LIBRA JOURNAL CLUB
11-18 December 2023

Buone Feste 2023-2024

Cari Colleghi del LIBRA Journal Club:

Questo sarà l'ultimo bollettino prima di Natale, Capodanno ed Epifania. Considerata la cadenza

Settimanale Voi siete le persone con le quali intrattengo più frequente corrispondenza e spero quindi

possiate accettarmi un po' come un amico. Quindi, porgo a Voi e ai Vostri cari i miei più sinceri Auguri

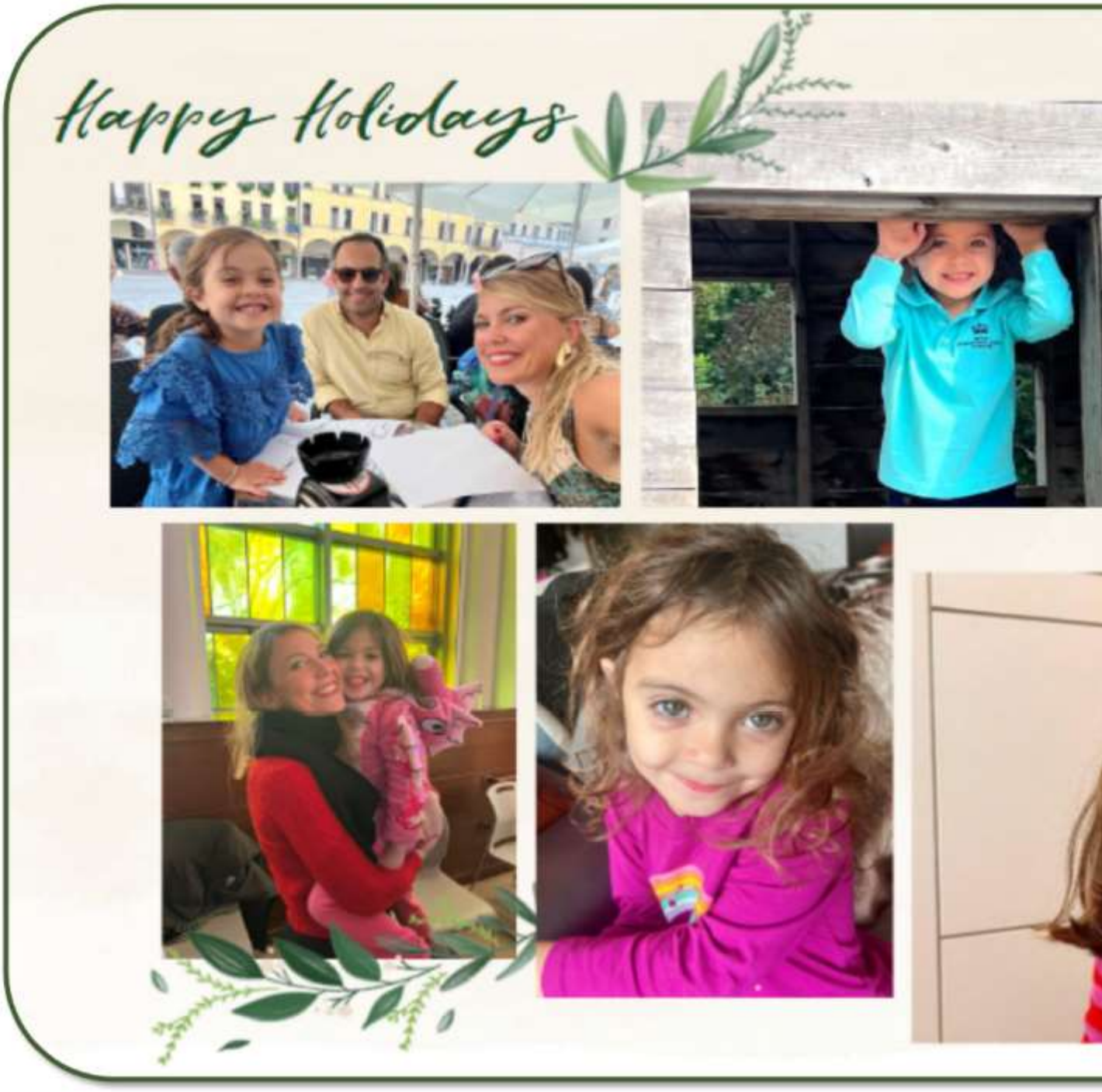
di Buone Feste e Felice Anno Nuovo, accompagnati da un biglietto che contiene le foto dei miei "gioielli"

bostoniani, Giulia, Omid, e della mia adorata nipotina Emma.

Con stima, simpatia e affetto,

Leo Fabbri

PS. Considerato il successo dell'ultimo Meeting LIBRA tenutosi a Firenze nei giorni 4 e 5 Dicembre 2023, abbiamo deciso di ripeterlo sempre al Mediterraneo di Firenze, nei giorni 2 e 3 Dicembre 2024



Our legal office confirmed that articles NOT OPEN ACCESS cannot be distributed to the members of the list. Thus, we will transmit only the titles of articles.
ABSTRACTS of almost all these articles are available from PubMed, and full papers can be obtained through your institutions' library.

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

1

Review

J Evid Based Med

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. 2023 Dec 16.

doi: 10.1111/jebm.12570. Online ahead of print.

Efficacy and safety of pharmacological intervention for smoking cessation in smokers with diseases: A systematic review and network meta-analysis

Xin Xing[1 2 3], Xue Shang[4], Xinxin Deng[1 2 5], Kangle Guo[6], E Fenfen[1 2 5], Liying Zhou[1 2 5], Yongsheng Wang[1 2 5], Chaoqun Yang[1 2 5], Kehu Yang[1 2], Xiuxia Li[5]

Affiliations expand

- PMID: 38102895

- DOI: 10.1111/jebm.12570

Abstract

Objective: To investigate the most effective and best-tolerated drugs for treating diseased smokers.

Methods: Eight databases were searched for randomized controlled trials (RCTs) involving different pharmacological interventions for smoking cessation in disease patients (January

2023). Network meta-analysis was performed using STATA 15.1 software. The Cochrane Risk of Bias Tool assessed the risk of bias, and confidence in evidence was assessed using CINeMA.

Results: A total of 60 RCTs involving 13,009 patients of 12 disease categories were included. All trials reported 13 interventions, resulting in 78 comparisons. Network meta-analysis showed that varenicline (OR = 2.30, 95% CI (1.77, 3.00)) and bupropion (OR = 1.65, 95% CI (1.29, 2.11)) showed favorable abstinence effects compared to placebo in the cardiovascular disease population. Nicotine replacement therapy (NRT) had better withdrawal advantages than placebo (OR = 11.18, 95% CI (2.25, 55.54)) in the chronic obstructive pulmonary disease (COPD) population. Some combination treatments showed better results than monotherapy, such as bupropion + NRT was superior to bupropion (OR = 8.45, 95% CI (1.84, 38.89)) and NRT (OR = 4.98, 95% CI (1.25, 19.78)) in mental illness population. The final surface under the cumulative ranking curve indicated that bupropion + NRT achieved the best smoking cessation effect. Overall confidence in the evidence was low. In a comparison of drugs, the results showed that bupropion + NRT had the best safety.

Conclusions: Most interventions show the benefit of quitting smoking compared with placebo, including monotherapy and combination therapy. Moreover, varenicline or bupropion combined with NRT is superior to some monotherapies.

Keywords: network meta-analysis; pharmacotherapy; smoking cessation; systematic review.

- 50 references

SUPPLEMENTARY INFO

Publication types, Grants and fundingexpand

FULL TEXT LINKS

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Cite

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Beijing Da Xue Xue Bao Yi Xue Ban

. 2023 Dec 18;55(6):1074-1081.

[Epidemiology and hospitalization costs analysis of female inpatients with acute exacerbation of chronic obstructive pulmonary disease in Beijing from 2013 to 2020]

[Article in Chinese]

Zi Kai Wang[1], Jia Li Mo[2], Meng Zhang[1], Ji Ping Liao[1]

Affiliations expand

- PMID: 38101792

Abstract

Objective: To study epidemiological characteristics and hospitalization costs of female inpatients with acute exacerbation of chronic obstructive pulmonary disease (AECOPD) in Beijing.

Methods: A retrospective study was conducted to analyze electronic hospitalization summary reports of female inpatients with AECOPD in Beijing from 2013 to 2020. Clinical characteristics (age distribution and comorbidities), epidemiological characteristics (temporal and spatial distribution characteristics), hospi-talization times and costs of patients were described.

Results: A total of 57 911 subjects in 166 hospitals were included in this study, with a mean age of (78.84±8.59) years and the highest number of patients aged 80-89 years (49.06%), followed by patients aged 70-79 years (31.08%), and the lowest number of patients under 50 years (0.41%). The proportions of patients with coronary heart disease, hypertension and heart failure were 30.60%, 30.52% and 26.54% respectively. The median number of daily hospitalizations during the study period was 18 (*IQR*: 16). The number of daily hospitalizations for AECOPD showed an overall growth trend over the eight years from 2013 to 2020, starting to increase significantly in 2015 and continuing to increase until 2019, then followed by a decline in 2020. The proportion of inpatient admissions was

higher in winter and spring (54.09%) than that in summer and autumn (45.91%). The top three districts in terms of the proportion of total inpatient admissions were Xicheng district (14.18%), Chaoyang district (14.12%) and Fengtai district (13.47%). The density of inpatients was relatively high in the western regions, central urban areas and northeastern regions of the city, while the density of inpatients was relatively low in the near suburbs. The median number of hospital days for female patients with AECOPD was 12 days, and the median hospital costs was CNY 20 648.37. Patients from urban areas had longer hospitalization times and higher hospitalization costs than those from suburban areas (P < 0.001). Western medicine expenses accounted for the largest proportion of total hospital expenses (33.32%). During the study period, hospitalization costs exhibited an overall pattern of initial growth, followed by subsequent decline, eventually stabilizing. The differences in hospitalization costs among the patients with different comorbidities were significant.

Conclusion: Female hospitalized patients with AECOPD in Beijing were older than 70 years, often complicated by cardiovascular disease. AECOPD occurred mainly in winter and spring, with regional differences. The hospitalization costs were closely associated with the patients' age, comorbidities, and the geographicical region.

Keywords: Acute exacerbation of chronic obstructive pulmonary disease; Epidemiology; Female; Hospitalization costs.

3

Crit Care Med

. 2023 Dec 15.

doi: 10.1097/CCM.0000000000006073. Online ahead of print.

Prediction of Long-Term Physical, Mental, and Cognitive Problems Following Critical Illness: Development and External Validation of the PROSPECT Prediction Model

Dries van Sleeuwen[1,2], Marieke Zegers[2], Jordache Ramjith[3], Juliette K Cruijsberg[4], Koen S Simons[5], Daniëlle van Bommel[6], Dominique Burgers-Bonthuis[7], Julia Koeter[8], Laurens L A Bisschops[2], Inge Janssen[9], Thijs C D Rettig[10], Johannes G van der Hoeven[2], Floris A van de Laar[1], Mark van den Boogaard[2]

Affiliations expand

- PMID: 38099732

- DOI: 10.1097/CCM.0000000000006073

Abstract

Objectives: ICU survivors often suffer from long-lasting physical, mental, and cognitive health problems after hospital discharge. As several interventions that treat or prevent these problems already start during ICU stay, patients at high risk should be identified early. This study aimed to develop a model for early prediction of post-ICU health problems within 48 hours after ICU admission.

Design: Prospective cohort study in seven Dutch ICUs.

Setting/patients: ICU patients older than 16 years and admitted for greater than or equal to 12 hours between July 2016 and March 2020.

Interventions: None.

Measurements and main results: Outcomes were physical problems (fatigue or ≥ 3 new physical symptoms), mental problems (anxiety, depression, or post-traumatic stress disorder), and cognitive impairment. Patient record data and questionnaire data were collected at ICU admission, and after 3 and 12 months, of 2,476 patients. Several models predicting physical, mental, or cognitive problems and a composite score at 3 and 12 months were developed using variables collected within 48 hours after ICU admission. Based on performance and clinical feasibility, a model, PROSPECT, predicting post-ICU health problems at 3 months was chosen, including the predictors of chronic obstructive

pulmonary disease, admission type, expected length of ICU stay greater than or equal to 2 days, and preadmission anxiety and fatigue. Internal validation using bootstrapping on data of the largest hospital (n = 1,244) yielded a C-statistic of 0.73 (95% CI, 0.70-0.76). External validation was performed on data (n = 864) from the other six hospitals with a C-statistic of 0.77 (95% CI, 0.73-0.80).

Conclusions: The developed and externally validated PROSPECT model can be used within 48 hours after ICU admission for identifying patients with an increased risk of post-ICU problems 3 months after ICU admission. Timely preventive interventions starting during ICU admission and follow-up care can prevent or mitigate post-ICU problems in these high-risk patients.

Conflict of interest statement

Drs. van Sleeuwen's, Zegers's, Bisschops's, and van den Boogaard's institution received funding from Zorginstituut Nederland (2021002343). Dr. Koeter's institution received funding from Zorginstituut Nederland. The remaining authors have disclosed that they do not have any potential conflicts of interest.

- 54 references

4

Curr Opin Pulm Med

. 2023 Dec 18.

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Selected updates on chronic obstructive pulmonary disease

Jordina Mah[1], Andrew I Ritchie[1,2], Lydia J Finney[1,3]

Affiliations expand

- PMID: 38099447

- DOI: 10.1097/MCP.0000000000001042

Abstract

Purpose of review: Chronic obstructive pulmonary disease (COPD) is preventable disease and yet it remains the third greatest cause of death worldwide. This review focuses on recent updates in COPD research which have had an impact on our understanding of the epidemiology and pathophysiology of COPD.

Recent findings: Epidemiological studies of COPD have moved towards trying to understand the global impact of COPD particularly in low- and middle-income countries where disease prevalence continues to increase. In addition, we are beginning to uncover the impact of air pollution on COPD development with recent work showing a relationship between air pollution and COPD exacerbations. Advances in understanding early origins and early development of COPD have the potential to intervene earlier in the disease course to prevent disease progression. Although biomarkers such as peripheral blood eosinophilia have led to trials of biologic agents in COPD suggesting we may be entering an exciting new biologic era in COPD.

Summary: Recent advances suggest there may be a relationship between air pollution and COPD exacerbations. This requires further research to influence environmental policy. New clinical trials of biologics targeting TH2 inflammation in COPD suggest that targeted treatments with biologics may be a possibility COPD.

- 35 references

5

Influenza Other Respir Viruses

. 2023 Dec 13;17(12):e13231.

doi: 10.1111/irv.13231. eCollection 2023 Dec.

Impact of antiviral therapy on short- and long-term outcomes of patients with chronic obstructive pulmonary disease after influenza infection

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

Affiliations expand

- PMID: 38098649

- PMCID: PMC10719080

- DOI: 10.1111/irv.13231

Abstract

Background: Respiratory complications often accompany influenza in patients with chronic obstructive pulmonary disease (COPD). In this retrospective study, we quantified the impact of antiviral therapy on exacerbations, healthcare resource utilization (HRU), and costs in patients with COPD across 5 influenza seasons.

Methods: Using claims data from US MarketScan® databases, we identified patients with COPD who had an influenza diagnosis during the 2012-2016 influenza seasons. Patients

who received a neuraminidase inhibitor within 48 h of diagnosis (*N* = 4134) were identified and propensity score-matched 1:1 to a comparator cohort of untreated patients. We determined COPD- and pneumonia-related HRU and costs during month 1, each subsequent quarter, and months 2-13.

Results: Antiviral-treated patients had a significantly lower frequency of COPD-related outcomes than untreated patients during all periods (exacerbations: 10.4% vs 18.2% [month 1] and 17.7% vs 24.2% [months 2-13]; inpatient visit: 2.5% vs 7.9% [month 1] and 3.8% vs 6.7% [months 2-13]; $P < 0.0001$, all comparisons). Treated patients also had significantly lower outpatient and emergency department (ED) visits beyond month 1. Pneumonia-related inpatient, ED, and outpatient visits were significantly lower in antiviral-treated patients than in untreated patients over all periods ($P < 0.0001$, all comparisons). In all HRU categories, COPD- and pneumonia-related costs were significantly lower in treated patients over all periods (month-1 ED visit costs were higher).

Conclusions: Antiviral treatment in patients with COPD and influenza is associated with significantly lower HRU and costs in the postinfection month and for an entire year following infection compared with untreated patients.

Keywords: antivirals; chronic obstructive pulmonary disease; costs; healthcare resource utilization; influenza; long-term.

Conflict of interest statement

CW, TMT, SK, HM III, NW, and DM are current or past employees of Genentech/Roche, Inc. and hold Roche stock.

- 38 references
- 3 figures

6

Pulm Circ

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. 2023 Dec 13;13(4):e12321.

doi: 10.1002/pul2.12321. eCollection 2023 Oct.

Quantitative CT measures of pulmonary vascular volume distribution in pulmonary hypertension associated with COPD: Association with clinical characteristics and outcomes

Hector R Cajigas[1], Ben Lavon[2], William Harmsen[3], Patrick Muchmore[2], Joana Costa[2], Charles Mussche[2], Sydney Pulsifer[3], Jan De Backer[2]

Affiliations expand

- PMID: 38098498

- PMCID: PMC10719487

- DOI: 10.1002/pul2.12321

Abstract

To determine whether quantitative computed tomography (qCT)-derived metrics of pulmonary vascular volume distribution could distinguish chronic obstructive pulmonary disease (COPD) subjects with associated pulmonary hypertension (PH) from those without and to characterize associations of these measurements with clinical and physiological characteristics and outcomes. We collected retrospective CT, pulmonary hemodynamic, clinical, and outcomes data from subjects with COPD and right-heart catheterization-confirmed PH (PH-COPD) and control subjects with COPD but without PH. We measured the volumes of pulmonary vessels < 5 and >10 mm^2 in cross-sectional area as a

percentage of total pulmonary vascular volume (qCT-derived volume of pulmonary vessels < 5 mm^2 in cross-sectional area as a volume fraction of total pulmonary blood volume [BV5%] and qCT-derived volume of pulmonary vessels > 10 mm^2 in cross-sectional area [BV10] as a volume fraction of total pulmonary blood volume [BV10%], respectively) using Functional Respiratory Imaging (FRI), an automated qCT platform, and compared them between PH and control arms and between subjects with mild-moderate PH and those with severe disease. Correlations of hemodynamics with pulmonary function and associations with survival were tested. Forty-five PH-COPD and 42 control subjects were studied. BV5% was lower in PH subjects (32.2% vs. 37.7%, $p = 0.003$), and BV10% was higher (50.2% vs. 43.5, $p = 0.001$). Subjects with severe PH did not differ from those with mild-moderate PH in qCT. Pulmonary vascular volumes were not associated with pulmonary function. BV10 was associated with mean pulmonary artery pressure ($r = 0.3$, $p = 0.05$). Associations with survival were observed for BV5% (hazard ratio 0.63, $p = 0.02$) and BV10% (hazard ratio 1.43, $p = 0.03$) in the PH-COPD arm, but not for controls. qCT-derived measures of pulmonary vascular volume may have diagnostic and prognostic significance in PH-COPD and should be investigated further as screening and risk stratification tools.

Keywords: COPD; pulmonary hypertension; quantitative computed tomography; vascular pruning.

Conflict of interest statement

B. L., P. M., C. M., J. C., and J. D. B. are FLUIDDA Inc. employees who funded this project through an unrestricted grant. The remaining authors declare no conflict of interest.

BMC Prim Care

. 2023 Dec 14;24(1):276.

doi: 10.1186/s12875-023-02234-y.

Digital solutions for decision support in general practice – a rapid review focused on systems developed for the universal healthcare setting in Denmark

Anne Clausen[#1,2], Emilie Rosenfeldt Christensen[#3], Pernille Ravn Jakobsen[4], Jens Søndergaard[4], Bo Abrahamsen[5,6], Katrine Hass Rubin[3,6]

Affiliations expand

- PMID: 38097998

- PMCID: PMC10720123

- DOI: 10.1186/s12875-023-02234-y

Abstract

Background: Digital health solutions hold the potential for supporting general practitioners in decision-making, and include telemedicine systems, decision support systems, patient apps, wearables, fitness trackers, etc. AIM: This review aimed to identify digital solutions developed for, tested, or implemented in general practice to support the decisions of GPs in disease detection and management, using Denmark as an example country of a universal healthcare setting.

Methods: This study was conducted as a rapid review. The primary search included a database search conducted in Embase and MEDLINE. The supplementary search was

conducted in Infomedia and additionally included a snowball search in reference lists and citations of key articles identified in the database search. Titles were screened by two reviewers.

Results: The review included 15 studies as key articles describing a total of 13 digital solutions for decision support in general practice in Denmark. 1.123 titles were identified through the database search and 240 titles were identified through the supplementary and snowball search.

Conclusions: The review identified 13 digital solutions for decision support in general practice in a Danish healthcare setting aimed at detection and/or management of cancer, COPD, type 2 diabetes, depression, liver disease or multiple lifestyle-related diseases. Implementation aspects should be reported more transparently in future publications to enable applicability of digital solutions as decision support to aid general practitioners in disease detection and management.

Keywords: Decision aid; Decision support; Digital health; Digital solutions; General practice; Primary care.

Conflict of interest statement

AC, ERC, PRJ and KHR have declared that no competing interests exist.JS has participated in scientific advisory boards for Novo Nordic, Roche, Astra-Zeneca, GlaxoSmith Kline Pharma, he is editor for Promedicin.dk and holds grants from EU, the Danish Research council and numerous other funds.BA reports grants and personal fees from UCB, grants and personal fees from Kyowa-Kirin UK, personal fees from Amgen, grants from Novartis, grants and personal fees from Pharmacosmos, outside the submitted work.

- 46 references
- 2 figures

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8

Sci Rep

. 2023 Dec 14;13(1):22265.

doi: 10.1038/s41598-023-49654-5.

Effects of symptom management program on selected health outcomes among older people with chronic obstructive pulmonary disease: a quasi-experimental study

Kannikar Phuthornchai[1], Samoraphop Banharak[2], Ladawan Panpanit[3], Sutin Chanaboon[4]

Affiliations expand

- PMID: 38097752

- PMCID: PMC10721618

- DOI: 10.1038/s41598-023-49654-5

Abstract

Older adults have limitations from their aging process and chronic disease, so developed interventions must pay attention and concern to their aging degeneration and needs. This study aims to study the effects of a symptom management program on selected health outcomes among older people with chronic obstructive pulmonary disease. The quasi-experimental research included the 15 older patients in the control group receiving routine nursing care, while the other 15 in the experimental group received a 4-week symptom management program. First, the general information was analyzed using descriptive statistics. Next, the average health outcomes were analyzed using independent and dependent t-tests, Mann-Whitney U Test, and Wilcoxon Signed Ranks Test. In addition, the

readmission rate was compared using Fisher's Exact Test. Results revealed that most of the older patients were men (96.7%), aged 60-88 years (Mean = 71.57, SD = 7.75), with a smoking history (93.3%). The improvements were found in dyspnea ($p < .01$), its severity during activities ($p < .01$), and the quality of life ($p = .04$) among patients who attended the program. However, both groups did not have a different pulmonary function ($p = .25$) and the proportion of readmission within 28 days ($p = .50$). This study shows that the symptom management program can reduce dyspnea and severity during activities and improve the quality of life. Older people suffer from chronic obstructive pulmonary disease, especially when experiencing dyspnea. Therefore, it is crucial to have a symptom management program for older patients, especially a program developed to respond to changes in the aging process and the limitations of older people. This developed program was age-friendly to deal with symptoms and improve quality of life. However, this program should be explored in typical situations without the effects of the coronavirus disease (COVID-19) pandemic. In addition, more extensive population-based studies and randomized controlled trials should be adopted to increase credibility and ensure generalization.Clinical Trial Registration Number: https://osf.io/6sj7y (October 4, 2021).

Conflict of interest statement

The authors declare no competing interests.

- 37 references
- 1 figure

SUPPLEMENTARY INFO

MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

. 2023 Dec 14;14(1):8297.

doi: 10.1038/s41467-023-44047-8.

Prediction and stratification of longitudinal risk for chronic obstructive pulmonary disease across smoking behaviors

Yixuan He[1 2 3], David C Qian[4], James A Diao[5], Michael H Cho[6], Edwin K Silverman[3 6 7], Alexander Gusev[8], Arjun K Manrai[5], Alicia R Martin[# 9 10 11], Chirag J Patel[# 12]

Affiliations expand

- PMID: 38097585

- PMCID: PMC10721891

- DOI: 10.1038/s41467-023-44047-8

Abstract

Smoking is the leading risk factor for chronic obstructive pulmonary disease (COPD) worldwide, yet many people who never smoke develop COPD. We perform a longitudinal analysis of COPD in the UK Biobank to derive and validate the Socioeconomic and Environmental Risk Score which captures additive and cumulative environmental, behavioral, and socioeconomic exposure risks beyond tobacco smoking. The Socioeconomic and Environmental Risk Score is more predictive of COPD than smoking status and pack-years. Individuals in the highest decile of the risk score have a greater risk for incident COPD compared to the remaining population. Never smokers in the highest decile of exposure risk are more likely to develop COPD than previous and current smokers in the lowest decile. In general, the prediction accuracy of the Social and Environmental Risk Score is lower in non-European populations. While smoking status is often considered in screening COPD, our finding highlights the importance of other non-smoking environmental and socioeconomic variables.

Conflict of interest statement

E.K.S. has received grant and travel support from GlaxoSmithKline. M.H.C. has received grant support from GSK, consulting fees from Genentech and AstraZeneca, and speaking fees from Illumina. All other authors declare no competing interests.

- 55 references
- 4 figures

SUPPLEMENTARY INFO

MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

10

Eur Respir J

. 2023 Dec 14:2300337.

doi: 10.1183/13993003.00337-2023. Online ahead of print.

Genome Wide Association Study of Preserved Ratio Impaired Spirometry (PRISm)

Daniel H Higbee[1,2], Alvin Lirio[3], Fergus Hamilton[1], Raquel Granell[1], Annah B Wyss[4], Stephanie J London[4], Traci M Bartz[5], Sina A Gharib[6], Michael H Cho[7,8], Emily Wan[7,8,9], Edwin Silverman[9], James D Crapo[10], Jesus Lominchar[11], Torben Hansen[11], Niels Grarup[11], Thomas Dantoft[12], Line Kårhus[12], Allan Linneberg[12], George T O'Connor[13,14], Josée Dupuis[15], Hanfie Xu[16], Maaike M De Vries[17,18], Xiaowei Hu[19], Stephen S Rich[19], R Graham Barr[20], Ani Manichaikul[19], Sara R A Wijnant[21,22,23], Guy G Brusselle[23,24], Lies Lahouse[21,22], Xuan Li[25], Ana I Hernández Cordero[25], Ma'en

Obeidat[25], Don D Sin[25,26], Sarah E Harris[27], Paul Redmond[27], Adele M Taylor[27], Simon R Cox[27], Alexander T Williams[3], Nick Shrine[3], Catherine John[3], Anna L Guyatt[3], Ian P Hall[28], George Davey Smith[1], Martin D Tobin[3,29,30], James W Dodd[31,2,30]

Affiliations expand

- PMID: 38097206

- DOI: 10.1183/13993003.00337-2023

Abstract

Background: Preserved Ratio Impaired Spirometry (PRISm) is defined as FEV_1 <80% predicted, FEV_1/FVC ≥0.70. PRISm is associated with respiratory symptoms and co-morbidities. Our objective was to discover novel genetic signals for PRISm and see if they provide insight into the pathogenesis of PRISm and associated co-morbidities.

Methods: We undertook a genome-wide association study (GWAS) of PRISm in UK Biobank participants (Stage 1), and selected SNPs reaching genome-wide significance for replication in 13 cohorts (Stage 2). A combined meta-analysis of Stage 1 and Stage 2 was done to determine top SNPs. We used cross-trait Linkage Disequilibrium score regression to estimate genome-wide genetic correlation between PRISM and pulmonary and extra-pulmonary traits. Phenome-wide association studies of top SNPs was performed.

Results: 22 signals reached significance in the joint meta-analysis, including four signals novel for lung function. A strong genome-wide genetic correlation (r_g) between PRISm and spirometric COPD (r_g=0.62, p-value <0.001) was observed, and genetic correlation with type II diabetes (r_g=0.12, p-value 0.007). PheWAS showed that 18 of 22 signals were associated with diabetic traits and 7 with blood pressure traits.

Discussion: This is the first GWAS to successfully identify SNPs associated with PRISm. Four of the signals; rs7652391 (nearest gene *MECOM*), rs9431040 (*HLX*), rs62018863 (*TMEM114*) and rs185937162 (*HLA-B*) have not been described in association with lung function before, demonstrating the utility of using different lung function phenotypes in GWAS. Genetic factors associated with PRISm are strongly correlated with risk of both other lung diseases and extra-pulmonary co-morbidity.

Comment

Eur Respir J

. 2023 Dec 14;62(6):2301510.

doi: 10.1183/13993003.01510-2023. Print 2023 Dec.

Simplifying pharmacotherapy for patients with COPD: a viewpoint

Samy Suissa[1,2]

Affiliations expand

- PMID: 38097204

- DOI: 10.1183/13993003.01510-2023

No abstract available

Conflict of interest statement

Conflict of interest: S. Suissa has attended scientific advisory committee meetings or received speaking fees from AstraZeneca, Atara, Boehringer Ingelheim, Bristol-Myers-Squibb, Merck, Novartis, Panalgo, Pfizer and Seqirus.

Comment on

- Simplifying pharmacotherapy for patients with COPD: a viewpoint.

Celli B, Vestbo J.Eur Respir J. 2023 Aug 17;62(2):2300115. doi: 10.1183/13993003.00115-2023. Print 2023 Aug.PMID: 37591551 Review. No abstract available.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

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12

Comment

Eur Respir J

-
-
-

. 2023 Dec 14;62(6):2301600.

doi: 10.1183/13993003.01600-2023. Print 2023 Dec.

Reply: Simplifying pharmacotherapy for patients with COPD: a viewpoint

Bartolome Celli[1], Jørgen Vestbo[2]

Affiliations expand

- PMID: 38097203

- DOI: 10.1183/13993003.01600-2023

No abstract available

Conflict of interest statement

Conflict of interest: B. Celli reports support for the present manuscript from GlaxoSmithKline, and consultancy fees from AstraZeneca, GlaxoSmithKline, Boehringer Ingelheim, Novartis, Sanofi Aventis and Menarini. J. Vestbo reports consultancy fees from AstraZeneca, and payment or honoraria for lectures, presentations, manuscript writing or educational events from ALK-Abello, AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline and Teva.

Comment on

- Simplifying pharmacotherapy for patients with COPD: a viewpoint.
  Celli B, Vestbo J.Eur Respir J. 2023 Aug 17;62(2):2300115. doi: 10.1183/13993003.00115-2023. Print 2023 Aug.PMID: 37591551 Review. No abstract available.

13

Chronic Obstr Pulm Dis

. 2023 Dec 13.

doi: 10.15326/jcopdf.2023.0438. Online ahead of print.

Assessment of Obstructive Sleep Apnea Among Patients With Chronic

Obstructive Pulmonary Disease in Primary Care

Lucas M Donovan[1,2], Thomas L Keller[2], Nancy H Stewart[3], Jennifer Wright[2], Laura J Spece[1,2], Kevin I Duan[2,4], Aristotle Leonhard[1,2], Brian N Palen[1,2], Martha E Billings[1,2], David H Au[1,2], Laura C Feemster[1,2]

Affiliations expand

- PMID: 38095613

- DOI: 10.15326/jcopdf.2023.0438

Free article

Abstract

Study objectives: Observational studies link untreated obstructive sleep apnea (OSA) with adverse outcomes in chronic obstructive pulmonary disease (COPD). The first step in addressing OSA is a clinical assessment. However, given competing demands and a lack of high-quality evidence, it is unclear how often such assessments occur. We explored the documentation of OSA assessment among patients with COPD in primary care, and the patient and provider characteristics associated with these assessments.

Methods: We conducted a cross-sectional study of patients with clinically diagnosed COPD at two primary care practices. We abstracted charts to determine whether providers assessed OSA, defined as documentation of: symptoms, treatment, or referral to sleep medicine. We performed multivariable mixed-effects logistic regression to assess the associations of patient and provider characteristics with OSA assessment.

Results: Among 641 patients with clinically diagnosed COPD, 146 (23%) had OSA assessed over a one-year period. Positive associations with OSA assessment included BMI ≥ 30 (OR 3.5, 95%CI 1.8-7.0), pulmonary subspecialist visits (OR 3.9, 95%CI 2.4-6.3), and a prior sleep study demonstrating OSA documented within the electronic medical record (OR 18.0, 95%CI 9.0-35.8). Notably, patients identifying as Black were less likely to have OSA assessed than those identifying as White (OR 0.5, 95%CI 0.2-0.9).

Conclusions: Providers document an assessment of OSA among a quarter of patients with COPD. Our findings highlight the importance of future work to rigorously test the impact of assessment on important health outcomes. Our findings also reinforce that additional strategies are needed to improve the equitable delivery of care.

Keywords: chronic obstructive pulmonary disease; obstructive sleep apnea; primary care.

SUPPLEMENTARY INFO

Grants and fundingexpand

FULL TEXT LINKS

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14

World Allergy Organ J

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. 2023 Dec 12;16(12):100848.

doi: 10.1016/j.waojou.2023.100848. eCollection 2023 Dec.

A comparison of treatment response to biologics in asthma–COPD overlap and pure asthma: Findings from the PRISM study

Ji-Su Shim[1], Hyunkyoung Kim[2], Jae-Woo Kwon[3], So-Young Park[4], Sujeong Kim[5], Byung-Keun Kim[6], Young-Hee Nam[7], Min-Suk Yang[8], Mi-Yeong Kim[9], Sae-Hoon Kim[10], Byung-Jae Lee[11], Taehoon Lee[12], Sang-Ha Kim[13], So Young Park[14], Young-Joo Cho[1], Chan Sun Park[15], Jae-Woo Jung[16], Han-Ki Park[5,17], Joo-Hee Kim[18], Jeong-Hee Choi[19], Ji-Yong Moon[20], Ian Adcock[21], Kian Fan Chung[21], Min-Hye Kim[1], Tae-Bum Kim[2]; Precision Intervention in Severe Asthma (PRISM) study investigatorsa

Affiliations expand

- PMID: 38093952

- PMCID: PMC10716772

- DOI: 10.1016/j.waojou.2023.100848

Abstract

Background: Despite the increasing use of biologics in severe asthma, there is limited research on their use in asthma-chronic obstructive pulmonary disease overlap (ACO). We compared real-world treatment responses to biologics in ACO and asthma.

Methods: We conducted a multicenter, retrospective, cohort study using data from the Precision Medicine Intervention in Severe Asthma (PRISM). ACO was defined as post-bronchodilator forced expiratory volume in 1 s (FEV1)/forced vital capacity (FVC) <0.7 and a smoking history of >10 pack-years. Physicians selected biologics (omalizumab, mepolizumab, reslizumab, benralizumab, and dupilumab) based on each United States Food & Drug Administration (FDA) approval criteria.

Results: After six-month treatment with biologics, both patients with ACO (N = 13) and asthma (N = 81) showed positive responses in FEV1 (10.69 ± 17.17 vs. 11.25 ± 12.87 %, P = 0.652), Asthma Control Test score (3.33 ± 5.47 vs. 5.39 ± 5.42, P = 0.290), oral corticosteroid use (-117.50 ± 94.38 vs. -115.06 ± 456.85 mg, P = 0.688), fractional exhaled nitric oxide levels (-18.62 ± 24.68 vs. -14.66 ± 45.35 ppb, P = 0.415), sputum eosinophils (-3.40 ± 10.60 vs. -14.48 ± 24.01 %, P = 0.065), blood eosinophils (-36.47 ± 517.02 vs. -363.22 ± 1294.59, P = 0.013), and exacerbation frequency (-3.07 ± 4.42 vs. -3.19 ± 5.11, P = 0.943). The odds ratio for exacerbation and time-to-first exacerbation showed no significant difference after full adjustments, and subgroup analysis according to biologic type was also showed similar results.

Conclusions: Biologics treatment response patterns in patients with ACO and asthma were comparable, suggesting that biologics should be actively considered for ACO patients as well.

Keywords: Asthma; Asthma-COPD overlap; Biologics; Monoclonal antibodies; Treatment response.

Conflict of interest statement

The authors declare that they have no competing interests.

- 34 references
- 2 figures

FULL TEXT LINKS

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15

Observational Study

Respir Res

. 2023 Dec 13;24(1):311.

doi: 10.1186/s12931-023-02628-7.

Deep learning prediction of hospital readmissions for asthma and COPD

Kevin Lopez[#1,2], Huan Li[#1,2], Zachary Lipkin-Moore[1,3], Shannon Kay[1,2], Haseena Rajeevan[4], J Lucian Davis[1,5], F Perry Wilson[6], Carolyn L Rochester[1,7], Jose L Gomez[8,9]

Affiliations expand

- PMID: 38093373
- PMCID: PMC10720134
- DOI: 10.1186/s12931-023-02628-7

Free PMC article

Abstract

Question: Severe asthma and COPD exacerbations requiring hospitalization are linked to increased disease morbidity and healthcare costs. We sought to identify Electronic Health Record (EHR) features of severe asthma and COPD exacerbations and evaluate the performance of four machine learning (ML) and one deep learning (DL) model in predicting readmissions using EHR data.

Study design and methods: Observational study between September 30, 2012, and December 31, 2017, of patients hospitalized with asthma and COPD exacerbations.

Results: This study included 5,794 patients, 1,893 with asthma and 3,901 with COPD. Patients with asthma were predominantly female (n = 1288 [68%]), 35% were Black (n = 669), and 25% (n = 479) were Hispanic. Black (44 vs. 33%, p = 0.01) and Hispanic patients (30 vs. 24%, p = 0.02) were more likely to be readmitted for asthma. Similarly, patients with COPD readmissions included a large percentage of Blacks (18 vs. 10%, p < 0.01) and Hispanics (8 vs. 5%, p < 0.01). To identify patients at high risk of readmission index hospitalization data of a subset of 2,682 patients, 777 with asthma and 1,905 with COPD, was analyzed with four ML models, and one DL model. We found that multilayer perceptron, the DL method, had the best sensitivity and specificity compared to the four ML methods implemented in the same dataset.

Interpretation: Multilayer perceptron, a deep learning method, had the best performance in predicting asthma and COPD readmissions, demonstrating that EHR and deep learning integration can improve high-risk patient detection.

Conflict of interest statement

Dr. Gomez is a former associate editor of Respiratory Research.

- 31 references
- 3 figures

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

16

BMC Pulm Med

. 2023 Dec 13;23(1):506.

doi: 10.1186/s12890-023-02796-8.

The patient journey in Chronic Obstructive Pulmonary Disease (COPD): a human factors qualitative international study to understand the needs of people living with COPD

Nicola Scichilone[1], Andrew Whittamore[2], Chris White[3], Elena Nudo[4], Massimo Savella[4], Marta Lombardini[4]

Affiliations expand

- PMID: 38093262

- PMCID: PMC10720133

- DOI: 10.1186/s12890-023-02796-8

Free PMC article

Abstract

Background: Chronic obstructive pulmonary disease (COPD) is a common condition that causes irreversible airway obstruction. Fatigue and exertional dyspnoea, for example, have a detrimental impact on the patient's daily life. Current research has revealed the need to

empower the patient, which can result in not only educated and effective decision-making, but also a considerable improvement in patient satisfaction and treatment compliance. The current study aimed to investigate the perspectives and requirements of people living with COPD to possibly explore new ways to manage their disease.

Methods: Adults with COPD from 8 European countries were interviewed by human factor experts to evaluate their disease journey through the gathering of information on the age, performance, length, and impact of diagnosis, symptoms progression, and family and friends' reactions. The assessment of present symptoms, services, and challenges was performed through a 90-min semi-structured interview. To identify possible unmet needs of participants, a generic thematic method was used to explore patterns, themes, linkages, and sequences within the data collected. Flow charts and diagrams were created to communicate the primary findings. Following analysis, the data was consolidated into cohesive insights and conversation themes relevant to determining the patient's unmet needs.

Results: The 62, who voluntarily accepted to be interviewed, were patients (61% females, aged 32-70 years) with a COPD diagnosis for at least 6 months with stable symptoms of different severity. The main challenges expressed by the patients were the impact on their lifestyle, reduced physical activity, and issues with their mobility. About one-fourth had challenges with their symptoms or medication including difficulty in breathing. Beyond finding a cure for COPD was the primary goal for patients, their main needs were to receive adequate information on the disease and treatments, and to have adequate support to improve physical activity and mobility, helpful both for patients and their families.

Conclusions: These results could aid in the creation of new ideas and concepts to improve our patient's quality of life, encouraging a holistic approach to people living with COPD and reinforcing the commitment to understanding their needs.

Keywords: Assessment of healthcare needs; Chronic obstructive pulmonary disease; Determination of healthcare needs; Human factors science; Human-centered design; Multinational perspective; Patient-centered care; Pharmacologic therapy; Qualitative evaluation; Qualitative research; Quality of healthcare; Quality of life.

Conflict of interest statement

NS declares no competing interests.
AW declares no competing interests.
CW is a full-time employee of Rebus Medical.
EN, MS, and ML are full-time employees of Chiesi Farmaceutici.

- 35 references
- 11 figures

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

17

Curr Opin Pulm Med

-
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-

. 2023 Dec 14.

doi: 10.1097/MCP.0000000000001041. Online ahead of print.

Pulmonary hypertension in chronic obstructive pulmonary disease: current understanding, knowledge gaps and future directions

William T Atchley[1], Teja Krishna Kakkera

Affiliations expand

- PMID: 38088383

- DOI: 10.1097/MCP.0000000000001041

Abstract

Purpose of review: Despite the advent of effective and mechanistically diverse treatments for pulmonary arterial hypertension (PAH) and their positive impacts on the functional

capacities and outcomes for PAH patients, the much larger population of patients with pulmonary hypertension (PH) in chronic lung diseases like chronic obstructive pulmonary disease (PH-COPD) remain without effective therapies.

Recent findings: In this review, we will highlight advances in the understanding of PH-COPD pathobiology, the clinical impact comorbid PH has on COPD outcomes, and detail the spectrum of disease and clinical phenotypes that encompass the heterogenous disease manifestations of PH-COPD. Finally, we will examine recent studies exploring the effects of potential treatments for PH-COPD and highlight sub-populations and treatment options that warrant further study.

Summary: As the PAH population-base ages and comorbid diseases become more frequently diagnosed in PAH patients, the need to clearly delineate subpopulations for clinical applications of PH therapies and research becomes even more urgent. Through an improved understanding of the clinical phenotypes of PH-COPD and the overlap with certain subpopulations of PAH, a framework for future research and potential for therapeutic impact is highlighted.

- 24 references

18

Review

Respirology

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. 2023 Dec 12.

doi: 10.1111/resp.14644. Online ahead of print.

Treatable traits models of care

Vanessa M McDonald[1 2 3], Anne E Holland[1 4 5 6]

Affiliations expand

- PMID: 38087840

- DOI: 10.1111/resp.14644

Free article

Abstract

Treatable traits is a personalized approach to the management of respiratory disease. The approach involves a multidimensional assessment to understand the traits present in individual patients. Traits are phenotypic and endotypic characteristics that can be identified, are clinically relevant and can be successfully treated by therapy to improve clinical outcomes. Identification of traits is followed by individualized and targeted treatment to those traits. First proposed for the management of asthma and chronic obstructive pulmonary disease (COPD) the approach is recommended in many other areas of respiratory and now immunology medicine. Models of care for treatable traits have been proposed in different diseases and health care setting. In asthma and COPD traits are identified in three domains including pulmonary, extrapulmonary and behavioural/lifestyle/risk-factors. In bronchiectasis and interstitial lung disease, a fourth domain of aetiological traits has been proposed. As the core of treatable traits is personalized and individualized medicine; there are several key aspects to treatable traits models of care that should be considered in the delivery of care. These include person centredness, consideration of patients' values, needs and preferences, health literacy and engagement. We review the models of care that have been proposed and provide guidance on the engagement of patients in this approach to care.

Keywords: airway disease; asthma; chronic respiratory disease; model of care; treatable traits.

- 72 references

SUPPLEMENTARY INFO

Publication typesexpand

19

Curr Opin Crit Care

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. 2023 Dec 11.

doi: 10.1097/MCC.0000000000001131. Online ahead of print.

Setting positive end-expiratory pressure in the severely obstructive patient

Amal Jubran[1,2]

Affiliations expand

- PMID: 38085854

- DOI: 10.1097/MCC.0000000000001131

Abstract

Purpose of review: The response to positive end-expiratory pressure (PEEP) in patients with chronic obstructive pulmonary disease (COPD) requiring mechanical ventilation depends on the underlying pathophysiology. This review focuses on the pathophysiology of COPD, especially intrinsic PEEP (PEEPi) and its consequences, and the benefits of applying external PEEP during assisted ventilation when PEEPi is present.

Recent findings: The presence of expiratory airflow limitation and increased airway resistance promotes the development of dynamic hyperinflation in patients with COPD during acute respiratory failure. Dynamic hyperinflation and the associated development of PEEPi increases work of breathing and contributes to ineffective triggering of the ventilator. In the presence of airflow limitation, application of external PEEP during patient-triggered ventilation has been shown to reduce inspiratory effort, facilitate ventilatory triggering and enhance patient-ventilator interaction. To minimize the risk of hyperinflation, it is advisable to limit the level of external PEEP during assisted ventilation after optimization of ventilator settings to about 70% of the level of PEEPi (measured during passive ventilation).

Summary: In patients with COPD and dynamic hyperinflation receiving assisted mechanical ventilation, the application of low levels of external PEEP can minimize work of breathing, facilitate ventilator triggering and improve patient-ventilator interaction.

- 54 references

20

Curr Opin Pulm Med

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-

. 2023 Dec 13.

doi: 10.1097/MCP.0000000000001040. Online ahead of print.

Chronic obstructive pulmonary disease and cardiovascular disease:

mechanistic links and implications for practice

Tetsuro Maeda[1], Mark T Dransfield

Affiliations expand

- PMID: 38085609

- DOI: 10.1097/MCP.0000000000001040

Abstract

Purpose of review: Chronic obstructive pulmonary disease (COPD) and cardiovascular disease (CVD) are both significant burdens on the healthcare system and often coexist. Mechanistic links between the two conditions and their clinical impact are increasingly understood.

Recent findings: Recent studies demonstrate multiple mechanisms by which the pathobiology of COPD may have negative effects on the cardiovascular system. These include extrapulmonary consequences of the COPD inflammatory state, cardiac autonomic dysfunction, which has been recently implicated in worsening respiratory symptoms and exacerbation risk, and mechanical effects of lung hyperinflation on left ventricular diastolic function.Clinical studies have consistently shown a high prevalence of CVD in COPD patients and worsened outcomes (and vice versa). Exacerbations of COPD have also been demonstrated to dramatically increase the risk of cardiovascular events. While some safety concerns exist, medications for COPD and cardiovascular disease should be used in accordance with respective guidelines. However, real-world data show suboptimal management for patients with COPD and CVD.

Summary: COPD and cardiovascular disease have complicated interrelationships. Further mechanistic studies may lead to defining better targets for interventions. Education for medical professionals and implementation of novel screening protocols should be encouraged to fill in the gaps in clinical care for these patients.

- 50 references

21

Expert Rev Respir Med

. 2023 Dec 12:1-8.

doi: 10.1080/17476348.2023.2282022. Online ahead of print.

Association between depression and COPD: results from the NHANES 2013-2018 and a bidirectional Mendelian randomization analysis

Bi Ran[1], Yutian Zhang[1], Yanqiu Wu[1], Fuqiang Wen[1]

Affiliations expand

- PMID: 38085600

- DOI: 10.1080/17476348.2023.2282022

Abstract

Background: Observational studies showed a bidirectional association between depression and chronic obstructive pulmonary disease (COPD). However, it is unclear whether the observed association is causal. Thus we estimated the relationship using observational studies combined with bidirectional Mendelian randomization [MR].

Materials and methods: The study included 9977 participants from the 2013-2018 National Health and Nutrition Examination Survey and used weighted logistic regression analysis to assess the association between depression and COPD, followed by a bidirectional Mendelian randomization analysis to verify their causality.

Results: Adjusted-weighted logistic regression in observational studies showed a significant association between COPD and mild depression (OR (95% CI): 1.81 (1.30, 2.52), *P* = 0.002) and COPD and depression (OR (95% CI): 1.93 (1.49, 2.50), *P* < 0.001). MR suggested depression may play a causal role in COPD risk (OR (95% CI): 1.45 (1.32, 1.60), *P* < 0.001), but more evidence for reverse causation is lacking (reverse MR OR (95% CI): 1.03 (0.99, 1.07), *P* = 0.151).

Conclusion: In conclusion, our study found depression may play a potential causal role in the morbidity of COPD suggesting depression might be the etiology of COPD. This finding needs to be validated in further prospective cohort studies with large sample sizes and adequate follow-up time.

Keywords: Mendelian randomization; NHANES; chronic obstructive pulmonary disease; depression; genetics.

BMC Geriatr

. 2023 Dec 11;23(1):836.

doi: 10.1186/s12877-023-04508-7.

When chronic obstructive pulmonary disease meets small cell lung cancer: an

unusual case report of rapid progression

Xu Zhang[1], Jia Zeng[1], Xiyu Huang[2], Zhishu Li[3,4]

Affiliations expand

- PMID: 38082430
- PMCID: PMC10714477
- DOI: 10.1186/s12877-023-04508-7

Free PMC article

Abstract

Background: Chronic obstructive pulmonary disease (COPD) is a chronic inflammatory disease and a risk factor for lung cancer. Small cell lung cancer is a neuroendocrine tumor with a high degree of malignancy and an overall five-year survival rate of less than 7%.

Cases presentation: Herein, we report the case of an 68-year-old male presented to the respiratory department with cough, sputum, and dyspnea. He was diagnosed as community acquired pneumonia and treated with intravenous anti-infection. Previous pulmonary function was definitively diagnosed as COPD. About 7 months after discharge, the patient returned to the hospital for cough and dyspnea. After diagnosis of the tumor, cisplatin, etoposide and durvalumab were administered. Finally the patient died of respiratory failure approximately 9 months after his diagnosis.

Conclusions: For COPD patients with immunocompromised manifestations, it is necessary to be alert to complications and shorten the follow-up interval of chest CT. COPD may accelerate the formation and progression of SCLC.

Keywords: COPD; Case report; SCLC; Survival outcome; progression.

Conflict of interest statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

The authors declare no competing interests.

- 12 references
- 3 figures

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

23

Review

J Transl Med

. 2023 Dec 11;21(1):902.

doi: 10.1186/s12967-023-04782-4.

Role of IL-33-ST2 pathway in regulating inflammation: current evidence and future perspectives

Yilu Zhou[1], Zhendong Xu[2], Zhiqiang Liu[3]

Affiliations expand

- PMID: 38082335

- PMCID: PMC10714644

- DOI: 10.1186/s12967-023-04782-4

Free PMC article

Abstract

Interleukin (IL)-33 is an alarmin of the IL-1 superfamily localized to the nucleus of expressing cells, such as endothelial cells, epithelial cells, and fibroblasts. In response to cellular damage or stress, IL-33 is released and activates innate immune responses in some immune and structural cells via its receptor interleukin-1 receptor like-1 (IL-1RL1 or ST2). Recently, IL-33 has become a hot topic of research because of its role in pulmonary inflammation. The IL-33-ST2 signaling pathway plays a pro-inflammatory role by activating the type 2 inflammatory response, producing type 2 cytokines and chemokines. Elevated levels of IL-33 and ST2 have been observed in chronic pulmonary obstructive disease (COPD). Notably, IL-33 is present in COPD induced by cigarette smoke or acute inflammations. The role of IL-33 in sepsis is becoming increasingly prominent, and understanding its significance in the treatment of sepsis associated with high mortality is critical. In addition to its pro-inflammatory effects, the IL-33-ST2 axis appears to play a role in bacterial clearance and tissue repair. In this review, we focused on the role of the IL-33-ST2 axis in sepsis, asthma, and COPD and summarized the therapeutic targets associated with this axis, providing a basis for future treatment.

Keywords: Asthma; IL-33; Inflammation; Inflammatory response; Sepsis.

Conflict of interest statement

The authors declare that the review was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

- 111 references
- 3 figures

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS

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24

Ann Am Thorac Soc

. 2023 Dec 11.

doi: 10.1513/AnnalsATS.202304-342OC. Online ahead of print.

Perspectives of Black Adults Living with Chronic Obstructive Pulmonary Disease on Barriers to Cardiovascular Disease Prevention

Jamuna K Krishnan[1], Michaela L Murphy[2 3], Armani S Edgar[4], Kerri I Aronson[4], Albina Guri[5], Liam Gross[5 6], Tiffany Younger[7], Fernando J Martinez[8], Monika M Safford[9]

Affiliations expand

- PMID: 38079490

- DOI: 10.1513/AnnalsATS.202304-342OC

Abstract

Rationale: Cardiovascular disease (CVD) is a leading cause of morbidity and mortality among individuals with chronic obstructive pulmonary disease (COPD). Black women with COPD are at elevated risk of CVD-related mortality compared to White women. CVD risk factors are undertreated in Black men and women. However, barriers to CVD prevention from the perspective of Black individuals living with COPD have not been previously identified.

Objective: To identify barriers and facilitators for CVD prevention among Black individuals living with COPD.

Methods: We conducted semi-structured interviews with Black participants living with COPD and attending clinics at two urban hospitals. Participants were included if they had physician confirmed COPD diagnosis and presence of CVD or CVD risk factors. Participants were interviewed until thematic saturation was reached, with additional interviews conducted to confirm saturation. Data were analyzed using thematic analysis, iteratively revising, and updating the codebook by consensus of the study team. Codes were grouped into categories, subthemes, and themes. Themes were organized using the social ecological framework into individual, interpersonal, health system, and societal levels.

Results: We interviewed 30 participants of mean age 67.8 ± 8.3 years; 17 (57%) were Black women and 13 (43%) were Black men. Individual-level themes were: living with COPD and resultant multimorbidity impacts CVD prevention (theme 1), and self-efficacy and advocacy impact care received (theme 2). At the interpersonal level: supportive relationships facilitate improved access to CVD prevention (theme 3). System level themes were: health systems are not designed to support patients with COPD and CVD (theme 4), and health systems do not deliver effective patient education (theme 5). At the societal level: structural barriers and racism prevent accessing care and adopting a healthy lifestyle (theme 6).

Conclusions: We identified barriers to CVD prevention at all levels of the socio-ecological framework for Black individuals living with COPD. To maximize their impact, future interventions to prevent CVD among individuals with COPD can use these findings to target barriers at multiple levels.

25

Am J Respir Crit Care Med

. 2023 Dec 11.

doi: 10.1164/rccm.202311-2087ED. Online ahead of print.

Blood Biomarkers of Emphysema: What Can They Really Tell Us?

Maarten van den Berge[1,2], Alen Faiz[3]

Affiliations expand

- PMID: 38078855

- DOI: 10.1164/rccm.202311-2087ED

No abstract available

Keywords: Blood; COPD; bioinformatics; emphysema.

26

Review

Zhonghua Jie He He Hu Xi Za Zhi

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. 2023 Dec 12;46(12):1266-1271.

doi: 10.3760/cma.j.cn112147-20230922-00190.

[Advances in chest imaging in early chronic obstructive pulmonary disease]

[Article in Chinese]

Y N Li[1], G C Shi[2], J Guan[1]

Affiliations expand

- PMID: 38044057

- DOI: 10.3760/cma.j.cn112147-20230922-00190

Abstract

in English, Chinese

Chronic obstructive pulmonary disease(COPD)is a heterogeneous and complex disease, and is characterized by exertional dyspnea and chronic cough. For many years, lung function testing have been used to diagnose COPD, but the sensitivity of lung function testing is low, so there is an urgent need for more sensitive diagnostic methods that show early changes in pathology. In recent years, with the rapid development of HRCT, quantitative CT, new magnetic resonance imaging technology, optical coherence tomography (OCT), artificial intelligence, electrical impedance tomography, etc, it provides a basis for the early diagnosis of COPD. This article reviewed the progress in imaging studies of early COPD in recent years.

Editorial

. 2023 Dec 15;208(12):1255-1256.

doi: 10.1164/rccm.202310-1793ED.

Undiagnosed (or Unrecognized) Chronic Obstructive Pulmonary Disease and Asthma: Does Active Case Finding Identify Clinically Impaired Patients with Treatment Potential?

Yunus Çolak [1 2 3]

Affiliations expand

- PMID: 37934464

- DOI: 10.1164/rccm.202310-1793ED

No abstract available

Comment on

- Impact of Undiagnosed Chronic Obstructive Pulmonary Disease and Asthma on Symptoms, Quality of Life, Healthcare Use, and Work Productivity.
  Gerstein E, Bierbrier J, Whitmore GA, Vandemheen KL, Bergeron C, Boulet LP, Cote A, Field SK, Penz E, McIvor RA, Lemière C, Gupta S, Hernandez P, Mayers I, Bhutani M, Lougheed MD, Licskai CJ, Azher T, Ezer N, Ainslie M, Alvarez GG, Mulpuru S, Aaron SD.Am J Respir Crit Care Med. 2023 Dec 15;208(12):1271-1282. doi: 10.1164/rccm.202307-1264OC.PMID: 37792953

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

28

Am J Respir Crit Care Med

. 2023 Dec 15;208(12):1345-1346.

doi: 10.1164/rccm.202309-1671LE.

A Daunting and Challenging Task to Prove the Effectiveness of Reducing Acute Exacerbation in COPD Patients with Type 2 Diabetes by GLP-1 Receptor Agonists

Qiumeng Li[1], Yating Chen[1], Hang Jiang[1], Yue Xi[1], Jiahe Wang[1], Xiaofeng Zhu[1], Jianxiong Lai[1], Nuofu Zhang[1], Dongxing Zhao[1]

Affiliations expand

- PMID: 37855726

- DOI: 10.1164/rccm.202309-1671LE

No abstract available

29

Am J Respir Crit Care Med

. 2023 Dec 15;208(12):1265-1267.

doi: 10.1164/rccm.202308-1468VP.

The Chronic Obstructive Pulmonary Disease (COPD)–Bronchiectasis Overlap Syndrome: Does My COPD Patient Have Bronchiectasis on Computed Tomography? "Frankly, My Dear, I Don't Give a Damn!"

Mark L Metersky[1], Mark T Dransfield[2]

Affiliations expand

- PMID: 37796579

- DOI: 10.1164/rccm.202308-1468VP

No abstract available

Multicenter Study

Am J Respir Crit Care Med

. 2023 Dec 15;208(12):1271-1282.

doi: 10.1164/rccm.202307-1264OC.

Impact of Undiagnosed Chronic Obstructive Pulmonary Disease and Asthma on Symptoms, Quality of Life, Healthcare Use, and Work Productivity

Emily Gerstein[1], Jared Bierbrier[1], G Alex Whitmore[2], Katherine L Vandemheen[1], Celine Bergeron[3], Louis-Philippe Boulet[4], Andreanne Cote[4], Stephen K Field[5], Erika Penz[6], R Andrew McIvor[7], Catherine Lemière[8], Samir Gupta[9], Paul Hernandez[10], Irvin Mayers[11], Mohit Bhutani[11], M Diane Lougheed[12], Christopher J Licskai[13], Tanweer Azher[14], Nicole Ezer[15], Martha Ainslie[16], Gonzalo G Alvarez[1], Sunita Mulpuru[1], Shawn D Aaron[1]

Affiliations expand

- PMID: 37792953

- DOI: 10.1164/rccm.202307-1264OC

Abstract

Rationale: A significant proportion of individuals with chronic obstructive pulmonary disease (COPD) and asthma remain undiagnosed. **Objectives:** The objective of this study was to evaluate symptoms, quality of life, healthcare use, and work productivity in subjects with undiagnosed COPD or asthma compared with those previously diagnosed, as well as healthy control subjects. **Methods:** This multicenter population-based case-finding study randomly recruited adults with respiratory symptoms who had no previous history of diagnosed lung disease from 17 Canadian centers using random digit dialing. Participants who exceeded symptom thresholds on the Asthma Screening Questionnaire or the COPD Diagnostic Questionnaire underwent pre- and post-bronchodilator spirometry to determine if they met diagnostic criteria for COPD or asthma. Two control groups, a healthy group without respiratory symptoms and a symptomatic group with previously diagnosed COPD or asthma, were similarly recruited. **Measurements and Main Results:** A total of 26,905 symptomatic individuals were interviewed, and 4,272 subjects were eligible. Of these, 2,857 completed pre- and post-bronchodilator spirometry, and 595 (21%) met diagnostic criteria for COPD or asthma. Individuals with undiagnosed COPD or asthma reported greater impact of symptoms on health status and daily activities, worse disease-specific and general quality of life, greater healthcare use, and poorer work productivity than healthy control subjects. Individuals with undiagnosed asthma had symptoms, quality of life, and healthcare use burden similar to those of individuals with previously diagnosed asthma, whereas subjects with undiagnosed COPD were less disabled than those with previously diagnosed COPD. **Conclusions:** Undiagnosed COPD or asthma imposes important, unmeasured burdens on the healthcare system and is associated with poor health status and negative effects on work productivity.

Keywords: COPD; asthma; case finding; early diagnosis.

Comment in

- Undiagnosed (or Unrecognized) Chronic Obstructive Pulmonary Disease and Asthma: Does Active Case Finding Identify Clinically Impaired Patients with Treatment Potential?
  Çolak Y.Am J Respir Crit Care Med. 2023 Dec 15;208(12):1255-1256. doi: 10.1164/rccm.202310-1793ED.PMID: 37934464 No abstract available.

31

Editorial

Thorax

. 2023 Dec 15;79(1):3-4.

doi: 10.1136/thorax-2023-220517.

Is antidepressant use a concern for patients with COPD?

Gianluca Trifirò[1], Salvatore Crisafulli[2]

Affiliations expand

- PMID: 37714536

- DOI: 10.1136/thorax-2023-220517

No abstract available

Keywords: COPD Exacerbations; COPD Pharmacology; Drug induced Lung Disease; Drug reactions.

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

32

Thorax

. 2023 Dec 15;79(1):50-57.

doi: 10.1136/thorax-2022-219736.

Association between antidepressants with pneumonia and exacerbation in patients with COPD: a self-controlled case series (SCCS)

Rayan A Siraj[1,2], Charlotte E Bolton[2], Tricia M McKeever[3]

Affiliations expand

- PMID: 37336642

- DOI: 10.1136/thorax-2022-219736

Abstract

Objective: To assess whether antidepressant prescriptions are associated with an increased risk of pneumonia and chronic obstructive pulmonary disease (COPD) exacerbation.

Methods: A self-controlled case series was performed to investigate the rates of pneumonia and COPD exacerbation during periods of being exposed to antidepressants compared with non-exposed periods. Patients with COPD with pneumonia or COPD

exacerbation and at least one prescription of antidepressant were ascertained from The Health Improvement Network in the UK. Incidence rate ratios (IRR) and 95% CI were calculated for both outcomes.

Results: Of 31 253 patients with COPD with at least one antidepressant prescription, 1969 patients had pneumonia and 18 483 had a COPD exacerbation. The 90-day risk period following antidepressant prescription was associated with a 79% increased risk of pneumonia (age-adjusted IRR 1.79, 95% CI 1.54 to 2.07). These associations then disappeared once antidepressants were discontinued. There was a 16% (age-adjusted IRR 1.16, 95% CI 1.13 to 1.20) increased risk of COPD exacerbation within the 90 days following antidepressant prescription. This risk persisted and slightly increased in the remainder period ((age-adjusted IRR 1.38, 95% CI 1.34 to 1.41), but diminished after patients discounted the treatment.

Conclusion: Antidepressants were associated with an increased risk of both pneumonia and exacerbation in patients with COPD, with the risks diminished on stopping the treatment. These findings suggest a close monitoring of antidepressant prescription side effects and consideration of non-pharmacological interventions.

Keywords: COPD Exacerbations; COPD epidemiology.

Conflict of interest statement

Competing interests: All authors have completed the International Committee of Medical Journal Editors (ICMJE) Form for Disclosure of Potential Conflicts of Interest (available on request from the corresponding author) and declare that the following: CEB reports grants from BLF Early COPD Study—various pharma, grants from Pfizer, grants from GSK, other from Chiesi, outside the submitted work; and no financial relationship with any organisation that might have an interest in the submitted work in the previous three years, no other relationship or activity that could appear to have influenced the submitted work.

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

1
Int J Older People Nurs

. 2023 Dec 15:e12595.

doi: 10.1111/opn.12595. Online ahead of print.

Spanish version of the Maastricht Personal Autonomy Questionnaire: A validation study among community-dwelling older adults with chronic multimorbidity

José Manuel Hernández-Padilla[1], Iria Dobarrio-Sanz[1], Matías Correa-Casado[1], María Del Mar Jiménez-Lasserrotte[1], Cayetano Fernández-Sola[1,2], María Dolores Ruiz-Fernández[1]

Affiliations expand

- PMID: 38102809

- DOI: 10.1111/opn.12595

Abstract

Background: Loss of personal autonomy in older adults with chronic multimorbidity is associated with worsened biopsychosocial health. In order to facilitate the standardised assessment of personal autonomy in older adults with chronic conditions, nurses could use the Maastricht Personal Autonomy Questionnaire (MPAQ).

Objective: To translate, culturally adapt and psychometrically assess the Spanish version of the MPAQ in community-dwelling older adults with chronic multimorbidity (MPAQ-Sp).

Methods: Observational cross-sectional study. A convenience sample of 884 community-dwelling older adults was recruited from 10 community centres in five health districts in southeastern Spain. Data were collected between January 2021 and September 2022. The study was completed in four phases. Phase 1: The MPAQ was translated into Spanish. Phase 2: A pilot test of reliability and content validity was conducted. Phase 3: To test the dimensionality of the tool, an exploratory factor analysis (EFA) was conducted. Phase 4: a final validation study was conducted which included a confirmatory factor analysis (CFA)

and assessed the validity (content, criterion and construct), reliability and readability of the MPAQ-Sp.

Results: The average age of the sample was 75.89 years (SD = ±8.04). Their mean number of chronic conditions was 4.84 (SD = ±2.19) and 67% were women. The MPAQ-Sp is comprised of 16 items distributed in four subscales: [1] the 'Degree of autonomy' scale, [2] the 'Working on autonomy' scale, [3] the 'Dilemmas: health over preferences' scale and [4] the 'Dilemmas: preferences over health' scale.

Conclusions: The Spanish version of the MPAQ-Sp is a valid and reliable instrument to assess personal autonomy in Spanish-speaking, community-dwelling older adults with chronic multimorbidity.

Implications for practice: The use of the MPAQ-Sp would allow researchers and healthcare professionals to identify a loss of personal autonomy among Spanish-speaking community-dwelling older adults with chronic multimorbidity.

Keywords: autonomy; chronic illness; elderly; multimorbidity; psychometrics; validity.

- 47 references

SUPPLEMENTARY INFO

Grants and fundingexpand

FULL TEXT LINKS

Proceed to details

Cite

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2

BMC Health Serv Res

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. 2023 Dec 15;23(1):1422.

doi: 10.1186/s12913-023-10401-1.

The economic impact of a local, collaborative, stepped, and personalized care management for older people with chronic diseases: results from the randomized comparative effectiveness LoChro-trial

Klaus Kaier[#1], Gloria Metzner[#2], Lukas Horstmeier[2], Eva Maria Bitzer[3], Bernhard Heimbach[4], Jasmin Kiekert[5], Sebastian Voigt-Radloff[2,4], Erik Farin-Glattacker[2]

Affiliations expand

- PMID: 38102609

- DOI: 10.1186/s12913-023-10401-1

Abstract

Background: Within the ageing population of Western societies, an increasing number of older people have multiple chronic conditions. Because multiple health problems require the involvement of several health professionals, multimorbid older people often face a fragmented health care system. To address these challenges, in a two-group parallel randomized controlled trial, a newly developed care management approach (LoChro-Care) was compared with usual care.

Methods: LoChro-Care consists of individualized care provided by chronic care managers with 7 to 16 contacts over 12 months. Patients aged 65 + with chronic conditions were recruited from inpatient and outpatient departments. Healthcare utilization costs are calculated by using an adapted version of the generic, self-reporting FIMA©-questionnaire with the application of standardized unit costs. Questionnaires were given at 3 time points (T_0 baseline, T_1 after 12 months, T_2 after 18 months). The primary outcome was overall 3-month costs of healthcare utilization at T_1 and T_2. The data were analyzed using generalized linear models with log-link and gamma distribution and adjustment for age, sex, level of care as well as the 3-month costs of care at T_0.

Results: Three hundred thirty patients were analyzed. The results showed no significant difference in the costs of healthcare utilization between participants who received LoChro-

Care and those who received usual care, regardless of whether the costs were evaluated 12 (adjusted mean difference € 130.99, 95%CI €-1477.73 to €1739.71, p = 0.873) or 18 (adjusted mean difference €192.99, 95%CI €-1894.66 to €2280.65, p = 0.856) months after the start of the intervention.

Conclusion: This study revealed no differences in costs between older people receiving LoChro-Care or usual care. Before implementing the intervention, further studies with larger sample sizes are needed to provide robust evidence on the cost effects of LoChro-Care.

Trial registration: German Clinical Trials Register (DRKS): DRKS00013904, https://drks.de/search/de/trial/DRKS00013904 ; date of first registration 02/02/2018.

Keywords: Cost of care; Cost-effectiveness; Economic evaluation; Integrated care; Multimorbidity; RCT.

- 28 references

3

Environ Sci Pollut Res Int

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. 2023 Dec 15.

doi: 10.1007/s11356-023-31505-5. Online ahead of print.

Long-term impact of $PM_{2.5}$ exposure on frailty, chronic diseases, and multimorbidity among middle-aged

and older adults: insights from a national population-based longitudinal study

Junjie Lin[1], Yu Zhang[1], Kunyi Wang[1], Huilin Xia[1], Minxia Hua[1], Kexin Lu[1], Weijun Zheng[2], Rucheng Chen[3]

Affiliations expand

- PMID: 38097844

- DOI: 10.1007/s11356-023-31505-5

Abstract

Particulate Matter 2.5 ($PM_{2.5}$) is a significant risk factor for frailty and chronic diseases. Studies on the associations between $PM_{2.5}$ and frailty, chronic diseases, and multimorbidity are scarce, especially from large cohort studies. We aimed to explore the potential association between $PM_{2.5}$ exposure and the risk of frailty, chronic diseases, and multimorbidity. We collected data from a national cohort (CHARLS) with a follow-up period of 11-18 years, totaling 13,366 participants. We obtained $PM_{2.5}$ concentration data from the Atmospheric Composition Analysis Group at Dalhousie University. $PM_{2.5}$ exposure is based on the average annual concentration in the prefecture-level city where residents live. We define frailty as the comprehensive manifestation of declining various body functions, characterized by a frailty index of 0.25 or greater, and multimorbidity as the presence of at least two or more chronic conditions. Cox proportional hazards regression was used to estimate the hazard ratio (HR) with its 95% confidence interval (95%CI). A 10-$\mu g/m^3$ increase for $PM_{2.5}$ was significantly associated with an increased risk of frailty (HR = 1.289, 95%CI = 1.257-1.322, P < 0.001). A 10-$\mu g/m^3$ increase for $PM_{2.5}$ was significantly associated with the elevated risk for most chronic diseases. Compared to those with no morbidity or only single morbidity, a 10-$\mu g/m^3$ increase for $PM_{2.5}$ was significantly associated with the elevated risk for multimorbidity (HR = 1.220, 95%CI = 1.181-1.260, P < 0.001). Ambient $PM_{2.5}$ exposure is a significant risk factor for frailty, chronic diseases, and multimorbidity, and some measures need to be taken to reduce $PM_{2.5}$ concentration and prevent frailty and chronic diseases.

Keywords: Chronic diseases; Frailty; Multimorbidity; Particulate Matter 2.5; Public health.

- 51 references

SUPPLEMENTARY INFO

Grants and fundingexpand

FULL TEXT LINKS

Proceed to details

Cite

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4

Open Heart

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. 2023 Dec 14;10(2):e002552.

doi: 10.1136/openhrt-2023-002552.

Multimorbidity of cardiovascular disease subtypes in a prospective cohort of 1.2 million UK women

Jae Won Suh[1,2], Sarah Floud[3], Gillian K Reeves[3], Benjamin J Cairns[4,5], Frances Lucy Wright[6]

Affiliations expand

- PMID: 38097361

- DOI: 10.1136/openhrt-2023-002552

Free article

Abstract

Objective: Cardiovascular multimorbidity (CVM) is the co-occurrence of multiple cardiovascular disease subtypes (CVDs) in one person. Because common patterns and incidence of CVM are not well-described, particularly in women, we conducted a descriptive study of CVM in the Million Women Study, a large population-based cohort of women.

Methods: UK women aged 50-64 years were followed up using hospital admissions and mortality records for an average of 19 years. CVM was defined as having ≥2 of 19 selected CVDs. The age-specific cumulative incidence of CVM between age 60 and 80 years was estimated. The numbers and proportions of individual, pairs and other combinations of CVDs that comprised incident CVM were calculated. For each individual CVD subtype, age-standardised proportions of the counts of other co-occurring CVDs were estimated.

Results: The age-specific likelihood of having CVM nearly doubled every 5 years between age 60 and 80 years. Among 1.2 million women without CVD at study baseline, 16% (n=196 651) had incident CVM by the end of follow-up. Around half of all women with CVM had a diagnosis of ischaemic heart disease (n=102 536) or atrial fibrillation (n=96 022), almost a third had heart failure (n=72 186) and a fifth had stroke (n=40 442). The pair of CVDs with the highest age-adjusted incidence was ischaemic heart disease and atrial fibrillation (18.95 per 10 000 person-years). Over 60% of individuals with any given CVD subtype also had other CVDs, after age standardisation.

Conclusions: CVM is common. The majority of women with any specific CVD subtype eventually develop at least one other. Clinical and public health guidelines for CVD management should acknowledge this high likelihood of CVM.

Keywords: arrhythmias, cardiac; coronary artery disease; electronic health records; epidemiology; stroke.

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

Proceed to details

5

Med Care

. 2023 Dec 11.

doi: 10.1097/MLR.0000000000001962. Online ahead of print.

Combining the Hospital Frailty Risk Score With the Charlson and Elixhauser Multimorbidity Indices to Identify Older Patients at Risk of Poor Outcomes in Acute Care

Thomas Gilbert[1,2], Quentin Cordier[3], Stéphanie Polazzi[2,3], Andrew Street[4], Simon Conroy[5], Antoine Duclos[2,3]

Affiliations expand

- PMID: 38079225

- DOI: 10.1097/MLR.0000000000001962

Abstract

Objective: The Hospital Frailty Risk Score (HFRS) can be applied to medico-administrative datasets to determine the risks of 30-day mortality and long length of stay (LOS) in hospitalized older patients. The objective of this study was to compare the HFRS with Charlson and Elixhauser comorbidity indices, used separately or combined.

Design: A retrospective analysis of the French medical information database. The HFRS, Charlson index, and Elixhauser index were calculated for each patient based on the index stay and hospitalizations over the preceding 2 years. Different constructions of the HFRS

were considered based on overlapping diagnostic codes with either Charlson or Elixhauser indices. We used mixed logistic regression models to investigate the association between outcomes, different constructions of HFRS, and associations with comorbidity indices.

Setting: 743 hospitals in France.

Participants: All patients aged 75 years or older hospitalized as an emergency in 2017 (n=1,042,234).Main outcome measures: 30-day inpatient mortality and LOS >10 days.

Results: The HFRS, Charlson, and Elixhauser indices were comparably associated with an increased risk of 30-day inpatient mortality and long LOS. The combined model with the highest c-statistic was obtained when associating the HFRS with standard adjustment and Charlson for 30-day inpatient mortality (adjusted c-statistics: HFRS=0.654; HFRS + Charlson = 0.676) and with Elixhauser for long LOS (adjusted c-statistics: HFRS= 0.672; HFRS + Elixhauser =0.698).

Conclusions: Combining comorbidity indices and HFRS may improve discrimination for predicting long LOS in hospitalized older people, but adds little to Charlson's 30-day inpatient mortality risk.

Conflict of interest statement

The authors declare no conflict of interest.

- 51 references

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

1
BMJ Open Respir Res

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. 2023 Dec 14;10(1):e002003.

doi: 10.1136/bmjresp-2023-002003.

Strong and graded associations between level of asthma severity and all-cause hospital care use and costs in the UK

Anya Jacobs[1,2], Runguo Wu[1], Florian Tomini[1,2], Anna De Simoni[2,3], Borislava Mihaylova[4,2,5]

Affiliations expand

- PMID: 38101812

- DOI: 10.1136/bmjresp-2023-002003

Abstract

Background: Hospital admissions account for a large share of the healthcare costs incurred by people with asthma. We assessed the hospital care use and costs associated with asthma severity using the UK Biobank cohort and linked healthcare data.

Methods: Adult participants with asthma at recruitment were classified using their prescription data into mild and moderate-to-severe asthma and matched separately to asthma-free controls by age, sex, ethnicity and location. The associations of asthma, by severity, with the annual number of all-cause hospital admissions, days spent in hospital and hospital costs were estimated over a 10-year follow-up period using three specifications of negative binomial regression models that differed according to the sociodemographic and clinical characteristics adjusted for.

Results: Of the 25 031 participants with active asthma, 80% had mild asthma and 20% had moderate-to-severe asthma. Compared with participants with mild asthma, those with moderate-to-severe asthma were on average 2.7 years older, more likely to be current (13.7% vs 10.4%) or previous (40.2% vs 35.2%) smokers, to have a higher body mass index (BMI), and to be suffering from a variety of comorbid diseases. Following adjustments for age, sex, ethnicity and location, people with mild asthma experienced on average 36% more admissions (95% CI 28% to 40%), 43% more days in hospital (95% CI 35% to 51%) and 36% higher hospital costs (95% CI 31% to 41%) annually than asthma-free individuals, while people with moderate-to-severe asthma experienced excesses of 93% (95% CI 81% to 107%), 142% (95% CI 124% to 162%) and 98% (95% CI 88% to 108%), respectively. Further adjustments for socioeconomic deprivation, smoking status, BMI and comorbidities resulted in smaller though still highly significant positive associations, graded by severity, between asthma and hospital use and costs.

Conclusions: Strong graded associations are reported between asthma severity and the extent of hospital use and costs in the UK. These findings could inform future assessments of the value of asthma management interventions.

Keywords: Asthma; Health Economist.

Conflict of interest statement

Competing interests: None declared.

2

Respir Med

. 2023 Dec 13:107495.

doi: 10.1016/j.rmed.2023.107495. Online ahead of print.

Gastroesophageal reflux and snoring are related to asthma and respiratory symptoms: Results from a Nordic longitudinal population survey

Rima Mir Fakhraei[1], Eva Lindberg[1], Bryndís Benediktsdóttir[2], Cecilie Svanes[3], Ane Johannessen[4], Mathias Holm[5], Lars Modig[6], Karl A Franklin[7], Andrei Malinovschi[8], Thorarinn Gislason[9], Rain Jõgi[10], Christine Cramer[11], Christer Janson[1], Össur Ingi Emilsson[12]

Affiliations expand

- PMID: 38101459

- DOI: 10.1016/j.rmed.2023.107495

Abstract

Aim: To study if individuals with nocturnal gastroesophageal reflux (nGER) and habitual snoring are more likely to develop asthma and respiratory symptoms (i.e. wheeze, cough, chest tightness, breathlessness) than those without these conditions, and if these associations are additive.

Methods: We used data from the population-based prospective questionnaire study Respiratory Health in Northern Europe (RHINE) (11,024 participants), with data from 1999 and 2011. Participants with heartburn or belching after going to bed, at least 1 night/week, were considered to have nGER. Participants reporting loud snoring at least 3 nights/week were considered to have habitual snoring. Participants were grouped into four groups by their nGER and snoring status: "never"; "former"; "incident"; "persistent". Incident respiratory symptoms were analyzed among participants without respective symptom at baseline.

Results: Snoring and nGER were independently associated with incident asthma and respiratory symptoms. The risk of incident wheeze was increased in subjects with incident or persistent snoring (adjusted odds ratio (95 % CI): 1.44 (1.21-1.72)), nGER (2.18 (1.60-2.98)) and in those with both snoring and nGER (2.59 (1.83-3.65)). The risk of developing asthma was increased in subjects with incident or persistent snoring (1.44 (1.15-1.82)), nGER (1.99 (1.35-2.93)) and in those with both snoring and nGER (1.72 (1.06-2.77)). No significant interaction was found between snoring and nGER. A similar pattern was found for the incidence of all other respiratory symptoms studied, with the highest risk among those with both incident or persistent nGER and snoring.

Conclusion: The risk of developing asthma and respiratory symptoms is increased among subjects with nGER and habitual snoring. These associations are independent of each other and confounding factors. Snoring and nGER together are additive on respiratory symptoms.

Keywords: Asthma; Epidemiology; Habitual snoring; Nocturnal gastroesophageal reflux; Respiratory symptom.

Conflict of interest statement

Declaration of competing interest The authors have no conflicts of interest to declare.

3

Eur Respir J

. 2023 Dec 14:2300471.

doi: 10.1183/13993003.00471-2023. Online ahead of print.

Bacterial Colonization of the Airway in Neonates and Risk of Asthma and Allergy Until Age 18 Years

Rikke Bjersand Sunde MD PhD[1,2], Jonathan Thorsen MD PhD[1], Min Kim MSc PhD[1], Ann-Marie Malby Schoos MD PhD[1,2], Jakob Stokholm MD PhD[1,2,3], Klaus Bønnelykke MD PhD[1], Hans Bisgaard MD DMSc[1,4], Bo Chawes MD PhD DMSc[5]

Affiliations expand

- PMID: 38097209

- DOI: 10.1183/13993003.00471-2023

Abstract

Background: We previously showed an association between neonatal bacterial airway colonization and increased risk of persistent wheeze/asthma until age 5 years. Here, we study the association with persistent wheeze/asthma and allergy-related traits until age 18 years.

Methods: We investigated the association between airway colonization with *S. pneumoniae*, *H. influenzae*, and/or *M. catarrhalis* in one-month-old neonates from the COPSAC$_{2000}$ mother-child cohort and the development of persistent wheeze/asthma and allergy-related traits longitudinally until age 18 using generalized estimating equations. Replication was sought in the similarly designed COPSAC$_{2010}$ cohort of 700 children.

Results: Neonatal airway colonization was present in 66 (21%) of 319 children and was associated with a 4-fold increased risk of persistent wheeze/asthma (adjusted odds ratio, 4.01 (95% CI, 1.76-9.12, p<0.001)) until age 7, but not from age 7 to 18 years. Replication in the COPSAC$_{2010}$ cohort showed similar results using 16S data. Colonization was associated with an increased number of exacerbations (adjusted incidence rate ratio, 3.20 (1.38-7.44, p<0.01)) until age 7, but not from age 7 to 18 years. Colonization was associated with increased level of blood eosinophils (adjusted geometric mean ratio, 1.24 (1.06-1.44), p<0.01) and TNF-α (adjusted geometric mean ratio, 1.09 (1.02; 1.16), p=0.01) until age 12 years. There were no associations with lung function, bronchial reactivity, FeNO, allergic sensitization, total-IgE, or atopic dermatitis up to age 18 years.

Conclusions: Neonatal airway colonization was associated with early-onset persistent wheeze/asthma, exacerbations, elevated blood eosinophils, and elevated TNF-α in blood, most prominent in early childhood, thereafter diminishing, and no longer evident by age 18.

Editorial

Eur Respir J

. 2023 Dec 14;62(6):2301844.

doi: 10.1183/13993003.01844-2023. Print 2023 Dec.

Clinical remission with biologic therapies in severe asthma: a matter of definition

Richard Beasley[1,2], Jonathan Noble[3,2], Mark Weatherall[4]

Affiliations expand

- PMID: 38097202

- DOI: 10.1183/13993003.01844-2023

No abstract available

Conflict of interest statement

Conflict of interest: R. Beasley has received institutional research funding from AstraZeneca, Cure Kids (NZ), Genentech and the Health Research Council of NZ, and personal fees from AstraZeneca, Avillion, Teva Pharmaceuticals and Cipla, outside the submitted work. R. Beasley is chair of the Asthma Foundation of New Zealand adolescent and adult asthma guidelines group. J. Noble and M. Weatherall have no conflicts of interest to declare.

Comment on

- Clinical remission in severe asthma with biologic therapy: an analysis from the UK Severe Asthma Registry.
  McDowell PJ, McDowell R, Busby J, Eastwood MC, Patel PH, Jackson DJ, Mansur A, Patel M, Burhan H, Doe S, Chaudhuri R, Gore R, Dodd JW, Subramanian D, Brown T, Heaney LG; UK Severe Asthma Registry.Eur Respir J. 2023 Dec 14;62(6):2300819. doi: 10.1183/13993003.00819-2023. Print 2023 Dec.PMID: 37857423 **Free PMC article.**

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

5

J Allergy Clin Immunol Pract

. 2023 Dec 12:S2213-2198(23)01356-9.

doi: 10.1016/j.jaip.2023.12.010. Online ahead of print.

Association of sputum eosinophilia with easily measured type-2 inflammatory biomarkers in untreated mild persistent asthma

Ronina Covar[1], Stephen C Lazarus[2], Jerry A Krishnan[3], Kathryn V Blake[4], Christine A Sorkness[5], Anne-Marie Dyer[6], Jason E Lang[7], Njira L Lugogo[8], David T Mauger[6], Michael E Wechsler[9], Sally E Wenzel[10], Juan Carlos Cardet[11], Mario Castro[12], Elliot Israel[13], Wanda Phipatanakul[14], Tonya S King[6]; National Heart, Lung, and Blood Institute AsthmaNet

Affiliations expand

- PMID: 38097180

- DOI: 10.1016/j.jaip.2023.12.010

Abstract

Rationale: A multi-center clinical trial in patients with mild persistent asthma indicated that response to inhaled corticosteroids (ICS) is limited to those with sputum eosinophilia. However, testing for sputum eosinophilia is impractical in most clinical settings.

Objective: We examined associations between sputum eosinophilia and T2 biomarkers in untreated mild persistent asthma.

Methods: Induced sputum, blood eosinophil count (BEC), fractional exhaled nitric oxide (FeNO), and serum periostin were obtained twice during the 6-week run-in period in a clinical trial which enrolled patients ≥12 years with symptomatic, mild persistent asthma without controller therapy. The optimal threshold for each biomarker was based on achieving ≥ 80% sensitivity. Performance of biomarkers (area under the receiver operating characteristics curve [AUC], range 0.0 to 1.0) in predicting sputum eosinophilia ≥2% was determined; AUCs of 0.8-0.9 and more than 0.9 define "excellent" and "outstanding" discrimination, respectively.

Results: Of 564 participants, 27% were sputum eosinophilic, 83% were atopic, 70% had BEC>200 /uL or FeNO>25 ppb; 64% of participants without sputum eosinophilia had elevated BEC or FeNO. The AUCs for BEC, FeNO, and both together in predicting sputum eosinophilia were all below the threshold for "excellent" discrimination (AUC 0.75, 0.78, and 0.79, respectively). Periostin (in adults) had poor discrimination (AUC 0.59, p=0.02).

Conclusion: In untreated mild persistent asthma, there is substantial discordance between sputum eosinophilia, BEC, and FENO. Until prospective trials test the ability of alternative biomarkers to predict ICS response, BEC or FeNO phenotyping may be an option to consider ICS through a shared decision making process with consideration of other clinical features.

Keywords: asthma management; eosinophil; inflammation; phenotype.

J Allergy Clin Immunol Pract

. 2023 Dec 12:S2213-2198(23)01360-0.

doi: 10.1016/j.jaip.2023.12.013. Online ahead of print.

Should airway hyperresponsiveness be included in the definition of clinical remission with biologic therapy in severe asthma

Brian Lipworth[1], Chris RuiWen Kuo[2], Kirsten Stewart[2], Rory Chan[2]

Affiliations expand

- PMID: 38097177

- DOI: 10.1016/j.jaip.2023.12.013

No abstract available

Keywords: airway hyperresponsiveness; asthma; biologic; remission.

7

Review

J Med Internet Res

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. 2023 Dec 14:25:e46929.

doi: 10.2196/46929.

Identifying Existing Evidence to Potentially Develop a Machine Learning Diagnostic Algorithm for Cough in Primary Care Settings: Scoping Review

Julia Cummerow[#1], Christin Wienecke[#1], Nicola Engler[#1], Philip Marahrens[1], Philipp Gruening[2], Jost Steinhäuser[1]

Affiliations expand

- PMID: 38096024

- DOI: 10.2196/46929

Free article

Abstract

Background: Primary care is known to be one of the most complex health care settings because of the high number of theoretically possible diagnoses. Therefore, the process of clinical decision-making in primary care includes complex analytical and nonanalytical factors such as gut feelings and dealing with uncertainties. Artificial intelligence is also mandated to offer support in finding valid diagnoses. Nevertheless, to translate some aspects of what occurs during a consultation into a machine-based diagnostic algorithm, the probabilities for the underlying diagnoses (odds ratios) need to be determined.

Objective: Cough is one of the most common reasons for a consultation in general practice, the core discipline in primary care. The aim of this scoping review was to identify the available data on cough as a predictor of various diagnoses encountered in general practice. In the context of an ongoing project, we reflect on this database as a possible basis for a machine-based diagnostic algorithm. Furthermore, we discuss the applicability of such an algorithm against the background of the specifics of general practice.

Methods: The PubMed, Scopus, Web of Science, and Cochrane Library databases were searched with defined search terms, supplemented by the search for gray literature via the German Journal of Family Medicine until April 20, 2023. The inclusion criterion was the explicit analysis of cough as a predictor of any conceivable disease. Exclusion criteria were articles that did not provide original study results, articles in languages other than English or German, and articles that did not mention cough as a diagnostic predictor.

Results: In total, 1458 records were identified for screening, of which 35 articles met our inclusion criteria. Most of the results (11/35, 31%) were found for chronic obstructive pulmonary disease. The others were distributed among the diagnoses of asthma or unspecified obstructive airway disease, various infectious diseases, bronchogenic carcinoma, dyspepsia or gastroesophageal reflux disease, and adverse effects of angiotensin-converting enzyme inhibitors. Positive odds ratios were found for cough as a predictor of chronic obstructive pulmonary disease, influenza, COVID-19 infections, and bronchial carcinoma, whereas the results for cough as a predictor of asthma and other nonspecified obstructive airway diseases were inconsistent.

Conclusions: Reliable data on cough as a predictor of various diagnoses encountered in general practice are scarce. The example of cough does not provide a sufficient database to contribute odds to a machine learning-based diagnostic algorithm in a meaningful way.

Keywords: artificial intelligence; cough; differential diagnosis; predictor; primary health care.

8

World Allergy Organ J

. 2023 Dec 12;16(12):100848.

doi: 10.1016/j.waojou.2023.100848. eCollection 2023 Dec.

A comparison of treatment response to biologics in asthma–COPD overlap and pure asthma: Findings from the PRISM study

Ji-Su Shim[1], Hyunkyoung Kim[2], Jae-Woo Kwon[3], So-Young Park[4], Sujeong Kim[5], Byung-Keun Kim[6], Young-Hee Nam[7], Min-Suk Yang[8], Mi-Yeong Kim[9], Sae-Hoon Kim[10], Byung-Jae Lee[11], Taehoon Lee[12], Sang-Ha Kim[13], So Young Park[14], Young-Joo Cho[1], Chan Sun Park[15], Jae-Woo Jung[16], Han-Ki Park[5,17], Joo-Hee Kim[18], Jeong-Hee Choi[19], Ji-Yong Moon[20], Ian Adcock[21], Kian Fan Chung[21], Min-Hye Kim[1], Tae-Bum Kim[2]; Precision Intervention in Severe Asthma (PRISM) study investigatorsa

Affiliations expand

- PMID: 38093952

- PMCID: PMC10716772

- DOI: 10.1016/j.waojou.2023.100848

Abstract

Background: Despite the increasing use of biologics in severe asthma, there is limited research on their use in asthma-chronic obstructive pulmonary disease overlap (ACO). We compared real-world treatment responses to biologics in ACO and asthma.

Methods: We conducted a multicenter, retrospective, cohort study using data from the Precision Medicine Intervention in Severe Asthma (PRISM). ACO was defined as post-bronchodilator forced expiratory volume in 1 s (FEV1)/forced vital capacity (FVC) <0.7 and a smoking history of >10 pack-years. Physicians selected biologics (omalizumab, mepolizumab, reslizumab, benralizumab, and dupilumab) based on each United States Food & Drug Administration (FDA) approval criteria.

Results: After six-month treatment with biologics, both patients with ACO (N = 13) and asthma (N = 81) showed positive responses in FEV1 (10.69 ± 17.17 vs. 11.25 ± 12.87 %, P = 0.652), Asthma Control Test score (3.33 ± 5.47 vs. 5.39 ± 5.42, P = 0.290), oral corticosteroid use (-117.50 ± 94.38 vs. -115.06 ± 456.85 mg, P = 0.688), fractional exhaled nitric oxide levels (-18.62 ± 24.68 vs. -14.66 ± 45.35 ppb, P = 0.415), sputum eosinophils (-3.40 ± 10.60 vs. -14.48 ± 24.01 %, P = 0.065), blood eosinophils (-36.47 ± 517.02 vs. -

363.22 ± 1294.59, P = 0.013), and exacerbation frequency (-3.07 ± 4.42 vs. -3.19 ± 5.11, P = 0.943). The odds ratio for exacerbation and time-to-first exacerbation showed no significant difference after full adjustments, and subgroup analysis according to biologic type was also showed similar results.

Conclusions: Biologics treatment response patterns in patients with ACO and asthma were comparable, suggesting that biologics should be actively considered for ACO patients as well.

Keywords: Asthma; Asthma-COPD overlap; Biologics; Monoclonal antibodies; Treatment response.

Conflict of interest statement

The authors declare that they have no competing interests.

- 34 references
- 2 figures

9

Korean J Intern Med

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. 2023 Dec 14.

doi: 10.3904/kjim.2023.036. Online ahead of print.

Sex differences in chronic obstructive pulmonary disease characteristics: the

Korea National Health and Nutrition Examination Survey 2007-2018

Moon Seong Baek[1], Haegwang Shin[1], Kang-Mo Gu[1], Hae In Jung[1], Won Young Kim[1], Jae-Woo Jung[1], Jong-Wook Shin[1], Sun-Young Jung[2], Jae-Yeol Kim[1]

Affiliations expand

- PMID: 38092558

- DOI: 10.3904/kjim.2023.036

Free article

Abstract

Background/aims: Chronic obstructive pulmonary disease (COPD) is less prevalent in females than males, but it affects mortality in females. There may be sex differences in the clinical characteristics of COPD.

Methods: We analyzed the Korea National Health and Nutrition Examination Survey dataset from 2007 to 2018. We compared the clinical characteristics and comorbidities in subjects with COPD according to sex. We adjusted the multivariate logistic regression of lung cancer prevalence according to COPD and sex by age and smoking amount.

Results: Females with COPD tended to be older than males with COPD (64.1 ± 0.4 yr vs. 62.3 ± 0.2 yr, respectively, $p < 0.001$). Approximately 89% of males with COPD had a smoking history, while 86% of females with COPD were non-smokers ($p < 0.001$). Household income was lower ($p < 0.001$) and asthma and overall malignancy were more prevalent in females with COPD than males with COPD (25.5 vs. 11.6%, respectively, $p < 0.001$; (6.3 vs. 5.4%, respectively, $p < 0.001$). However, lung cancer was more common in males with COPD than females with COPD (0.9 vs. 0.1%, respectively, $p < 0.001$). Lung cancer prevalence increased in males with moderate COPD compared to subjects without COPD (OR, 4.409; 95% CI, 1.741-9.419).

Conclusions: Females with COPD had a lower smoking rate, household income, and lung cancer prevalence than males with COPD. More active COPD screening is needed for women of low socioeconomic status, even if they do not smoke.

Keywords: Lung neoplasm; Pulmonary disease, chronic obstructive; Sex; Smoking.

10

BMJ Open Qual

. 2023 Dec 12;12(4):e002403.

doi: 10.1136/bmjoq-2023-002403.

Opportunities to improve asthma and COPD prevention and care: insights from the patient journey obtained through focus groups

Aneisha Collins-Fairclough[1,2], Karen Rideout[2,3], Phalgun Joshi[2,3], Jeremiah Philips[2], Tony Lanier[4], Santa Chow[4], Dan Smith[4], Alison Hoens[5], J Mark FitzGerald[1,3], Chris Rauscher[2], Nardia Strydom[6,7], Christopher Carlsten[8,2]

Affiliations expand

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- DOI: 10.1136/bmjoq-2023-002403

Free article

Abstract

Background: The healthcare experiences of patients hold valuable insights for improving the quality of services related to their well-being. We therefore invited and explored the perspectives of patients living with asthma and chronic obstructive pulmonary disease

(COPD) on their interaction with the systems supporting health, in order to identify opportunities to improve services to prevent, treat and manage these conditions.

Methods: Two virtual focus groups were held in August 2021, one for adult asthma and one for COPD, to learn of patients' experiences receiving care for these conditions in the Vancouver Coastal Health (VCH) region of British Columbia. Participants were recruited through online postings or their clinician. We discussed the care pathway for each condition and invited participants to share their experiences of the past 5 years, specifically their reflections on the process, including feelings, points of praise and frustration, and opportunities for improvement in this context. Composite patient journey maps were developed for each condition to reflect the experiences shared. Audio recordings of the focus groups were transcribed and used in qualitative data analysis.

Results: Thematic analysis revealed the following as possible areas for improvement: low public awareness of asthma and COPD and associated risk factors, non-standardised diagnosis pathways that delay diagnosis, and inconsistency in delivering valued aspects of care such as supports for self-management, trust-inspiring acute care, empowering patient communication and timely access to care.

Conclusion: We successfully used focus groups to generate composite journey maps of the experiences of patients living with asthma (n=8) and COPD (n=9) to identify features that these patients consider important for improving the healthcare system for asthma and COPD in VCH. Health professionals, decision makers and patient advocates in VCH and beyond can consider these insights when evaluating, and planning changes to, current practices and policies in service delivery.

Keywords: Asthma; Chronic disease management; Patient Participation.

Conflict of interest statement

Competing interests: None declared.

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

Proceed to details

11

J Allergy Clin Immunol Pract

. 2023 Dec 11:S2213-2198(23)01352-1.

doi: 10.1016/j.jaip.2023.12.006. Online ahead of print.

Dupilumab Improves Lung Function Parameters in Pediatric Type 2 Asthma: VOYAGE study

Leonard B Bacharier[1], Theresa W Guilbert[2], Constance H Katelaris[3], Antoine Deschildre[4], Wanda Phipatanakul[5], Dongfang Liu[6], Arman Altincatal[7], Leda P Mannent[8], Nikhil Amin[9], Elizabeth Laws[10], Bolanle Akinlade[9], Juby A Jacob-Nara[9], Yamo Deniz[9], Paul J Rowe[10], David J Lederer[9], Megan Hardin[7]

Affiliations expand

- PMID: 38092225

- DOI: 10.1016/j.jaip.2023.12.006

Abstract

Background: Uncontrolled asthma in growing children can impair lung growth that may lead to adverse complications in later life. Dupilumab, a human monoclonal antibody, blocks the shared receptor for interleukins 4 and 13, key drivers of type 2 inflammation.

Objectives: To extensively evaluate the effect of dupilumab on lung function in children (6-11 years) with moderate-to-severe asthma enrolled in phase 3 LIBERTY ASTHMA VOYAGE (NCT02948959).

Methods: Children with asthma were randomized 2:1 to add-on dupilumab 200/100 mg by bodyweight or placebo every 2 weeks, for 52 weeks. We analyzed spirometry

parameters in children with type 2 asthma (blood eosinophils ≥150 cells/μL or fractional exhaled nitric oxide [FeNO] ≥20 parts per billion [ppb] at baseline), and within subgroups defined by baseline blood eosinophils or FeNO values.

Results: 116 (49%) of dupilumab-treated children and 59 (52%) on placebo had impaired lung function (pre-bronchodilator percent-predicted FEV_1 [$ppFEV_1$] <80%) at baseline. Dupilumab improved pre- and post-bronchodilator $ppFEV_1$ as early as week 2, sustained for up to 52 weeks (least squares mean difference vs placebo at week 52: 7.79 percentage points; 95% CI 4.36-11.22; P < .001 and 4.37 points; 95% CI 0.95-7.78; P = .01, respectively). Sustained improvements were also observed in other lung function parameters, including pre- and post-bronchodilator forced vital capacity (FVC), pre-bronchodilator forced expiratory flow, and FEV_1/FVC ratio across all populations.

Conclusions: Dupilumab led to significant, sustained lung function improvements across a range of lung function measures in children (6-11 years) with uncontrolled, moderate-to-severe type 2 asthma.

Keywords: Asthma control; Dupilumab; Lung function; Pediatric asthma; Type 2 Inflammation.

12

J Asthma

. 2023 Dec 13:1-13.

doi: 10.1080/02770903.2023.2294908. Online ahead of print.

The clinical effectiveness of mepolizumab treatment in severe eosinophilic asthma; outcomes from four years cohort evaluation

Christopher Reilly[1], Anandavelu Raja[1], Pillai Anilkumar[1], Julie Sullivan[1], Lisa White[1], Ali Bahron[1], Julie Marsh[1], Adel H Mansur[1,2]

Affiliations expand

- PMID: 38088937

- DOI: 10.1080/02770903.2023.2294908

Abstract

Background: Clinical trials and real world studies demonstrated benefit of mepolizumab treatment in severe asthma but data on its effectiveness beyond 2 years remain limited. Herein, we provide mepolizumab treatment evaluation up to 4 years.

Methods: we studied all patients initiated on mepolizumab in our centre from June 2017 to August 2018. Clinical outcomes data were retrieved from the local dendrite systems registry. Comparison analyses and logistic regression were conducted to explore longevity and predictors of response to mepolizumab treatment..

Results: a total of 66 patients initiated on mepolizumab with a median follow-up of 45.8 (42.4,48.1) months were included in the study [mean age 50.3 years (range 18-79), females 50 (73%)]. At 20.7 months of treatment, 42 patients (63.6%) had positive response, 13 (19.7%) negative response, and 11 (16.7%) discontinued due to other factors. At 45.8 months, 35 (53%) patients were still on mepolizumab, 21 (31.8%) switched to a different biologic, and 10 (15.2%) discontinued biologics. Two deaths were recorded during the study period.The median blood eosinophil was reduced from 0.43x10^9/L (0.27, 0.75) to 0.04 (0.0, 0.1) ($p < 0.00001$)]. The median annual exacerbations were reduced from 6.0 (4,8) to 1.0 (0.0,3.0) ($p < 0.00001$), and mOCS use was reduced from59% to 29%, $p = 0.001$. The mean asthma control questionnaire-6 (ACQ6) improved from 3.1 ± 1.7 to 2.1 ± 1.3 ($p < 0.00001$)..

Conclusions: mepolizumab clinical benefit was sustained over 4 years. However, approximately half of the cohort discontinued the treatment prompting the need for further research into the treatment response longevity.

Keywords: asthma; eosinophilia; exacerbation; mepolizumab; oral corticosteroids dependency; real world; severe; treatment response.

13

J Asthma

. 2023 Dec 13:1-19.

doi: 10.1080/02770903.2023.2294911. Online ahead of print.

Investigating the association between asthma and opioid use disorder with interactions of anxiety and depression among a national sample of the US population

Fares Qeadan[1], Ashlie McCunn[1], Benjamin Tingey[1], Ron PriceJr[1], Kathleen L Bobay[1], Ali Imran Saeed[2]

Affiliations expand

- PMID: 38088813

- DOI: 10.1080/02770903.2023.2294911

Abstract

Introduction: Previous studies have not examined the association between asthma and opioid use disorder (OUD) in a comprehensive national sample of the U.S. population. This study aims to investigate such an association.**Methods:** This is a matched retrospective cohort study, with a follow-up period of two years, utilizing longitudinal electronic medical records of a comprehensive national healthcare database in the U.S.-Cerner-Real World Data™. Patients selected for analysis were ≥12 years old with a hospital encounter between January 2000 and June 2020. Adjusted risk ratios (aRRs) of incident OUD for those with asthma compared to those without asthma were calculated using a modified Poisson regressions with robust standard errors via the Huber-White sandwich estimator, and results were stratified by comorbid mental illnesses.**Results:** Individuals with asthma had a greater risk of OUD compared to those without asthma (aRR = 2.12; 95% CI 2.03-2.23). When stratified by anxiety and depression status, individuals with asthma and no anxiety or depression had a greater risk of incident OUD compared to individuals with asthma and either anxiety, depression, or both. Additionally, individuals with asthma medication had 1.29 (95% CI: 1.24, 1.35) greater overall risk for incident OUD compared to those without medication. Independent of comorbid mental illnesses, individuals with asthma medication had greater risk for incident OUD compared to those without medication among individuals without severe/obstructive asthma.**Conclusions:** Individuals with asthma face a higher OUD risk compared to those without asthma. Comorbid mental illnesses modulate this risk. Caution is advised in opioid prescribing for asthma patients.

Keywords: anxiety; asthma; depression; opioid use disorder; severe/obstructive asthma.

14

Review

Respirology

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2023 Dec 12.

doi: 10.1111/resp.14644. Online ahead of print.

Treatable traits models of care

Vanessa M McDonald[1 2 3], Anne E Holland[1 4 5 6]

Affiliations expand

- PMID: 38087840

- DOI: 10.1111/resp.14644

Free article

Abstract

Treatable traits is a personalized approach to the management of respiratory disease. The approach involves a multidimensional assessment to understand the traits present in individual patients. Traits are phenotypic and endotypic characteristics that can be identified, are clinically relevant and can be successfully treated by therapy to improve clinical outcomes. Identification of traits is followed by individualized and targeted treatment to those traits. First proposed for the management of asthma and chronic obstructive pulmonary disease (COPD) the approach is recommended in many other areas of respiratory and now immunology medicine. Models of care for treatable traits have been proposed in different diseases and health care setting. In asthma and COPD traits are identified in three domains including pulmonary, extrapulmonary and behavioural/lifestyle/risk-factors. In bronchiectasis and interstitial lung disease, a fourth domain of aetiological traits has been proposed. As the core of treatable traits is personalized and individualized medicine; there are several key aspects to treatable traits models of care that should be considered in the delivery of care. These include person centredness, consideration of patients' values, needs and preferences, health literacy and engagement. We review the models of care that have been proposed and provide guidance on the engagement of patients in this approach to care.

Keywords: airway disease; asthma; chronic respiratory disease; model of care; treatable traits.

- 72 references

SUPPLEMENTARY INFO

Publication typesexpand

15

Review

BMC Public Health

. 2023 Dec 12;23(1):2488.

doi: 10.1186/s12889-023-17378-w.

Understanding for whom, under what conditions and how smoking cessation services for pregnant women in the United Kingdom work-a rapid realist review

Claire Tatton [1], Jenny Lloyd [2]

Affiliations expand

- PMID: 38087281
- PMCID: PMC10717267
- DOI: 10.1186/s12889-023-17378-w

Abstract

Background: Maternal smoking in pregnancy is associated with several adverse maternal and infant health outcomes including increased risk of miscarriage, stillbirth, low birth weight, preterm birth, and asthma. Progress to reduce rates of smoking at time of delivery in England have been slow and over the last decade, less than half of pregnant women who accessed services went onto report having quit. This realist review was undertaken to improve the understanding of how smoking cessation services in pregnancy work and to understand the heterogeneity of outcomes observed.

Methods: The initial programme theory was developed using the National Centre for Smoking Cession and Training Standard Treatment Programme for Pregnant Women and the National Institute for Health and Care Excellence guidance on treating tobacco dependency. A search strategy and inclusion criteria were developed. Four databases were searched to identify published papers and four websites were hand searched to identify any unpublished literature that could contribute to theory building. Realist logic was applied to the analysis of papers to identify the contexts in which the intended behaviour change mechanism(s) were triggered, or not, and towards what outcomes to develop context mechanism outcome configurations.

Results: The review included 33 papers. The analysis produced 19 context mechanism outcome configurations structured under five closely interconnected domains (i) articulating harm, (ii) promoting support, (iii) managing cravings, (iv) maintaining commitment and (v) building self-efficacy. This review identifies two key processes involved in how services achieve their effects: how material resources are implemented and relationships. Of the two key processes identified, more existing literature was available evidencing how material resources are implemented. However, the review provides some evidence that non-judgemental and supportive relationships with healthcare workers where regular contact is provided can play an important role in interrupting the social cues and social practice of smoking, even where those around women continue to smoke.

Conclusions: This review clarifies the range of interconnected and bi-directional relationships between services and the personal and social factors in women's lives. It underscores the importance of aligning efforts across the models five domains to strengthen services' ability to achieve smoking cessation.

Keywords: Pregnancy; Realist review; Smoking cessation; United Kingdom.

Conflict of interest statement

The authors declare no competing interests.

- 54 references
- 2 figures

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

16

Respiration

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. 2023 Dec 12:1-12.

doi: 10.1159/000535390. Online ahead of print.

Real-World Characteristics of Patients with Severe Asthma prior to Starting Dupilumab: The ProVENT Study

Stephanie Korn[1], Olaf Schmidt[2], Hartmut Timmermann[3], Henrik Watz[4], Monika Gappa[5], Amr Radwan[6], Lucia De Prado Gómez[7], Anne Atenhan[8], Sebastian Barbus[9], Mayank Thakur[10], Marek Lommatzsch[11]

Affiliations expand

- PMID: 38086344

- DOI: 10.1159/000535390

Abstract

Introduction: Dupilumab is approved for the treatment of severe type 2 (T2) asthma; however, the characteristics of patients receiving dupilumab in routine clinical practice are incompletely understood. This study describes the characteristics of patients with severe asthma before dupilumab treatment in a real-world setting.

Methods: This interim analysis of an ongoing real-life study of dupilumab assessed baseline characteristics of the first patient cohort enrolled in the ProVENT study.

Results: A total of 99 patients (59% females) were analyzed (17% received another biologic before dupilumab treatment and 15% were on maintenance oral corticosteroid treatment). Adult-onset asthma (>18 years) and an allergic phenotype were documented in 58% and 48% of patients, respectively. Median (interquartile range) age was 54 (40-61) years; the median number of exacerbations in the last 24 months was 1 (0-3); median fractional exhaled nitric oxide (FeNO) value was 38 (23-64) ppb; and median blood eosinophils (bEOS) count was 184 (8-505) cells/μL. According to the United Kingdom Severe Asthma Registry classification, 53% of patients had T2 intermediate asthma (bEOS ≥150 cells/μL or FeNO ≥25 ppb), 17% had T2 high asthma (bEOS ≥150 cells/μL and FeNO ≥25 ppb), and 4% had T2 low asthma (bEOS <150 cells/μL and FeNO <25 ppb). At least one GINA criterion for T2 airway inflammation was documented in 70% of patients. T2 comorbidities were observed in 64% of patients.

Conclusions: This analysis suggests that patients eligible for dupilumab treatment display various clinical and biochemical characteristics rather than one clear-cut phenotype.

Keywords: Blood eosinophils; Dupilumab; Fractional exhaled nitric oxide; ProVENT; Type 2 asthma.

. 2023 Dec 19;120(51):e2309325120.

doi: 10.1073/pnas.2309325120. Epub 2023 Dec 12.

Quantifying fire-specific smoke exposure and health impacts

Jeff Wen[1], Sam Heft-Neal[2], Patrick Baylis[3], Judson Boomhower[4 5], Marshall Burke[2 5 6]

Affiliations expand

- PMID: 38085772

- DOI: 10.1073/pnas.2309325120

Abstract

Rapidly changing wildfire regimes across the Western United States have driven more frequent and severe wildfires, resulting in wide-ranging societal threats from wildfires and wildfire-generated smoke. However, common measures of fire severity focus on what is burned, disregarding the societal impacts of smoke generated from each fire. We combine satellite-derived fire scars, air parcel trajectories from individual fires, and predicted smoke $PM_{2.5}$ to link source fires to resulting smoke $PM_{2.5}$ and health impacts experienced by populations in the contiguous United States from April 2006 to 2020. We quantify fire-specific accumulated smoke exposure based on the cumulative population exposed to smoke $PM_{2.5}$ over the duration of a fire and estimate excess asthma-related emergency department (ED) visits as a result of this exposure. We find that excess asthma visits attributable to each fire are only moderately correlated with common measures of wildfire severity, including burned area, structures destroyed, and suppression cost. Additionally, while recent California fires contributed nearly half of the country's smoke-related excess asthma ED visits during our study period, the most severe individual fire was the 2007 Bugaboo fire in the Southeast. We estimate that a majority of smoke $PM_{2.5}$ comes from sources outside the local jurisdictions where the smoke is experienced, with 87% coming from fires in other counties and 60% from fires in other states. Our approach could enable broad-scale assessment of whether specific fire characteristics affect smoke toxicity or impact, inform cost-effectiveness assessments for allocation of suppression resources, and help clarify the growing transboundary nature of local air quality.

Keywords: air pollution; climate change; health impacts; wildfire.

Conflict of interest statement

Competing interests statement:The authors declare no competing interest.

SUPPLEMENTARY INFO

MeSH terms, Substances, Grants and fundingexpand

FULL TEXT LINKS

Review

Curr Allergy Asthma Rep

. 2023 Dec 12.

doi: 10.1007/s11882-023-01118-6. Online ahead of print.

Remission in Type 2 Inflammatory Diseases: Current Evidence, Unmet Needs, and Suggestions for Defining Remission in Chronic Rhinosinusitis with Nasal Polyps

Marco Caminati[1,2], Eugenio De Corso[3], Giancarlo Ottaviano[4], Carlotta Pipolo[5], Michele Schiappoli[2], Veronica Seccia[6], Francesca Romana Spinelli[7], Edoardo Vincenzo Savarino[8,9], Paolo Gisondi[10], Gianenrico Senna[1,2]

Affiliations expand

- PMID: 38085499

- DOI: 10.1007/s11882-023-01118-6

Abstract

Purpose of review: The development of biological therapies for type 2 inflammatory diseases raises the possibility of addressing remission in those dis-immune conditions. No consensus exists for a definition of remission in chronic rhinosinusitis with nasal polyps (CRSwNP). This review aims to critically evaluate the published data to provide the basis for defining remission in CRSwNP.

Recent findings: The published evidence has yet to provide an unequivocal definition on remission in type 2 inflammatory diseases, in part reflecting differences in approaches to diagnosis and follow-up. A multidimensional evaluation is necessary when considering complete remission, including clinical, inflammatory, and histologic criteria, but how to combine or tailor the three perspectives according to disease severity at baseline or timing of assessment of treatment category is yet to reach consensus. We suggest defining remission starting from the approach taken in asthma and eosinophilic esophagitis, that is, including the resolution of symptoms and improvements in objective parameters of disease severity and/or inflammatory activity. Future studies and consensuses should provide validated criteria with cutoffs for the day-to-day definition of remission. The definition of remission in CRSwNP should include the following criteria, to be verified and maintained for a period of ≥ 12 months: absence of symptoms (nasal obstruction, loss of smell, rhinorrhea as the main ones); no impact of symptoms on quality of life; no need of surgery; no chronic or rescue medications (systemic corticosteroids or antibiotics); and recovery of smell function, possibly evaluated by objective test. Assessment of underlying inflammation should also be considered once accurate and feasible biomarkers are available in clinical practice.

Keywords: Asthma; Atopic dermatitis; Biological therapy; Chronic rhinosinusitis with nasal polyps; Eosinophilic esophagitis; Remission; Type 2 inflammatory disease.

- 66 references

SUPPLEMENTARY INFO

Publication typesexpand

19

Int J Clin Pharmacol Ther

. 2023 Dec 12.

doi: 10.5414/CP204495. Online ahead of print.

Super-responder and clinical remission in patients with asthma on treatment with single biologic therapy or cycling therapy using dupilumab in a real-world setting

Satoshi Hamada, Eriko Ogino, Hirotaka Yasuba

- PMID: 38085095

- DOI: 10.5414/CP204495

Abstract

Background: Regarding the therapeutic target in asthma, super-responder status (SR) is a status without systemic corticosteroids. Recently, clinical remission (CR), being a status of prolonged absence of asthma symptoms without systemic corticosteroids and/or normal pulmonary function, has gained attention as a new therapeutic target in asthma. Here, we

examined the percentage and features of asthma patients on treatment with dupilumab showing SR and CR.

Materials and methods: 49 asthma patients used subcutaneous dupilumab for > 1 year between April 2019 and November 2022. The status of SR and CR for 1 year was evaluated. Patients without any maintenance oral corticosteroids and exacerbations requiring systemic corticosteroids were classified as SR. CR was defined using three definitions based on changes in asthma symptoms and pulmonary function in addition to achieving SR for 1 year: CR without pulmonary function criteria (CR w/o F), fulfilment of asthma symptom improvement (asthma control questionnaire score < 0.75 or asthma control test score ≥ 23); and CR-70 or CR-80, pulmonary function improvement (%forced expiratory volume in 1 second ≥ 70% or ≥ 80%) in addition to achieving CR w/o F, respectively.

Results: 38 (77.6%), 22 (44.9%), 13 (26.5%), 12 (24.5%) of patients had SR, CR w/o F, CR-70, and CR-80, respectively. Severe eosinophilic chronic rhinosinusitis was significantly more found in patients with SR and CR based on all three definitions than in those without.

Conclusion: This study identified the percentage and features of patients on treatment with dupilumab showing SR and CR in a real-world setting. The outcome beyond CR on biologic treatment should be clarified.

20

Clin Exp Allergy

. 2023 Dec 12.

doi: 10.1111/cea.14436. Online ahead of print.

Switching from omalizumab to mepolizumab in severe asthmatics: A post hoc analysis of the RELight study

Maria Kallieri[1], Andriana I Papaioannou[2], Eleftherios Zervas[3], Evangelia Fouka[4], Konstantinos Porpodis[4], Marija Hadji Mitrova[4], Eleni Tzortzaki[5], Michael Makris[6], Maria Ntakoula[6], Panagiotis Lyberopoulos[1], Katerina Dimakou[7], Sofia Koukidou[7], Sevasti Ampelioti[7], Anastasia Papaporfyriou[8], Konstantinos Katsoulis[9], Maria Kipourou[9], Nikoletta Rovina[2], Katerina Antoniou[10], Stylianos Vittorakis[11], Petros Bakakos[2], Paschalis Steiropoulos[12], Katerina Markopoulou[13], Panteleimon Avarlis[14], Ilias C Papanikolaou[15], Miltiadis Markatos[11], Eleni Gaki[16], Konstantinos Samitas[3], Konstantinos Glynos[17], Spyros A Papiris[1], Despoina Papakosta[4], Nikolaos Tzanakis[10], Mina Gaga[3], Konstantinos Kostikas[18], Stelios Loukides[1]

Affiliations expand

- PMID: 38084474

- DOI: 10.1111/cea.14436

No abstract available

Keywords: biologic agents; eosinophils; mepolizumab; omalizumab; real world; severe asthma; switching.

- 6 references

SUPPLEMENTARY INFO

Publication types, Grants and fundingexpand

FULL TEXT LINKS

WILEY Full Text Article UNIMORE

Proceed to details

Cite

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21

Review

Am J Physiol Lung Cell Mol Physiol

. 2023 Dec 12.

doi: 10.1152/ajplung.00268.2023. Online ahead of print.

Nicotinic Receptors in Airway Disease

Niyati A Borkar[1], Michael A Thompson[2], Colleen M Bartman[1], Latifa Khalfaoui[1], Steven M Sine[3], Venkatachalem Sathish[4], Y S Prakash[1], Christina M Pabelick[5]

Affiliations expand

- PMID: 38084408

- DOI: 10.1152/ajplung.00268.2023

Abstract

With continued smoking of tobacco products and expanded use of nicotine delivery devices worldwide, understanding the impact of smoking and vaping on respiratory health remains a major global unmet need. While multiple studies have shown a strong association between smoking and asthma, there is relative paucity in mechanistic understanding of how elements in cigarette smoke impact on the airway. Recognizing that nicotine is a major component in both smoking and vaping products, it is critical to understand the mechanisms by which nicotine impacts airways and promotes lung diseases such as asthma. There is now increasing evidence that alpha7 nicotinic acetylcholine receptors (α7nAChRs) are critical players in nicotine effects on airways, but the mechanisms by which α7nAChR influences different airway cell types have not been widely explored. In this review, we highlight and integrate current state of knowledge regarding nicotine and α7nAChR in the context of asthma and identify potential approaches to alleviate the impact of smoking and vaping on the lungs.

Keywords: asthma; calcium; inflammation; mitochondria; nicotinic cholinergic receptor.

SUPPLEMENTARY INFO

Publication types, Grants and fundingexpand

22

iScience

. 2023 Oct 29;26(12):108356.

doi: 10.1016/j.isci.2023.108356. eCollection 2023 Dec 15.

A lifecourse Mendelian randomization study uncovers age-dependent effects of adiposity on asthma risk

Helena Urquijo[1], Genevieve M Leyden[1], George Davey Smith[1], Tom G Richardson[1]

Affiliations expand

- PMID: 38047089

- PMCID: PMC10690543

- DOI: 10.1016/j.isci.2023.108356

Free PMC article

Abstract

Evaluating the long-term consequences of childhood lifestyle factors on asthma risk can be exceptionally challenging in epidemiology given that cases are typically diagnosed at

various timepoints throughout the lifecourse. In this study, we used human genetic data to evaluate the effects of childhood and adulthood adiposity on risk of pediatric (n = 13,962 cases) and adult-onset asthma (n = 26,582 cases) with a common set of controls (n = 300,671) using a technique known as lifecourse Mendelian randomization. We found that childhood adiposity directly increases risk of pediatric asthma (OR = 1.20, 95% CI = 1.03-1.37, p = 0.03), but limited evidence that it has an effect on adult-onset asthma after accounting for adiposity during adulthood (OR = 1.05, 95% CI = 0.93-1.17, p = 0.39). Conversely, there was strong evidence that adulthood adiposity increases asthma risk in midlife (OR = 1.37, 95% CI = 1.28-1.46, P = 7×10^{-12}). These findings suggest that childhood and adulthood adiposity are independent risk factors for asthma at each of their corresponding timepoints in the lifecourse.

Keywords: Health sciences; Pediatrics; Respiratory medicine.

Conflict of interest statement

T.G.R. is an employee of GlaxoSmithKline outside of this work. All other authors declare no conflicts of interest.

- 20 references
- 2 figures

FULL TEXT LINKS

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23

Editorial

Am J Respir Crit Care Med

. 2023 Dec 15;208(12):1255-1256.

doi: 10.1164/rccm.202310-1793ED.

Undiagnosed (or Unrecognized) Chronic Obstructive Pulmonary Disease and Asthma: Does Active Case Finding Identify Clinically Impaired Patients with Treatment Potential?

Yunus Çolak[1 2 3]

Affiliations expand

- PMID: 37934464

- DOI: 10.1164/rccm.202310-1793ED

No abstract available

Comment on

- Impact of Undiagnosed Chronic Obstructive Pulmonary Disease and Asthma on Symptoms, Quality of Life, Healthcare Use, and Work Productivity.
  Gerstein E, Bierbrier J, Whitmore GA, Vandemheen KL, Bergeron C, Boulet LP, Cote A, Field SK, Penz E, McIvor RA, Lemière C, Gupta S, Hernandez P, Mayers I, Bhutani M, Lougheed MD, Licskai CJ, Azher T, Ezer N, Ainslie M, Alvarez GG, Mulpuru S, Aaron SD.Am J Respir Crit Care Med. 2023 Dec 15;208(12):1271-1282. doi: 10.1164/rccm.202307-1264OC.PMID: 37792953

24

Eur Respir J

. 2023 Dec 14;62(6):2300819.

doi: 10.1183/13993003.00819-2023. Print 2023 Dec.

Clinical remission in severe asthma with biologic therapy: an analysis from the UK Severe Asthma Registry

P Jane McDowell[1,2], Ron McDowell[3], John Busby[4], M Chad Eastwood[1,2], Pujan H Patel[5], David J Jackson[6], Adel Mansur[7], Mitesh Patel[8], Hassan Burhan[9], Simon Doe[10], Rekha Chaudhuri[11], Robin Gore[12], James W Dodd[13], Deepak Subramanian[14], Thomas Brown[15], Liam G Heaney[1,2]; UK Severe Asthma Registry

Affiliations expand

- PMID: 37857423

- PMCID: PMC10719453

- DOI: 10.1183/13993003.00819-2023

Free PMC article

Abstract

Background: Novel biologic therapies have revolutionised the management of severe asthma with more ambitious treatment aims. Here we analyse the definition of clinical remission as a suggested treatment goal and consider the characteristics associated with clinical remission in a large, real-world severe asthma cohort.

Methods: This was a retrospective analysis of severe asthma patients registered in the UK Severe Asthma Registry (UKSAR) who met strict national access criteria for biologics. Patients had a pre-biologics baseline assessment and annual review. The primary definition

of clinical remission applied included Asthma Control Questionnaire (ACQ)-5 <1.5 and no oral corticosteroids for disease control and forced expiratory volume in 1 s above lower limit of normal or no more than 100 mL less than baseline.

Results: 18.3% of patients achieved the primary definition of remission. The adjusted odds of remission on biologic therapy were 7.44 (95% CI 1.73-31.95)-fold higher in patients with type 2 (T2)-high biomarkers. The adjusted odds of remission were lower in patients who were female (OR 0.61, 95% CI 0.45-0.93), obese (OR 0.49, 95% CI 0.24-0.65) or had ACQ-5 ≥1.5 (OR 0.19, 95% CI 0.12-0.31) pre-biologic therapy. The likelihood of remission reduced by 14% (95% CI 0.76-0.97) for every 10-year increase in disease duration. 12-21% of the cohort attained clinical remission depending on the definition applied; most of those who did not achieve remission failed to meet multiple criteria.

Conclusions: 18.3% of patients achieved the primary definition of clinical remission. Remission was more likely in T2-high biomarker patients with shorter duration of disease and less comorbidity. Further research on the optimum time to commence biologics in severe asthma is required.

Conflict of interest statement

Conflict of interest: The UK Severe Asthma Registry (UKSAR) does not receive any monetary benefits or benefits-in-kind from any pharmaceutical entity; UKSAR does make limited data contributions to the International Severe Asthma Registry (ISAR) and the European Respiratory Society Clinical Research Collaborative (SHARP), which do receive pharmaceutical funding. P.J. McDowell reports speaker fees from GlaxoSmithKline and scientific meeting support from Chiesi. R. McDowell and M. Patel have no conflicts of interest to declare. M.C. Eastwood reports support to attend meetings from GlaxoSmithKline. J. Busby reports grants from AstraZeneca and personal fees from Nuvoair. P.H. Patel received advisory board fees and lecture fees from AstraZeneca, GlaxoSmithKline, Novartis and Sanofi. D.J. Jackson has received speaker fees and consultancy fees from AstraZeneca, GlaxoSmithKline and Sanofi Regeneron. A. Mansur declares personal and to institution payment for talks, advisory board meetings and sponsorship to attend conferences from AstraZeneca, GlaxoSmithKline, Teva, Sanofi, Novartis and Boehringer Ingelheim; he also declares research grants from GlaxoSmithKline. H. Burhan reports fees for advisory board meetings from AstraZeneca and Novartis, honoraria for lectures from AstraZeneca, Chiesi, GSK and Sanofi, and support for attending conferences from AstraZeneca, Chiesi and GSK. S. Doe has participated on advisory boards for Vertex, Gilead and Novartis, and has received support for travel to meetings from GlaxoSmithKline, AstraZeneca, Gilead, Teva; Sanofi, Chiesi and Forest, and fees for lectures from GlaxoSmithKline, AstraZeneca and Sanofi. R. Chaudhuri has received lecture fees from GlaxoSmithKline, AstraZeneca, Teva, Chiesi, Sanofi and Novartis, honoraria for advisory board meetings from GlaxoSmithKline and AstraZeneca, sponsorship to attend

international scientific meetings from Chiesi, Sanofi and GlaxoSmithKline, and a research grant (paid to institute) from AstraZeneca for a UK multicentre study. R. Gore has received fees for lecturing from AstraZeneca, Novartis, Sanofi and GlaxoSmithKline. J.W. Dodd declares he has received honoraria for participating in advisory boards and given lectures at meetings supported by GlaxoSmithKline, Boehringer Ingelheim, Chiesi, AstraZeneca, Fisher & Paykel and Aerogen; he has received sponsorship for attending international scientific meetings from Chiesi; he has also taken part in asthma clinical trials sponsored by Sanofi, AstraZeneca and Chiesi, for which his institution received remuneration; his institution has received funding for research from the MRC, NIHR, SBRI, NHSx, Templeton Foundation and Southmead Hospital research charity. T. Brown has received fees as an external expert from AstraZeneca, speaker fees from AstraZeneca, GlaxoSmithKline, Sanofi, Teva, Novartis and Chiesi, honoraria for advisory board attendance from AstraZeneca, Sanofi and Teva, and sponsorship to attend international scientific meetings from Sanofi, GlaxoSmithKline, Teva, Chiesi and Napp Pharmaceuticals. D. Subramanian is part of the AstraZeneca Precision National Working group and has received speaker fees from Chiesi. L.G. Heaney is academic lead for the Medical Research Council Stratified Medicine UK Consortium in Severe Asthma, which involves industrial partnerships with a number of pharmaceutical companies.

Comment in

- Clinical remission with biologic therapies in severe asthma: a matter of definition. Beasley R, Noble J, Weatherall M.Eur Respir J. 2023 Dec 14;62(6):2301844. doi: 10.1183/13993003.01844-2023. Print 2023 Dec.PMID: 38097202 No abstract available.

- 45 references
- 3 figures

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

FULL TEXT LINKS

Randomized Controlled Trial

Am J Respir Crit Care Med

. 2023 Dec 15;208(12):1330-1335.

doi: 10.1164/rccm.202308-1413LE.

Benralizumab Normalizes Sputum Eosinophilia in Severe Asthma Uncontrolled by Anti-IL-5 Antibodies: A Single-Blind, Placebo-controlled Clinical Trial

Manali Mukherjee[1], Chynna Huang[1], Carmen Venegas-Garrido[1], Kayla Zhang[1], Anurag Bhalla[1], Xiaotian Ju[1], Paul M O'Byrne[1], Sarah Svenningsen[1], Roma Sehmi[1], Parameswaran Nair[1]

Affiliations expand

- PMID: 37824744

- DOI: 10.1164/rccm.202308-1413LE

No abstract available

Multicenter Study

Am J Respir Crit Care Med

. 2023 Dec 15;208(12):1271-1282.

doi: 10.1164/rccm.202307-1264OC.

Impact of Undiagnosed Chronic Obstructive Pulmonary Disease and Asthma on Symptoms, Quality of Life, Healthcare Use, and Work Productivity

Emily Gerstein[1], Jared Bierbrier[1], G Alex Whitmore[2], Katherine L Vandemheen[1], Celine Bergeron[3], Louis-Philippe Boulet[4], Andreanne Cote[4], Stephen K Field[5], Erika Penz[6], R Andrew McIvor[7], Catherine Lemière[8], Samir Gupta[9], Paul Hernandez[10], Irvin Mayers[11], Mohit Bhutani[11], M Diane Lougheed[12], Christopher J Licskai[13], Tanweer Azher[14], Nicole Ezer[15], Martha Ainslie[16], Gonzalo G Alvarez[1], Sunita Mulpuru[1], Shawn D Aaron[1]

Affiliations expand

- PMID: 37792953

- DOI: 10.1164/rccm.202307-1264OC

Abstract

Rationale: A significant proportion of individuals with chronic obstructive pulmonary disease (COPD) and asthma remain undiagnosed. **Objectives:** The objective of this study was to evaluate symptoms, quality of life, healthcare use, and work productivity in subjects with undiagnosed COPD or asthma compared with those previously diagnosed, as well as healthy control subjects. **Methods:** This multicenter population-based case-finding study randomly recruited adults with respiratory symptoms who had no previous history of diagnosed lung disease from 17 Canadian centers using random digit dialing. Participants

who exceeded symptom thresholds on the Asthma Screening Questionnaire or the COPD Diagnostic Questionnaire underwent pre- and post-bronchodilator spirometry to determine if they met diagnostic criteria for COPD or asthma. Two control groups, a healthy group without respiratory symptoms and a symptomatic group with previously diagnosed COPD or asthma, were similarly recruited. **Measurements and Main Results:** A total of 26,905 symptomatic individuals were interviewed, and 4,272 subjects were eligible. Of these, 2,857 completed pre- and post-bronchodilator spirometry, and 595 (21%) met diagnostic criteria for COPD or asthma. Individuals with undiagnosed COPD or asthma reported greater impact of symptoms on health status and daily activities, worse disease-specific and general quality of life, greater healthcare use, and poorer work productivity than healthy control subjects. Individuals with undiagnosed asthma had symptoms, quality of life, and healthcare use burden similar to those of individuals with previously diagnosed asthma, whereas subjects with undiagnosed COPD were less disabled than those with previously diagnosed COPD. **Conclusions:** Undiagnosed COPD or asthma imposes important, unmeasured burdens on the healthcare system and is associated with poor health status and negative effects on work productivity.

Keywords: COPD; asthma; case finding; early diagnosis.

Comment in

- Undiagnosed (or Unrecognized) Chronic Obstructive Pulmonary Disease and Asthma: Does Active Case Finding Identify Clinically Impaired Patients with Treatment Potential?
  Çolak Y.Am J Respir Crit Care Med. 2023 Dec 15;208(12):1255-1256. doi: 10.1164/rccm.202310-1793ED.PMID: 37934464 No abstract available.

J Investig Allergol Clin Immunol

. 2023 Dec 14;33(6):419-430.

doi: 10.18176/jiaci.0939. Epub 2023 Sep 4.

Improvement in Smell Using Monoclonal Antibodies Among Patients With Chronic Rhinosinusitis With Nasal Polyps: A Systematic Review

B Barroso[1,2], M Valverde-Monge[1,2], D Betancor[1,2], A Gómez-López[1], C Villalobos-Vildas[1], B González-Cano[1], J Sastre[1,2]

Affiliations expand

- PMID: 37669083

- DOI: 10.18176/jiaci.0939

Abstract

Background: Impairment of smell is more commonly related to chronic rhinosinusitis with nasal polyps (CRSwNP) than without, especially when asthma and/or NSAID-exacerbated respiratory disease and type 2 inflammation are also present. Therapeutic options include intranasal and systemic corticosteroids, surgery, and, more recently, biological therapy. We summarize current knowledge on the effect of biologics on olfaction in patients with CRSwNP.

Methods: We performed a systematic search of the PubMed and Cochrane databases from January 2001 to June 2022. The inclusion criteria were as follows: adult patients with CRS treated with dupilumab, omalizumab, mepolizumab, benralizumab, or reslizumab; and studies published in English reporting outcomes for sense of smell based on psychophysical and/or subjective tools. We excluded reports that did not assess CRSwNP, loss of smell evaluated with a method other than those accepted in the inclusion criteria, review articles, and expert opinions. No funding was received.

Results: Dupilumab has demonstrated rapid and sustained long-term improvement in smell in clinical trials and in real life. Omalizumab improves smell at 24 weeks. This improvement is maintained in the long-term, although it is not clinically relevant. Mepolizumab and benralizumab improved smell in the long term based on a subjective scale. No studies examining the improvement in smell in patients with CRSwNP treated with reslizumab were found. Indirect comparisons by meta-analysis consistently conclude that dupilumab is the most effective biologic for improving impaired sense of smell.

Conclusion: Dupilumab seems to be more efficacious for improving the sense of smell than omalizumab, mepolizumab, and benralizumab.

Keywords: Benralizumab; Chronic rhinosinusitis with nasal polyps (CRSwNP); Dupilumab; Mepolizumab; Monoclonal antibodies; Omalizumab; Smell.

28

J Investig Allergol Clin Immunol

. 2023 Dec 14;33(6):446-456.

doi: 10.18176/jiaci.0850. Epub 2022 Aug 24.

Bronchodilator Reversibility in the GAN Severe Asthma Cohort

K Milger[1,2], D Skowasch[3], E Hamelmann[4], C Mümmler[1,2], M Idzko[5], M Gappa[6], M Jandl[7], C Körner-Rettberg[8], R Ehmann[9], O Schmidt[10], C Taube[11], A Holtdirk[12], H Timmermann[13], R Buhl[14], S Korn[15,16]

Affiliations expand

- PMID: 36000830

- DOI: 10.18176/jiaci.0850

Abstract

Background and objective: Positive bronchodilator reversibility (BDR) is a diagnostic criterion for asthma. However, patients with asthma may exhibit a negative BDR response. Aim: To describe the frequency of positive and Negative BDR response in patients with severe asthma and study associations with phenotypic characteristics.

Methods: A positive BDR response was defined as an increase in FEV1 >200 mL and >12% upon testing with a short-acting ß-agonist.

Results: BDR data were available for 793 of the 2013 patients included in the German Asthma Net (GAN) severe asthma registry. Of these, 250 (31.5%) had a positive BDR response and 543 (68.5%) a egative BDR response. Comorbidities significantly associated with a negative response were gastroesophageal reflux disease (GERD) (28.0% vs 40.0%, P<.01) and eosinophilic granulomatosis with polyangiitis (0.4% vs 3.0%; P<.05), while smoking history (active: 2.8% vs 2.2%; ex: 40.0% vs 41.7%) and comorbid chronic obstructive pulmonary disease (COPD) (5.2% vs 7.2%) were similar in both groups. Patients with a positive BDR response had worse asthma control (median Asthma Control Questionnaire 5 score, 3.4 vs 3.0, P<.05), more frequently reported dyspnea at rest (26.8% vs 16.4%, P<.001) and chest tightness (36.4% vs 26.2%, P<.001), and had more severe airway obstruction at baseline (FEV1% predicted, 56 vs 64, P<.001) and higher fractional exhaled nitric oxide (FeNO) levels (41 vs 33 ppb, P<0.05). There were no differences in diffusion capacity of the lung for carbon monoxide, single breath (% pred, 70% vs 71%). Multivariate linear regression analysis identified an association between positive BDR response and lower baseline FEV1% (P<.001) and chest tightness (P<.05) and a negative association between BDR and GERD (P<.05).

Conclusion: In this real-life setting, most patients with severe asthma had a negative BDR response. Interestingly, this was not associated with smoking history or COPD, but with lower FeNO and presence of GERD.

Keywords: Bronchodilator responsiveness; GERD. FeNO; Real-life cohort; Severe asthma.

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

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

1

Published Erratum

Pulm Ther

-
-
-

. 2023 Dec 15.

doi: 10.1007/s41030-023-00250-y. Online ahead of print.

Correction: A Clinical Study to Assess the Efficacy and Safety of MP-AzeFlu Nasal Spray in Comparison to Commercially Available Azelastine Hydrochloride and Fluticasone Propionate Nasal Sprays in Chinese Volunteers with Allergic Rhinitis

Bing Zhou[1], Lei Cheng[2,3], Jing Pan[4], Huizhong Wang[5], Yongde Jin[6], Changqing Zhao[7], Peng Lin[8], Guolin Tan[9], Hongyan Fang[10], Hua Zhang[11], Huifang Zhou[12], Yaowu Dong[13], Hans Christian Kuhl[14], Rajesh Kumar Ramalingam[15], Duc Tung Nguyen[16]

Affiliations expand

- PMID: 38099987

- DOI: 10.1007/s41030-023-00250-y

No abstract available

Erratum for

- A Clinical Study to Assess the Efficacy and Safety of MP-AzeFlu Nasal Spray in Comparison to Commercially Available Azelastine Hydrochloride and Fluticasone Propionate Nasal Sprays in Chinese Volunteers with Allergic Rhinitis.
  Zhou B, Cheng L, Pan J, Wang H, Jin Y, Zhao C, Lin P, Tan G, Fang H, Zhang H, Zhou H, Dong Y, Kuhl HC, Ramalingam RK, Nguyen DT.Pulm Ther. 2023 Sep;9(3):411-427. doi: 10.1007/s41030-023-00238-8. Epub 2023 Aug 14.PMID: 37580498 **Free PMC article.**

2

Am J Rhinol Allergy

. 2023 Dec 13:19458924231220763.

doi: 10.1177/19458924231220763. Online ahead of print.

Genetic Association of Allergic Rhinitis with Sleep and Neuropsychological Disorders: A Mendelian Randomization Study

Chenxi Lin[1], Jia Li[1], Ye Deng[1], Xiongwen Li[1], Xiaofeng Wang[1], Jingcheng Lu[1]

Affiliations expand

- PMID: 38093177

- DOI: 10.1177/19458924231220763

Abstract

Background: The genetic association of allergic rhinitis (AR) with other physiological systems throughout the human body remains unknown.

Objective: The aim of this Mendelian randomization (MR) study was to explore the association of this respiratory disorder with multiple common sleep and neuropsychological disorders at the genetic level.

Methods: Summary data for total AR and pollen AR were collected from the most updated FinnGen genome-wide association studies involving more than 340 000 European subjects. Summary data for 12 sleep and neuropsychological disorders (including snoring) were included from UK Biobank studies involving 63 392 to 462 933 European subjects. Three MR methods, including inverse-variance weighting (IVW), weighted median and MR-Egger, were used to determine the relationships between the exposures and outcomes. Several sensitivity analyses, including Cochran's Q, MR-Egger intercept, MR-PRESSO, "leave-one-out" test and funnel plot, were used to detect heterogeneity and horizontal pleiotropy.

Results: IVW revealed that total and pollen AR were associated with an increased risk of snoring (odds ratio (OR) = 1.011, 95% confidence interval (CI) = 1.004∼1.019, *P* = .003; OR = 1.006, 95% CI = 1.001∼1.011, *P* = .014). Two other MR methods supported the results from the IVW analysis. No heterogeneity or horizontal pleiotropy was confirmed by sensitivity analyses. In addition, IVW did not reveal any association between AR and other included disorders.

Conclusion: AR (specifically AR caused by pollen) might be an independent risk factor for snoring at the genetic level, which should be verified in the future.

Keywords: FinnGen; Mendelian randomization; UK Biobank; allergic rhinitis; inverse-variance weighted; neuropsychological disorders; pollen; risk factor; sleep disorders; snoring.

Conflict of interest statement

Declaration of Conflicting InterestsThe authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

3

Int Immunopharmacol

. 2023 Dec 11:127:111318.

doi: 10.1016/j.intimp.2023.111318. Online ahead of print.

Inflammatory endotypes of adenoidal hypertrophy based on a cluster analysis of biomarkers

Hong-Li Hua[1], Yu-Qin Deng[1], Huan Huang[2], Yu-Chen Tang[1], Ji-Bo Han[1], Fen Li[3], Yan Wang[4], Ze-Zhang Tao[5]

Affiliations expand

- PMID: 38086270

- DOI: 10.1016/j.intimp.2023.111318

Abstract

Objective: To identify adenoid inflammatory endotypes based on inflammatory markers, match endotypes to phenotypes, and predict endotypes.

Methods: This cross-sectional study included 72 children with adenoid hypertrophy. Thirteen inflammatory markers and total immunoglobulin E (TIgE) in adenoid tissue were analyzed using Luminex and enzyme-linked immunosorbent assay (ELISA) for performing

cluster analysis. Correlation analysis was used to examine the characteristics of each cluster. Receiver operating characteristic (ROC) curve analysis was performed to screen for preoperative characteristic data with predictive value for adenoid inflammation endotype.

Results: The patients were divided into four clusters. Cluster 1 exhibited non-type 2 signatures with low inflammatory marker concentrations, except for the highest expression of Th1-related cytokines. Cluster 2 showed a non-type 2 endotype with the highest concentration of interleukin (IL)-17A and IL-22. Cluster 3 exhibited moderate type 2 inflammation, with the highest concentration of neutrophil factors. Cluster 4 demonstrated significant type 2 inflammation and moderate neutrophil levels. The proportions of AR and serum TIgE levels increased from clusters 1 to 4, and there was a gradual increase in the prevalence of chronic sinusitis from low to high neutrophilic inflammation. The area under the ROC curve for serum TIgE was higher than those for combined or other separate preoperative characteristics for predicting non-type 2 and type 2 inflammation in the adenoid tissue.

Conclusions: The evaluation of cytokines in adenoid tissue revealed four endotypes. Serum TIgE level was an important indicator of the endotype of adenoid inflammation. Identification of adenoid inflammatory endotypes can facilitate targeted treatment decisions.

Keywords: Adenoid hypertrophy; Allergic rhinitis; Cluster analysis; Endotype; Total immunoglobulin E.

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.

. 2023 Dec 12;11(6):e0221323.

doi: 10.1128/spectrum.02213-23. Epub 2023 Oct 5.

Airway microbiota correlated with pulmonary exacerbation in primary ciliary dyskinesia patients

Weitao Zhou[#1], Zhuoyao Guo[#1], Jinglong Chen[1], Yao Chen[1], Chen He[1], Aizhen Lu[1], Liling Qian[1]

Affiliations expand

- PMID: 37796006

- PMCID: PMC10715216

- DOI: 10.1128/spectrum.02213-23

Free PMC article

Abstract

PCD is a rare disease characterized by productive cough, rhinitis, and recurrent infections of the upper and lower airways. Because the diagnosis of PCD is often delayed, patients receive more antibiotics, experience a heavier financial burden, and have a worse prognosis; thus, it is very important to identify the pathogeny and use the correct antibiotic. In this large single-center study of PCD microbiota, we identified an outline of the bacterial microbes from the respiratory tract; furthermore, we found that the microbiota diversity in pediatric sputum was richer than that in pediatric BALF through sequencing, indicating a heterogeneous community structure. The microbiota diversity and richness were lower during pulmonary exacerbation than during pulmonary stabilization. A significantly higher abundance of *Pseudomonas* had a moderate distinguishing effect for lung exacerbation, which attracted more attention for the study of *Pseudomonas* therapy in pediatric patients with PCD.

Keywords: airway microbiota; microbiota diversity; primary ciliary dyskinesia; pulmonary exacerbation.

Conflict of interest statement

The authors declare no conflict of interest.

- 37 references
- 4 figures

SUPPLEMENTARY INFO

MeSH terms, Substances, Grants and fundingexpand

FULL TEXT LINKS

5

Review

J Investig Allergol Clin Immunol

. 2023 Dec 14;33(6):419-430.

doi: 10.18176/jiaci.0939. Epub 2023 Sep 4.

Improvement in Smell Using Monoclonal Antibodies Among Patients With Chronic Rhinosinusitis With Nasal Polyps: A Systematic Review

B Barroso[1,2], M Valverde-Monge[1,2], D Betancor[1,2], A Gómez-López[1], C Villalobos-Vildas[1], B González-Cano[1], J Sastre[1,2]

Affiliations expand

- PMID: 37669083

- DOI: 10.18176/jiaci.0939

Abstract

Background: Impairment of smell is more commonly related to chronic rhinosinusitis with nasal polyps (CRSwNP) than without, especially when asthma and/or NSAID-exacerbated respiratory disease and type 2 inflammation are also present. Therapeutic options include intranasal and systemic corticosteroids, surgery, and, more recently, biological therapy. We summarize current knowledge on the effect of biologics on olfaction in patients with CRSwNP.

Methods: We performed a systematic search of the PubMed and Cochrane databases from January 2001 to June 2022. The inclusion criteria were as follows: adult patients with CRS treated with dupilumab, omalizumab, mepolizumab, benralizumab, or reslizumab; and studies published in English reporting outcomes for sense of smell based on psychophysical and/or subjective tools. We excluded reports that did not assess CRSwNP, loss of smell evaluated with a method other than those accepted in the inclusion criteria, review articles, and expert opinions. No funding was received.

Results: Dupilumab has demonstrated rapid and sustained long-term improvement in smell in clinical trials and in real life. Omalizumab improves smell at 24 weeks. This improvement is maintained in the long-term, although it is not clinically relevant. Mepolizumab and benralizumab improved smell in the long term based on a subjective scale. No studies examining the improvement in smell in patients with CRSwNP treated with reslizumab were found. Indirect comparisons by meta-analysis consistently conclude that dupilumab is the most effective biologic for improving impaired sense of smell.

Conclusion: Dupilumab seems to be more efficacious for improving the sense of smell than omalizumab, mepolizumab, and benralizumab.

Keywords: Benralizumab; Chronic rhinosinusitis with nasal polyps (CRSwNP); Dupilumab; Mepolizumab; Monoclonal antibodies; Omalizumab; Smell.

6

J Investig Allergol Clin Immunol

. 2023 Dec 14;33(6):479-482.

doi: 10.18176/jiaci.0908. Epub 2023 May 15.

ALERGODATA: Sentinel Registry of Health Outcomes in Allergic Patients Treated With Biological Therapies at Specialized Allergology Clinics in Spain

D Antolín Amérigo[1,2], C Colás[3,4,5], I Dávila[6,7], A Del Cuvillo[8], J Delgado Romero[9], J Domínguez-Ortega[10,11], I Jáuregui Presa[12], M Lázaro Sastre[13], J Montoro Lacomba[14], A Sala-Cunill[15], S Sanchez-Garcia[16], B Veleiro Pérez[17], C Vidal[18], A L Valero Santiago[19,20,21]

Affiliations expand

- PMID: 37183958

- DOI: 10.18176/jiaci.0908

No abstract available

Keywords: Chronic rhinosinusitis with nasal polyps; Chronic urticaria; Evidence based on clinical practice; Moderate-to-severe atopic dermatitis; Severe asthma.

SUPPLEMENTARY INFO

MeSH termsexpand

Chronic cough

1

Review

J Med Internet Res

. 2023 Dec 14:25:e46929.

doi: 10.2196/46929.

Identifying Existing Evidence to Potentially Develop a Machine Learning Diagnostic Algorithm for Cough in Primary Care Settings: Scoping Review

Julia Cummerow[#1], Christin Wienecke[#1], Nicola Engler[#1], Philip Marahrens[1], Philipp Gruening[2], Jost Steinhäuser[1]

Affiliations expand

- PMID: 38096024

- DOI: 10.2196/46929

Free article

Abstract

Background: Primary care is known to be one of the most complex health care settings because of the high number of theoretically possible diagnoses. Therefore, the process of

clinical decision-making in primary care includes complex analytical and nonanalytical factors such as gut feelings and dealing with uncertainties. Artificial intelligence is also mandated to offer support in finding valid diagnoses. Nevertheless, to translate some aspects of what occurs during a consultation into a machine-based diagnostic algorithm, the probabilities for the underlying diagnoses (odds ratios) need to be determined.

Objective: Cough is one of the most common reasons for a consultation in general practice, the core discipline in primary care. The aim of this scoping review was to identify the available data on cough as a predictor of various diagnoses encountered in general practice. In the context of an ongoing project, we reflect on this database as a possible basis for a machine-based diagnostic algorithm. Furthermore, we discuss the applicability of such an algorithm against the background of the specifics of general practice.

Methods: The PubMed, Scopus, Web of Science, and Cochrane Library databases were searched with defined search terms, supplemented by the search for gray literature via the German Journal of Family Medicine until April 20, 2023. The inclusion criterion was the explicit analysis of cough as a predictor of any conceivable disease. Exclusion criteria were articles that did not provide original study results, articles in languages other than English or German, and articles that did not mention cough as a diagnostic predictor.

Results: In total, 1458 records were identified for screening, of which 35 articles met our inclusion criteria. Most of the results (11/35, 31%) were found for chronic obstructive pulmonary disease. The others were distributed among the diagnoses of asthma or unspecified obstructive airway disease, various infectious diseases, bronchogenic carcinoma, dyspepsia or gastroesophageal reflux disease, and adverse effects of angiotensin-converting enzyme inhibitors. Positive odds ratios were found for cough as a predictor of chronic obstructive pulmonary disease, influenza, COVID-19 infections, and bronchial carcinoma, whereas the results for cough as a predictor of asthma and other nonspecified obstructive airway diseases were inconsistent.

Conclusions: Reliable data on cough as a predictor of various diagnoses encountered in general practice are scarce. The example of cough does not provide a sufficient database to contribute odds to a machine learning-based diagnostic algorithm in a meaningful way.

Keywords: artificial intelligence; cough; differential diagnosis; predictor; primary health care.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

2

Cad Saude Publica

. 2023 Dec 11;39(12):e00098023.

doi: 10.1590/0102-311XEN098023. eCollection 2023.

Prevalence and factors associated with long COVID in adults from Southern Brazil: findings from the PAMPA cohort

Natan Feter[1], Eduardo Lucia Caputo[2], Jayne Santos Leite[1], Felipe Mendes Delpino[2], Luísa Silveira da Silva[2], Yohana Pereira Vieira[3], Isabel de Almeida Paz[1], Juliana Quadros Santos Rocha[3], Carine Nascimento da Silva[3], Natália Schröeder[1], Marcelo Cozzensa da Silva[2], Airton José Rombaldi[2]

Affiliations expand

- PMID: 38088735

- PMCID: PMC10715571

- DOI: 10.1590/0102-311XEN098023

Free PMC article

Abstract

in English, Portuguese, Spanish

Most COVID-19 survivors have reported experiencing persistent symptoms after the infection - these types of cases are known as long COVID. Since Brazil was an epicenter of the COVID-19 pandemic, a high burden of long COVID is expected. This study aimed to identify the prevalence and factors associated with long COVID in adults in Southern Brazil, analyzing data from the PAMPA cohort. Participants filled out a self-reported online questionnaire in June 2022. This study only included subjects who tested positive for COVID-19. Long COVID was defined by any symptoms that persisted for at least three months after the SARS-CoV-2 infection. Poisson's regression models with robust variance were used to identify factors associated with long COVID; and results were reported as prevalence ratios (PR) and respective 95% confidence intervals (95%CI). A total of 1,001 participants (77.4% women, mean age [SD] = 38.3 [11.9] years) were analyzed. The prevalence of long COVID among these patients was 77.4% (95%CI: 74.7; 79.9). The likelihood of long COVID was higher in unvaccinated participants (PR = 1.23, 95%CI: 1.06; 1.42), in those with chronic conditions (PR = 1.13, 95%CI: 1.04; 1.24), and in those who were hospitalized due to the COVID-19 infection (PR = 1.24, 95%CI: 1.16; 1.32). This prevalence was also higher in women (PR = 1.21, 95%CI: 1.09; 1.33) than in men. Physical activity was associated with a reduced likelihood of fatigue, neurological complications, coughing, and headaches as persistent symptoms after a COVID-19 infection. It was found that three out of four adults in Southern Brazil experienced long COVID. Public policies aiming to reduce the burden of long COVID must be prioritized, especially in groups that are at higher risk of developing this harmful condition.

- 45 references

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

3

Case Reports

BMC Geriatr

. 2023 Dec 11;23(1):836.

doi: 10.1186/s12877-023-04508-7.

When chronic obstructive pulmonary disease meets small cell lung cancer: an unusual case report of rapid progression

Xu Zhang[1], Jia Zeng[1], Xiyu Huang[2], Zhishu Li[3][4]

Affiliations expand

- PMID: 38082430

- PMCID: PMC10714477

- DOI: 10.1186/s12877-023-04508-7

Free PMC article

Abstract

Background: Chronic obstructive pulmonary disease (COPD) is a chronic inflammatory disease and a risk factor for lung cancer. Small cell lung cancer is a neuroendocrine tumor with a high degree of malignancy and an overall five-year survival rate of less than 7%.

Cases presentation: Herein, we report the case of an 68-year-old male presented to the respiratory department with cough, sputum, and dyspnea. He was diagnosed as community acquired pneumonia and treated with intravenous anti-infection. Previous pulmonary function was definitively diagnosed as COPD. About 7 months after discharge, the patient returned to the hospital for cough and dyspnea. After diagnosis of the tumor, cisplatin, etoposide and durvalumab were administered. Finally the patient died of respiratory failure approximately 9 months after his diagnosis.

Conclusions: For COPD patients with immunocompromised manifestations, it is necessary to be alert to complications and shorten the follow-up interval of chest CT. COPD may accelerate the formation and progression of SCLC.

Keywords: COPD; Case report; SCLC; Survival outcome; progression.

Conflict of interest statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.
The authors declare no competing interests.

- 12 references
- 3 figures

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS

1
Int J Antimicrob Agents

. 2023 Dec 14:107061.

doi: 10.1016/j.ijantimicag.2023.107061. Online ahead of print.

Efficacy of clofazimine-containing regimens for treatment of

Mycobacterium avium complex-pulmonary disease in patients unsuitable for standard treatment regimen

Shengjuan Bao[1], Suting Chen[2], Jifang Zheng[2], Junke Ma[3], Jiali Yang[4], Hairong Huang[5], Hongfei Duan[6]

Affiliations expand

- PMID: 38103753

- DOI: 10.1016/j.ijantimicag.2023.107061

Abstract

Objectives: Patients with Mycobacterium avium complex-pulmonary disease (MAC-PD) can exhibit contraindications in applying the recommended treatment regimens by the guidelines. Clofazimine (CFZ) is considered a promising drug for MAC-PD treatment and is frequently included in alternative regimens; however, its efficacy remains unclear.

Methods: MAC-PD patients, unsuitable for standard regimens, were enrolled continuously in a prospective study at Beijing Chest Hospital. The treatment response of the CFZ-containing regimen was monitored.

Results: Fifty patients were enrolled in the initial treatment, and 25 patients had a history of anti-TB treatment. Nodular bronchiectasis was observed in 34 patients, while 8 patients exhibited fibrocavitary changes. Additionally, 8 patients displayed a combination of both patterns. In a multivariate analysis, MAC-PD patients with CFZ MIC< 0.25 mg/L were significantly associated with culture conversion [OR 8.415, 95% CI (1.983-35.705); P =0.004]. Among patients who had previous TB treatment history, patients with CFZ MIC < 0.25 mg/L had a higher chance of acquiring culture conversion outcomes [(OR 7.737, 95% CI 1.032-57.989); P =0.046]. In contrast, among patients with no previous TB treatment history, the RIF-containing regimen had a higher chance of acquiring culture conversion outcomes [(OR 11.038, 95%CI 1.008-120.888); P = 0.049].

Conclusion: MAC-PD patients unsuitable for standard regimens could benefit from a CFZ-containing regimen, especially for patients with previous TB treatment history and baseline CFZ MIC values lower than 0.25 mg/L.

Keywords: Mycobacterium avium complex; clofazimine; culture conversion; minimum inhibition concentration; pulmonary disease.

2

J Breath Res

. 2023 Dec 13;18(1).

doi: 10.1088/1752-7163/ad10f9.

Device comparison study to measure nasal nitric oxide in relation to primary ciliary dyskinesia

Nils Oskar Jõgi[1], Karin Ersson[1], Kjell Alving[2], Christina Krantz[2], Andrei Malinovschi[1]

Affiliations expand

- PMID: 38088381

- DOI: 10.1088/1752-7163/ad10f9

Abstract

Primary ciliary dyskinesia (PCD) is a genetic respiratory disease characterized by chronic cough, recurrent respiratory infections, and rhinosinusitis. The measurement of nasal nitric

oxide (nNO) against resistance has been suggested as a sensitive screening method. However, current recommendations argue for the use of expensive, chemiluminescence devices to measure nNO. This study aimed to compare nNO measurement using three different devices in distinguishing PCD patients from healthy controls and cystic fibrosis (CF) patients and to evaluate their diagnostic precision. The study included 16 controls, 16 PCD patients, and 12 CF patients matched for age and sex. nNO measurements were performed using a chemiluminescence device (Eco Medics CLD 88sp), and two devices based on electrochemical sensors (Medisoft FeNO+ and NIOX Vero) following standardized guidelines. Correlation estimation, Bland-Altman, ROC curve, and one-way ANOVA were used to assess device differences and diagnostic performance. Significantly lower nNO output values were observed in PCD and CF patients compared to controls during exhalation against resistance. The correlation analysis showed high agreement among the three devices. ROC curve analysis demonstrated 100% sensitivity and specificity at different cut-off values for all devices in distinguishing PCD patients from controls (optimal cut-offs: EcoMedics 73, Medisoft 92 and NIOX 87 (nl min^{-1})). Higher nNO output values were obtained with the Medisoft and NIOX devices as compared to the EcoMedics device, with a bias of-19 nl min^{-1}(95% CI: -73-35) and -21 nl min^{-1}(-73-31) accordingly. These findings indicate that all three tested devices can potentially serve as diagnostic tools for PCD if device specific cut-off values are used. This last-mentioned aspect warrants further studies and consideration in defining optimal cut-offs for individual device.

Keywords: cystic fibrosis; device comparison; nasal nitric oxide; primary ciliary dyskinesia; screening, diagnosis.

Respirology

. 2023 Dec 12.

doi: 10.1111/resp.14644. Online ahead of print.

Treatable traits models of care

Vanessa M McDonald[1 2 3], Anne E Holland[1 4 5 6]

Affiliations expand

- PMID: 38087840

- DOI: 10.1111/resp.14644

Free article

Abstract

Treatable traits is a personalized approach to the management of respiratory disease. The approach involves a multidimensional assessment to understand the traits present in individual patients. Traits are phenotypic and endotypic characteristics that can be identified, are clinically relevant and can be successfully treated by therapy to improve clinical outcomes. Identification of traits is followed by individualized and targeted treatment to those traits. First proposed for the management of asthma and chronic obstructive pulmonary disease (COPD) the approach is recommended in many other areas of respiratory and now immunology medicine. Models of care for treatable traits have been proposed in different diseases and health care setting. In asthma and COPD traits are identified in three domains including pulmonary, extrapulmonary and behavioural/lifestyle/risk-factors. In bronchiectasis and interstitial lung disease, a fourth domain of aetiological traits has been proposed. As the core of treatable traits is personalized and individualized medicine; there are several key aspects to treatable traits models of care that should be considered in the delivery of care. These include person centredness, consideration of patients' values, needs and preferences, health literacy and engagement. We review the models of care that have been proposed and provide guidance on the engagement of patients in this approach to care.

Keywords: airway disease; asthma; chronic respiratory disease; model of care; treatable traits.

- 72 references

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

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4

Med J Aust

. 2023 Dec 11;219(11):516-519.

doi: 10.5694/mja2.52160. Epub 2023 Nov 10.

Chronic suppurative lung disease and bronchiectasis in children, adolescents and adults in Australia and New Zealand: TSANZ position statement summary

Keith Grimwood[1,2], Emma Kennedy[3], Maree Toombs[4], Paul J Torzillo[5], Anne B Chang[6,7]

Affiliations expand

- PMID: 37949609

- DOI: 10.5694/mja2.52160

No abstract available

Keywords: Bronchial diseases; Bronchitis; Respiratory tract infections.

- 25 references

SUPPLEMENTARY INFO

MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

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Cite

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5

Am J Respir Crit Care Med

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. 2023 Dec 15;208(12):1265-1267.

doi: 10.1164/rccm.202308-1468VP.

The Chronic Obstructive Pulmonary Disease (COPD)–Bronchiectasis Overlap Syndrome: Does My COPD Patient Have Bronchiectasis on Computed Tomography? "Frankly, My Dear, I Don't Give a Damn!"

Mark L Metersky[1], Mark T Dransfield[2]

Affiliations expand

- PMID: 37796579

- DOI: 10.1164/rccm.202308-1468VP

No abstract available

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

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6

Microbiol Spectr

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. 2023 Dec 12;11(6):e0221323.

doi: 10.1128/spectrum.02213-23. Epub 2023 Oct 5.

Airway microbiota correlated with pulmonary exacerbation in primary ciliary dyskinesia patients

Weitao Zhou[#1], Zhuoyao Guo[#1], Jinglong Chen[1], Yao Chen[1], Chen He[1], Aizhen Lu[1], Liling Qian[1]

Affiliations expand

- PMID: 37796006

- PMCID: PMC10715216

- DOI: 10.1128/spectrum.02213-23

Free PMC article

Abstract

PCD is a rare disease characterized by productive cough, rhinitis, and recurrent infections of the upper and lower airways. Because the diagnosis of PCD is often delayed, patients receive more antibiotics, experience a heavier financial burden, and have a worse prognosis; thus, it is very important to identify the pathogeny and use the correct antibiotic. In this large single-center study of PCD microbiota, we identified an outline of the bacterial microbes from the respiratory tract; furthermore, we found that the microbiota diversity in pediatric sputum was richer than that in pediatric BALF through sequencing, indicating a heterogeneous community structure. The microbiota diversity and richness were lower during pulmonary exacerbation than during pulmonary stabilization. A significantly higher abundance of *Pseudomonas* had a moderate distinguishing effect for lung exacerbation, which attracted more attention for the study of *Pseudomonas* therapy in pediatric patients with PCD.

Keywords: airway microbiota; microbiota diversity; primary ciliary dyskinesia; pulmonary exacerbation.

Conflict of interest statement

The authors declare no conflict of interest.

- 37 references
- 4 figures

SUPPLEMENTARY INFO

MeSH terms, Substances, Grants and fundingexpand

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SPECTRUM OPEN ACCESS UNIMORE

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7

Thorax

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. 2023 Dec 15;79(1):13-22.

doi: 10.1136/thorax-2023-220021.

Automatic analysis of bronchus–artery dimensions to diagnose and monitor airways disease in cystic fibrosis

Qianting Lv[1,2], Leticia Gallardo-Estrella[3], Eleni-Rosalina Andrinopoulou[4], Yuxin Chen[1,2], Jean-Paul Charbonnier[3], Rikke Mulvad Sandvik[5,6], Daan Caudri[1,2], Kim Gjerum Nielsen[5,7], Marleen de Bruijne[8,9], Pierluigi Ciet[1,2,10], Harm Tiddens[11,2,3]

Affiliations expand

- PMID: 37734952

- DOI: 10.1136/thorax-2023-220021

Free article

Abstract

Background: Cystic fibrosis (CF) lung disease is characterised by progressive airway wall thickening and widening. We aimed to validate an artificial intelligence-based algorithm to assess dimensions of all visible bronchus-artery (BA) pairs on chest CT scans from patients with CF.

Methods: The algorithm fully automatically segments the bronchial tree; identifies bronchial generations; matches bronchi with the adjacent arteries; measures for each BA-pair bronchial outer diameter (B_{out}), bronchial lumen diameter (B_{in}), bronchial wall thickness (B_{wt}) and adjacent artery diameter (A); and computes B_{out}/A, B_{in}/A and B_{wt}/A for each BA pair from the segmental bronchi to the last visible generation. Three datasets were used to validate the automatic BA analysis. First BA analysis was executed on 23 manually

annotated CT scans (11 CF, 12 control subjects) to compare automatic with manual BA-analysis outcomes. Furthermore, the BA analysis was executed on two longitudinal datasets (Copenhagen 111 CTs, ataluren 347 CTs) to assess longitudinal BA changes and compare them with manual scoring results.

Results: The automatic and manual BA analysis showed no significant differences in quantifying bronchi. For the longitudinal datasets the automatic BA analysis detected 247 and 347 BA pairs/CT in the Copenhagen and ataluren dataset, respectively. A significant increase of 0.02 of B_{out}/A and B_{in}/A was detected for Copenhagen dataset over an interval of 2 years, and 0.03 of B_{out}/A and 0.02 of B_{in}/A for ataluren dataset over an interval of 48 weeks (all $p<0.001$). The progression of 0.01 of B_{wt}/A was detected only in the ataluren dataset ($p<0.001$). BA-analysis outcomes showed weak to strong correlations (correlation coefficient from 0.29 to 0.84) with manual scoring results for airway disease.

Conclusion: The BA analysis can fully automatically analyse a large number of BA pairs on chest CTs to detect and monitor progression of bronchial wall thickening and bronchial widening in patients with CF.

Keywords: Bronchiectasis; Cystic Fibrosis; Imaging/CT MRI etc; Paediatric Lung Disaese.

Conflict of interest statement

Competing interests: HT has received in the last 5 years multiple grants from the following public and institutional grant institutions for lung structure and function research: NHMRC, NIH, CFF, ECFS, IMI, Sophia Foundation. He received unconditional grants for investigator-initiated research from Chiesi; Vectura, Novartis and Insmed. He has acted as consultant for Insmed, TBIO, Thirona, Neupharma and Boehringer. He has a part time position as chief medical officer for Thirona. He functions as vice chair and faculty for the Advance course sponsored by Vertex. He owns no shares. LG-E is a scientist working at Thirona. JPC is shareholder at Thirona. DC is director of the Erasmus MC-LungAnalysis laboratory. PC acted as consultant for Vertex and Chiesi Pharmaceuticals.