiles with downward trends.

Conclusions: A wide range of genes with sequential cooperative action were identified to be associated with allergen exposure in AR. BCL3 may be the most vital in symptoms manifestation. Moreover, some inflammatory responses persisted for a period after allergen exposure, supporting a new treatment strategy of targeting inflammation out of season. This study may contribute to a better understanding of AR pathogenesis and provide potential therapeutic targets for AR patients.

Keywords: Allergen exposure; Allergic rhinitis; Microarray; Mouse model.

- 44 references

SUPPLEMENTARY INFO

Grant supportexpand

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Pulmonology

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. 2022 Nov 22;S2531-0437(22)00252-5.

doi: 10.1016/j.pulmoe.2022.10.005. Online ahead of print.

Identification by cluster analysis of patients with asthma and nasal

symptoms using the MASK-air® mHealth app

J Bousquet[1], B Sousa-Pinto[2], J M Anto[3], R Amaral[2], L Brussino[4], G W Canonica[5], A A Cruz[6], B Gemicioglu[7], T Haahtela[8], M Kupczyk[9], V Kvedariene[10], D E Larenas-Linnemann[11], R Louis[12], N Pham-Thi[13], F Puggioni[5], F S Regateiro[14], J Romantowski[15], J Sastre[16], N Scichilone[17], L Taborda-Barata[18], M T Ventura[19], I Agache[20], A Bedbrook[21], K C Bergmann[22], S Bosnic-Anticevich[23], M Bonini[24], L-P Boulet[25], G Brusselle[26], R Buhl[27], L Cecchi[28], D Charpin[29], C Chaves-Loureiro[30], W Czarlewski[31], F de Blay[32], P Devillier[33], G Joos[26], M Jutel[34], L Klimek[35], P Kuna[9], D Laune[36], J L Pech[37], M Makela[8], M Morais-Almeida[38], R Nadif[39], M Niedoszytko[15], K Ohta[40], N G Papadopoulos[41], A Papi[42], D R Yeverino[43], N Roche[44], A Sá-Sousa[2], B Samolinski[45], M H Shamji[46], A Sheikh[47], C Suppli Ulrik[48], O S Usmani[49], A Valiulis[50], O Vandenplas[51], A Yorgancioglu[52], T Zuberbier[22], J A Fonseca[2]

Affiliations expand

- PMID: 36428213

- DOI: 10.1016/j.pulmoe.2022.10.005

Abstract

Background: The self-reporting of asthma frequently leads to patient misidentification in epidemiological studies. Strategies combining the triangulation of data sources may help to improve the identification of people with asthma. We aimed to combine information from the self-reporting of asthma, medication use and symptoms to identify asthma patterns in the users of an mHealth app.

Methods: We studied MASK-air® users who reported their daily asthma symptoms (assessed by a 0-100 visual analogue scale - "VAS Asthma") at least three times (either in three different months or in any period). K-means cluster analysis methods were applied to identify asthma patterns based on: (i) whether the user self-reported asthma; (ii) whether the user reported asthma medication use and (iii) VAS asthma. Clusters were compared by the number of medications used, VAS asthma levels and Control of Asthma and Allergic Rhinitis Test (CARAT) levels.

Findings: We assessed a total of 8,075 MASK-air® users. The main clustering approach resulted in the identification of seven groups. These groups were interpreted as probable: (i) severe/uncontrolled asthma despite treatment (11.9-16.1% of MASK-air® users); (ii) treated and partly-controlled asthma (6.3-9.7%); (iii) treated and controlled asthma (4.6-5.5%); (iv) untreated uncontrolled asthma (18.2-20.5%); (v) untreated partly-controlled asthma (10.1-10.7%); (vi) untreated controlled asthma (6.7-8.5%) and (vii) no evidence of

asthma (33.0-40.2%). This classification was validated in a study of 192 patients enrolled by physicians.

Interpretation: We identified seven profiles based on the probability of having asthma and on its level of control. mHealth tools are hypothesis-generating and complement classical epidemiological approaches in identifying patients with asthma.

Keywords: Asthma; Cluster analysis; Control; Rhinitis; Treatment.

Immunology

. 2022 Nov 24.

doi: 10.1111/imm.13613. Online ahead of print.

Exploration of the Efficacy of Anti-Immunoglobulin E Monoclonal Antibodies in the Treatment of Allergic Asthma

Xue-Jiao Qian[1], Xiao-Tian Hu[2], Ping Jiang[1]

Affiliations expand

- PMID: 36424828

- DOI: 10.1111/imm.13613

Abstract

Objective: The present study aims to evaluate the efficacy of an anti-immunoglobulin E monoclonal antibody (omalizumab) in the treatment of allergic asthma (AS).

Methods: A total of 34 patients with moderate-to-severe bronchial asthma admitted to the Respiratory Department of Tianjin First Central Hospital between September 2019 and September 2021 were enrolled in this study. The patients were treated with omalizumab in addition to conventional inhaled corticosteroids + long-acting β2 agonist treatment. The therapeutic effects before and after the addition of omalizumab were compared.

Results: The lung function indicators (ratio of the forced expiratory volume [FEV] in the first second to the forced vital capacity, FEV in the first second, forced expiratory flow [FEF] at 50% of vital capacity, FEF at 75% of vital capacity, and maximum mid-expiratory flow), fractionated exhaled nitric oxide values, asthma control test scores, rhinoconjunctivitis quality of life questionnaire scores, and urticaria control test scores were significantly different after 4 months of the regular administration of omalizumab ($P < 0.05$) compared with before administration.

Conclusion: The use of omalizumab had a significant efficacy in the treatment of patients with AS, and the effects were obvious in the subgroups of patients with a combination of AS and atopic dermatitis, chronic urticaria, and allergic rhinitis. These results indicate that the treatment is worthy of clinical promotion.

Keywords: Allergic asthma; Allergic rhinitis; Atopic dermatitis; Chronic urticaria; Dynamic lung function; Omalizumab.

J Investig Allergol Clin Immunol

. 2022 Nov 22;0.

doi: 10.18176/jiaci.0871. Online ahead of print.

Prevalence, T2-biomarkers and cost of severe asthma in the era of biologics: The BRAVO-1 study

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Affiliations expand

- PMID: 36420740

- DOI: 10.18176/jiaci.0871

Abstract

Background and objectives: The last decade has seen a new era of classifications of asthma pathophysiology which have changed the treatment options available. To update the figures of prevalence of T2 asthma, comorbidities, biomarker characterization and costs of severe asthma in patients≥12-years-old adapted to this new situation.

Methods: Retroprospective, observational, nationwide study using a top-down approach. Data were obtained from the BIG-PAC®, an electronic medical record database of 1.7 million patients in Spain. Patients≥12-years-old who had received medical care during the period 2016-2017 and diagnosed with asthma at least one year prior to the index date were included and followed for one year.

Results: Prevalence of asthma was 5.5%. Of these patients, asthma was severe in 3.031 (7.7%), 81.2% of whom presented T2 asthma. Among severe asthma patients, 64·1% were uncontrolled, 31.2% were Oral corticosteroids-dependent (37% in the uncontrolled severe asthma group) and only 3.8% were on biologics. The most common T2 comorbidities were allergic rhinitis (66·1%), atopic dermatitis (29·1%) and chronic rhinositis with nasal polyps (14.6%). Mortality rates in the total and the uncontrolled severe asthma groups were 4.2% and 5.5% respectively. The total annual costs per patient with severe asthma were 5.890€ (uncontrolled) and 2.841€ (controlled).

Conclusions: In the era of biologics, most severe asthma patients present T2 asthma. Despite the availability of new treatments, the rates of uncontrolled and oral corticosteroids-dependent patients with severe asthma remain high, but biologics still underused. The costs of uncontrolled severe asthma are twice as high as those of controlled severe asthma.

Keywords: Asthma comorbidities; Asthma costs; Asthma prevalence; Severe asthma; Type 2 asthma; Uncontrolled asthma.

Review

Allergy

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. 2022 Nov 24.

doi: 10.1111/all.15593. Online ahead of print.

Recent developments in the immunopathology of COVID-19

Huan-Ping Zhang[1], Yuan-Li Sun[2], Yan-Fen Wang[3], Duygu Yazici[4], Dilek Azkur[5], Ismail Ogulur[4], Ahmet Kursat Azkur[6], Zhao-Wei Yang[7], Xiao-Xue Chen[1], Ai-Zhi Zhang[8], Jia-Qian Hu[2], Guang-Hui Liu[2], Mübeccel Akdis[4], Cezmi A Akdis[4], Ya-Dong Gao[2]

Affiliations expand

- PMID: 36420736

- DOI: 10.1111/all.15593

Abstract

There has been an important change in the clinical characteristics and immune profile of Coronavirus disease 2019 (COVID-19) patients during the pandemic thanks to the extensive vaccination programs. Here, we highlight recent studies on COVID-19, from the clinical and immunological characteristics to the protective and risk factors for severity and mortality of COVID-19. The efficacy of the COVID-19 vaccines and potential allergic

reactions after administration are also discussed. The occurrence of new variants of concerns such as Omicron BA.2, BA.4 and BA.5 and the global administration of COVID-19 vaccines have changed the clinical scenario of COVID-19. Multisystem inflammatory syndrome in children (MIS-C) may cause severe and heterogeneous disease but with a lower mortality rate. Perturbations in immunity of T cells, B cells, and mast cells, as well as autoantibodies and metabolic reprogramming may contribute to the long-term symptoms of COVID-19. There is conflicting evidence about whether atopic diseases, such as allergic asthma and rhinitis, are associated with a lower susceptibility and better outcomes of COVID-19. At the beginning of pandemic, the European Academy of Allergy and Clinical Immunology (EAACI) developed guidelines that provided timely information for the management of allergic diseases and preventive measures to reduce transmission in the allergic clinics. The global distribution of COVID-19 vaccines and emerging severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) variants with reduced pathogenic potential dramatically decreased the morbidity, severity, and mortality of COVID-19. Nevertheless, breakthrough infection remains a challenge for disease control. Hypersensitivity reactions (HSR) to COVID-19 vaccines are low compared to other vaccines, and these were addressed in EAACI statements that provided indications for the management of allergic reactions, including anaphylaxis to COVID-19 vaccines. We have gained a depth knowledge and experience in the over 2 years since the start of the pandemic, and yet a full eradication of SARS-CoV-2 is not on the horizon. Novel strategies are warranted to prevent severe disease in high-risk groups, the development of MIS-C and long COVID-19.

Keywords: COVID-19; allergy; angiotensin-converting enzyme 2; immunity; vaccine.

. 2022 Nov 22.

doi: 10.1111/all.15588. Online ahead of print.

GALTectomy increases the risk of allergic rhinitis: A nationwide population-based cohort study

Tzu-Min Lin[#1,2], Hui-Ching Hsu[1,3], Yu-Chuan Shen[3], Yu-Sheng Chang[#1,4], Wei-Sheng Chen[5], Hsiang-Yen Lee[2], Ching-Kuei Chang[2], Tzu-Tung Kuo[6], Shu-Chuan Chen[7], Jin-Hua Chen[#6,8], Chi-Ching Chang[#1,2]

Affiliations expand

- PMID: 36412075

- DOI: 10.1111/all.15588

No abstract available

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

BRONCHIECTASIS

1
Chest

. 2022 Nov 23;S0012-3692(22)04192-7.

doi: 10.1016/j.chest.2022.11.022. Online ahead of print.

Motile ciliary disorders of the nasal epithelium in adults with bronchiectasis

Ri-Lan Zhang[1], Cui-Xia Pan[1], Chun-Li Tang[1], Lai-Jian Cen[1], Xiao-Xian Zhang[1], Yan Huang[2], Zhen-Hong Lin[1], Hui-Min Li[1], Xiao-Fen Zhang[1], Lei Wang[3], Wei-Jie Guan[4], De Yun Wang[5]

Affiliations expand

- PMID: 36435264

- DOI: 10.1016/j.chest.2022.11.022

Abstract

Background: Motile ciliary disorder (MCD) has been implicated in chronic inflammatory airway diseases such as asthma and chronic obstructive pulmonary disease.

Research question: What is the characteristic of MCD of the nasal epithelium and the association with disease severity and inflammatory endotypes in adults with bronchiectasis?

Study designs and methods: In this observational study, we recruited 167 patients with bronchiectasis and 39 healthy controls who underwent brushing of nasal epithelium. A subgroup of patients underwent bronchoscopy for bronchial epithelium sampling (n=13), elective surgery for bronchial epithelium biopsy (n=18), and blood sampling for next-generation sequencing (n=37). We characterized systemic and airway inflammatory endotypes in bronchiectasis. We conducted immunofluorescence assays to profile ultrastructural [dynein axonemal heavy chain 5 (DNAH5), dynein intermediate chain 1 (DNAI1), radial spoke head protein 9 (RSPH9)] and ciliogenesis marker expression (Ezrin).

Results: MCD was present in 89.8% of patients with bronchiectasis, 67.6% had secondary MCD and 16.2% had primary plus secondary MCD. Compared with healthy controls, patients with bronchiectasis yielded abnormal staining patterns of DNAH5, DNAI1 and RSPH9 (but not ezrin), which were more prominent in moderate-to-severe bronchiectasis. MCD pattern scores were largely consistent between upper and lower airways, and between large-to-medium and small airways in bronchiectasis. Co-existing nasal diseases and asthma did not significantly confound nasal ciliary ultrastructural marker expression. The propensity of MCD was unaffected by the airway or systemic inflammatory endotypes.

MCD, particularly ultrastructural abnormality, was notable in patients with mild bronchiectasis who had blood or sputum eosinophilia.

Interpretation: Nasal ciliary markers profiling provides complimentary information to clinical endotyping of bronchiectasis.

Keywords: Ultrastructure; airway inflammation; cilia; genetic testing; immunofluorescence.

Arch Microbiol

. 2022 Nov 24;204(12):728.

doi: 10.1007/s00203-022-03345-3.

Anti-Aspergillus fumigatus IgG in patients with bronchiectasis and its relationship with clinical outcome

Mariana Rodrigues Trápaga[1,2], Vanice Rodrigues Poester[1,2], Karine Ortiz Sanchotene[2,3], Aryse Martins Melo[4], Jéssica Louise Benelli[1,2,3], Rossana Patricia Basso[2,3], Gabriel Baracy Klafke[1], Daniela Fernandes Ramos[2,5], Cristina Veríssimo[4], Raquel Sabino[4,6], David A Stevens[7,8], Melissa Orzechowski Xavier[9,10]

Affiliations expand

- PMID: 36434134

- DOI: 10.1007/s00203-022-03345-3

Abstract

Aspergillosis is a mycosis, most commonly affecting the airways. This mycosis can worsen the clinical condition of patients with concurrent lung diseases. We assayed for the presence of serum anti-A. fumigatus IgG in bronchiectasis patients from a tertiary hospital in south Brazil and evaluated the relationship with clinical outcome. Thirty-one patients with bronchiectasis, without cystic fibrosis, were included. Clinical and epidemiological data were collected from all participants. Positive serological tests were detected in 13% (4/31) of the patients. The mortality rate for the year following the assay was, in the seropositive group, 75% (3/4), whereas in the seronegative group, 15% (4/27). An illustrative case is also shown and discussed. Our study highlights the diagnostic challenge and the possible impact of Aspergillus infection on these patients, indicating the necessity of more and larger investigations in the field.

Keywords: Aspergillosis; Aspergillus IgG; ELISA; Fungal disease; Immunodiffusion.

Allergol Immunopathol (Madr)

. 2022 Nov 22;50(S Pt 3):1-9.

doi: 10.15586/aei.v50iSP3.764. eCollection 2022.

The importance of aeroallergen sensitivity in children with cystic fibrosis

Özge Atay[1], Suna Asilsoy[2], Seda Şirin Köse[3], Gizem Atakul[2], Serdar Al[2], Özge Kangallı Boyacioğlu[2], Nevin Uzuner[2], Özkan Karaman[2]

Affiliations expand

- PMID: 36433750

- DOI: 10.15586/aei.v50iSP3.764

Abstract

Background: Cystic fibrosis (CF) is an inherited autosomal recessive disorder that causes chronic airway disease. In addition to genetic factors, environmental factors may affect the clinical phenotype of CF. In this study, the presence of aeroallergen sensitivity in our patients with CF and its effects on clinical findings are evaluated.

Methods: In this study, patients included were diagnosed with CF and followed in the Pediatric Respiratory and Allergy Clinic of the Faculty of Medicine, Dokuz Eylul University, Izmir, Turkey. Demographic characteristics, clinical and laboratory findings, skin prick test (SPT) results, and modified Shwachman-Kulczycki (MSK) scores of the patients were evaluated.

Results: We evaluated 51 patients with CF with a median age of 10 (6-18) years. The mean MSK score of the patients was 72.54±11.50, and the mean predictive value of forced expiratory volume (FEV1) in the initial (1st) second was 80.43±19.50. According to SPT, aeroallergen sensitivity was detected in 17 (33.3%) patients. The prevalence of bacterial colonization and bronchiectasis was higher, and MSK scores were lower in *Aspergillus fumigatus* (AF)-sensitive patients ($P \leq 0.01$). However, no similar difference was found in other allergen sensitivities. MSK scores ($P = 0.001$) and predictive FEV1 values ($P = 0.005$) of 25 (49%) patients with bacterial colonization were significantly lower than those without colonization.

Conclusion: Aeroallergen sensitivity was detected in approximately one-third of CF patients. Although it has been emphasized in studies that environmental factors may have an impact on lung functions and clinical conditions in CF, the effect of allergens other than AF sensitivity may be less important compared to other environmental factors, such as the presence of bacterial colonization.

Keywords: Aspergillus fumigatus; asthma; atopy; children; cystic fibrosis.

Conflict of interest statement

The authors declare no potential conflicts of interest with respect to research, authorship, and/or publication of this article.

- 37 references

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BMJ Case Rep

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. 2022 Nov 25;15(11):e252658.

doi: 10.1136/bcr-2022-252658.

ABPA sans asthma: an entity to remember

Avinash Anil Nair[1], Leena Robinson Vimala[2], Divya Chandran[2], Richa Gupta[3]

Affiliations expand

- PMID: 36428029

- DOI: 10.1136/bcr-2022-252658

Abstract

A male patient in his 20s presented with a cough and a small volume of haemoptysis that lasted a year. He had no other constitutional symptoms and a respiratory examination was suggestive of a consolidation. A chronic infection, such as tuberculosis, was suspected. The routine evaluation showed peripheral eosinophilia with raised serum total IgE. Sputum examination for tuberculosis was negative; hence, a high-resolution CT of the thorax was performed, which revealed bilateral bronchiectasis with high-attenuation mucus plugging. The imaging and blood profiles were in favour of allergic bronchopulmonary aspergillosis, but there was no history suggestive of asthma, and the pulmonary function test was normal. The patient underwent a skin prick test and an allergen-specific IgE test for *Aspergillus fumigatus*, and both were positive. His bronchoalveolar lavage cultures also

grew *A. fumigatus*, and he responded well to antifungal therapy. This case illustrates the presentation of a rare entity-allergic bronchopulmonary aspergillosis sans asthma.

Keywords: Allergy, asthma; Asthma; Respiratory medicine; Respiratory system; TB and other respiratory infections.

Conflict of interest statement

Competing interests: None declared.

Review

Pediatr Pulmonol

. 2022 Nov 25.

doi: 10.1002/ppul.26227. Online ahead of print.

Pediatric Pulmonology 2021 Year in Review: Rare and Diffuse Lung Disease

Jonathan Popler[1], Timothy J Vece[2], Deborah R Liptzin[3,4,5], William A Gower[2]

Affiliations expand

- PMID: 36426677

- DOI: 10.1002/ppul.26227

Abstract

The field of rare and diffuse pediatric lung disease is experiencing rapid progress as diagnostic and therapeutic options continue to expand. In this annual review, we discuss manuscripts published in Pediatric Pulmonology in 2021 in (1) children's interstitial and diffuse lung disease, (2) congenital airway and lung malformations, and (3) non-cystic fibrosis bronchiectasis including primary ciliary dyskinesia. These include case reports, descriptive cohorts, trials of therapies, animal model studies, and review articles. The results are put into the context of other literature in the field. Each furthers the field in important ways, while also highlighting the continued need for further studies. This article is protected by copyright. All rights reserved.

Keywords: bronchiectasis; congenital abnormalities; interstitial lung disease; primary ciliary dyskinesia.

Clin Respir J

. 2022 Nov 20.

doi: 10.1111/crj.13563. Online ahead of print.

'Teach me how to look after myself': What people with bronchiectasis want from education in a pulmonary rehabilitation setting

Annemarie L Lee[1,2,3,4], Rebecca Smith[1,5], Lucy Burr[6,7,8], Anne B Chang[6,9], Chien-Li Holmes-Liew[6], Paul King[6], Peter Middleton[6], Lucy Morgan[6,10,11], Daniel Smith[6], Rachel Thomson[6,8,12], Grant Waterer[6], Conroy Wong[6,13], Rachael McAleer[14]

Affiliations expand

- PMID: 36404576

- DOI: 10.1111/crj.13563

Abstract

Introduction: Pulmonary rehabilitation is recommended for people with bronchiectasis. Various education topics are included in these programmes, but the content is largely guided by the needs of people with other respiratory conditions.

Objectives: With the education topics applicable to people with bronchiectasis unclear, we aimed to explore the perspective of adults with this condition on relevant educational topics in a pulmonary rehabilitation context.

Methods: Participants from the Australian Bronchiectasis Registry were invited to undertake a semi-structured interview. Interview transcripts were coded independently, with themes established by consensus (two researchers).

Results: Twenty-one people participated. The major themes were greater clarity on the underlying cause of bronchiectasis and prognosis. Most sought knowledge about self-management strategies and treatments to address extra-pulmonary symptoms. Participants requested more information on physiotherapy options and the role of exercise and physical activity outside of pulmonary rehabilitation. Preferences were mixed for the education delivery model.

Conclusions: We have identified unmet educational topics of interest for people with bronchiectasis. Our study provides a framework for education topics desired by adults with bronchiectasis within a pulmonary rehabilitation setting. The topics identified will guide development of an education curriculum for pulmonary rehabilitation that is more fit-for-purpose for people with bronchiectasis.

Keywords: bronchiectasis; education; pulmonary rehabilitation; self-management.

- 37 references

CHRONIC COUGH

1
Review

Int J Environ Res Public Health

. 2022 Nov 21;19(22):15418.

doi: 10.3390/ijerph192215418.

Effect of Gestational Pesticide Exposure on the Child's Respiratory System: A Narrative Review

María Isabel Ventura-Miranda[1], Isabel María Fernández-Medina[1], Eulalia Guillén-Romera[2], Rocío Ortíz-Amo[3], María Dolores Ruíz-Fernández[1]

Affiliations expand

- PMID: 36430137

- DOI: 10.3390/ijerph192215418

Abstract

Background: In recent years, concern has arisen worldwide about the potential adverse effects that could result from early-life exposure to pesticides. Asthma, bronchitis, and persistent cough in children have been linked to gestational exposure to pesticides. The respiratory effects of gestational exposure to pesticides are controversial. The aim of this study was to determine the relationship between pesticide exposure in pregnant women and its effect on the respiratory system of their children.

Methods: A narrative review was carried out by means of a search in the main databases.

Results: Findings of studies confirmed the effects of pesticides on the child's health. These substances cross the placenta and become transmitters of exposure to the individual at the most sensitive stage of her development.

Conclusions: Chronic exposure to pesticides in fetuses is associated with chronic respiratory symptoms and disease.

Keywords: congenital anomalies; neonate; pesticides; pregnant women; respiratory tract diseases.

Conflict of interest statement

The authors declare no conflict of interest.

SUPPLEMENTARY INFO

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Int J Environ Res Public Health

. 2022 Nov 21;19(22):15366.

doi: 10.3390/ijerph192215366.

Social Inequalities: Do They Matter in Asthma, Bronchitis, and Respiratory Symptoms in Children?

Agata Wypych-Ślusarska[1], Karolina Krupa-Kotara[1], Ewa Niewiadomska[2]

Affiliations expand

- PMID: 36430088

- DOI: 10.3390/ijerph192215366

Abstract

Background: Social inequalities (e.g., poverty and low level of education) generate inequalities in health. **Aim:** The aim of the study was to determine the relationships between indicators of social inequalities and the frequency of respiratory symptoms, asthma, and bronchitis in children. **Material and Methods:** In 2019, an epidemiological cross-sectional study on 3237 students from elementary schools in Silesia Voivodships (South Poland) was conducted. The students' parents completed a questionnaire based on the International Study on Asthma and Allergies in Childhood (ISAAC). Social inequalities in the children's families were determined according to parents' education and professional status (working vs. unemployed), self-assessment of economic status, and housing conditions. To determine the influence of social factors on the occurrence of asthma, bronchitis, and respiratory symptoms, the odds ratio (OR) was calculated. **Results:** Children living in apartments with traces of mold had a higher risk of developing asthma (OR = 1.5, 95%CI: 1.17-1.96; p = 0.002) or bronchitis (OR = 1.4, 95%CI: 1.13-1.72; p = 0.002), wheezing attacks at nights (OR = 1.4; 95%CI: 1.01-1.93), wheezy in the last 12 months (OR = 1.6; 95%CI:1.24-2.08; p < 0.001), and chronic cough (OR = 1.9; 95%CI: 1.49-2.46; p < 0.001). Exposure to environmental tobacco smoke (ETS) was associated with higher risk of cough (OR = 1.5 95%CI: 1.22-1.96; p < 0.001) and dyspnea in the last 12 months (OR = 1.4; 95%CI: 1.04-2.00; p = 0.02). Low socioeconomic status (SES) was associated with increased risk of chronic cough (OR = 1.5; 95%CI: 1.09-2.03; p = 0.009) and increased risk of wheezy in the last 12 months (OR = 1.4; 95%CI: 1.06-1.97; p = 0.008). Asthma and bronchitis were not dependent on parents' education or professional status. **Conclusions:** Social inequalities have significant impacts on the occurrence of respiratory symptoms, bronchitis, and asthma in children. Interventions aimed at preventing bronchitis and childhood asthma should also focus on social health determinants.

Keywords: bronchial asthma; children; environmental factors; health inequality; respiratory symptoms; social determinants of health (SDH).

. 2022 Nov 21;22(1):429.

doi: 10.1186/s12890-022-02180-y.

Clinical characteristics and drug utilisation patterns in patients with chronic cough: a retrospective cohort study using a Japanese claims database

Yoko Arai[1], Kotoba Okuyama[1], Yoshie Onishi[2], Jonathan Schelfhout[3], Shigeru Tokita[1], Takekazu Kubo[4]

Affiliations expand

- PMID: 36411418

- DOI: 10.1186/s12890-022-02180-y

Free article

Abstract

Background: Although unmet medical needs for better care of patients with chronic cough exist in Japan, epidemiological information about these patients and their treatments is very limited.

Objectives: To describe patient characteristics, underlying cough-related diseases and drug utilisation patterns in patients with chronic cough, and their changes over time.

Methods: This large retrospective claims database study enrolled subjects with chronic cough, identified either by a specific diagnostic cough code for chronic cough (Population 1) or by multiple cough-related diagnostic codes spanning > 8 weeks (Population 2). Within Population 2, patients with each of the three most frequent diagnostic cough codes were analysed as subgroups. Patient characteristics, underlying cough-related diseases and utilisation patterns for drugs used for cough were documented at the index date, during the 6-month pre-index period and during the 12-month post-index period.

Results: 6,038 subjects were enrolled in the cohort (Population 1: N = 3,500; Population 2: N = 2,538). The mean age was 43.7 ± 12.2 years and 61.8% were women. The largest

cough diagnosis subgroups in Population 2 were 'other coughs' (N = 1,444), 'cough-variant asthma' (N = 1,026) and 'atopic/allergic cough' (N = 105). At the index date, the most frequent underlying cough-related diseases were allergic rhinitis/nasal inflammation (N = 3,132; 51.9%), asthma (N = 2,517; 41.7%) and gastro-esophageal reflux disease (N = 829; 13.7%). At the index date, 4,860 participants (80.5%) were prescribed at least one cough-related treatment. 194 participants (4.0% of medication users) were prescribed central antitussives alone, principally in Population 1, and 2,331 (48.0%) were prescribed expectorants. Other frequently prescribed medications were antiallergic drugs (N = 2,588; 53.3%), antimicrobials (N = 1,627; 34.4%) and inhaled corticosteroids with long-acting beta-agonists (N = 1,404; 28.9%). Over time, cough diagnoses tended to be lost, with only 470 participants in Population 1 retaining a diagnostic code for chronic cough one year later. The frequency of underlying cough-related diseases was stable over time.

Conclusions: Patients in this cohort with chronic cough are most frequently identified by a diagnostic cough code for chronic cough, followed by codes for other coughs, cough-variant asthma and atopic cough. Chronic cough frequently presents with an underlying cough-related disease, most frequently allergic rhinitis/nasal inflammation, asthma or GERD. Medication prescription for the underlying cough-related diseases was generally appropriate.

Keywords: Allergic rhinitis; Asthma; Atopic cough; Central antitussives; Chronic cough; Cough; Cough-variant asthma; GERD; Nasal inflammation.

- 25 references

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS