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

1
COPD

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. 2024 Dec;21(1):2361669.

doi: 10.1080/15412555.2024.2361669. Epub 2024 Jun 11.

In a Strained Healthcare System, Patients with Advanced COPD Struggle to Access the Needed Support from the Healthcare Professionals – A Qualitative Study

M Lavesen[1], M Paine[1], D G Bove[2,3]

Affiliations expand

- PMID: 38863257

- DOI: 10.1080/15412555.2024.2361669

Abstract

This study aimed to explore the self-management strategies of Danish patients living with advanced Chronic Obstructive Pulmonary Disease (COPD), with a particular focus on their daily life and their interactions with the respiratory outpatient clinic. Data were collected through semi-structured interviews with 11 patients with COPD affiliated with a Danish respiratory outpatient clinic. The data were thematically analyzed as suggested by Braun & Clarke. The analysis revealed one overarching theme, three main themes, and six subthemes. The overarching theme 'In a strained healthcare system patients with COPD struggle to access needed support to be able to self-manage their disease' revolved around the challenges that patients face in an overburdened healthcare system as they seek support to effectively self-manage their condition. The three main themes were: (1) Only physical symptoms provide legal access to the respiratory outpatient clinic, (2) For patients, the measurements serve as indicators of their health status and overall well-being, (3) Healthcare professionals' skills and not the mode of contact matters to the patients. Healthcare professionals should be aware that the rhetoric surrounding a busy healthcare system with a stressed-out staff also affects patients. Patients with COPD may be particularly sensitive to this message and try to avoid burdening the healthcare system further by setting aside their own needs. However, this approach can lead to neglecting symptoms of deterioration and mental symptoms, which increase the risk of disease progression and subsequent risk of hospital admission.

Keywords: COPD; daily life; healthcare system; outpatient; qualitative; support.

2

Am J Respir Crit Care Med

. 2024 Jun 15;209(12):1508-1510.

doi: 10.1164/rccm.202401-0121LE.

Airway-occluding Mucus Plugs and Cause-specific Mortality in Chronic Obstructive Pulmonary Disease

Sofia K Mettler[1,2,3], Sushilkumar Sonavane[4], Scott Grumley[5], Hrudaya P Nath[5], Andrew C Yen[6], Carrie Pistenmaa[7,3], Pietro Nardelli[8,3], Raul San Jose Estepar[8,3], Michael H Cho[2,7,3], Alejandro A Diaz[7,3]

Affiliations expand

- PMID: 38771048

- DOI: 10.1164/rccm.202401-0121LE

No abstract available

SUPPLEMENTARY INFO

Publication types, MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

AJRCCM Full Text

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Am J Respir Crit Care Med

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. 2024 Jun 15;209(12):1431-1440.

doi: 10.1164/rccm.202212-2330OC.

Can We Use Lung Function Thresholds and Respiratory Symptoms to Identify Pre–Chronic Obstructive Pulmonary Disease? A Prospective, Population–based Cohort Study

Daniel J Tan[1,2], Caroline J Lodge[1], E Haydn Walters[1,3], Dinh S Bui[1], Jonathan Pham[1,4], Adrian J Lowe[1], Gayan Bowatte[1,5], Don Vicendese[1,6], Bircan Erbas[7,8], David P Johns[1,3], Alan L James[9], Peter Frith[10], Garun S Hamilton[2,11], Paul S Thomas[12], Richard Wood-Baker[3], MeiLan K Han[13], George R Washko[14], Michael J Abramson[15], Jennifer L Perret[1,16,17], Shyamali C Dharmage[1]

Affiliations expand

- PMID: 38236192

- DOI: 10.1164/rccm.202212-2330OC

Abstract

Rationale: The term "pre-chronic obstructive pulmonary disease" ("pre-COPD") refers to individuals at high risk of developing COPD who do not meet conventional spirometric criteria for airflow obstruction. New approaches to identifying these individuals are needed, particularly in younger populations. **Objectives:** To determine whether lung function thresholds and respiratory symptoms can be used to identify individuals at risk of developing COPD. **Methods:** The Tasmanian Longitudinal Health Study comprises a population-based cohort first studied in 1968 (at age 7 yr). Respiratory symptoms, pre- and post-bronchodilator (BD) spirometry, diffusing capacity, and static lung volumes were measured in a subgroup at age 45, and the incidence of COPD was assessed at age 53. For each lung function measure, *z*-scores were calculated using Global Lung Function Initiative references. The optimal threshold for best discrimination of COPD incidence was determined by the unweighted Youden index. **Measurements and Main Results:** Among 801 participants who did not have COPD at age 45, the optimal threshold for COPD incidence by age 53 was pre-BD FEV_1/FVC *z*-score less than -1.264, corresponding to the lowest 10^{th} percentile. Those below this threshold had a 36-fold increased risk of developing COPD over an 8-year follow-up period (risk ratio, 35.8; 95% confidence interval, 8.88 to 144), corresponding to a risk difference of 16.4% (95% confidence interval, 3.7 to 67.4). The sensitivity was 88%, and the specificity was 87%. Positive and negative likelihood ratios were 6.79 and 0.14, respectively. Respiratory symptoms, post-BD spirometry, diffusing capacity, and static lung volumes did not improve on the classification achieved

by pre-BD FEV_1/FVC alone. **Conclusions:** This is the first study, to our knowledge, to evaluate the discriminatory accuracy of spirometry, diffusing capacity, and static lung volume thresholds for COPD incidence in middle-aged adults. Our findings support the inclusion of pre-BD spirometry in the physiological definition of pre-COPD and indicate that pre-BD FEV_1/FVC at the 10th percentile accurately identifies individuals at high risk of developing COPD in community-based settings.

Keywords: COPD; diffusing capacity; lung volumes; pre-COPD; spirometry.

Comment in

- Funding Population-based Cohorts: Still Relevant for Respiratory Epidemiology in the Era of Big Data.
  Checkley W, Hurst JR, Wise RA.Am J Respir Crit Care Med. 2024 Jun 15;209(12):1417-1418. doi: 10.1164/rccm.202401-0172ED.PMID: 38358824 No abstract available.

- Cited by 1 article

. 2024 Jun 14.

doi: 10.1001/jama.2024.10342. Online ahead of print.

Early Therapy for Symptomatic COPD, Asthma Improved Quality of Life

Emily Harris

- PMID: 38874938

- DOI: 10.1001/jama.2024.10342

No abstract available

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Clin Physiol Funct Imaging

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. 2024 Jun 14.

doi: 10.1111/cpf.12895. Online ahead of print.

Expiratory and inspiratory resistance and reactance from respiratory oscillometry defining expiratory flow limitation in obstructive lung diseases

Abir Nasr[1], Georgia Papapostolou[1], Linnea Jarenbäck[1], Kerstin Romberg[2], Alf Tunsäter[1], Jaro Ankerst[1], Leif Bjermer[1], Ellen Tufvesson[1]

Affiliations expand

- PMID: 38873744

- DOI: 10.1111/cpf.12895

Abstract

Background: Expiratory flow limitation (EFL) during tidal breathing and lung hyperinflation have been identified as major decisive factors for disease status, prognosis and response to therapy in obstructive lung diseases.

Aim: To investigate the delta values between expiratory and inspiratory resistance and reactance, measured using respiratory oscillometry and its correlation with air trapping and symptoms in subjects with obstructive lung diseases.

Methods: Four hundred and seventy-one subjects (96 with chronic obstructive pulmonary disease [COPD], 311 with asthma, 30 healthy smokers and 34 healthy subjects) were included. Spirometry, body plethysmography and respiratory oscillometry measurements were performed and the differences between the expiratory and inspiratory respiratory oscillometry values (as delta values) were calculated. Questionnaires regarding symptoms and quality of life were administered.

Results: Patients with COPD and healthy smokers had an increased delta resistance at 5 Hz (R5) compared with patients with asthma ($p < 0.0001$ and $p = 0.037$, respectively) and healthy subjects ($p = 0.0004$ and $p = 0.012$, respectively). Patients with COPD also had higher values of ΔR5-R19 than healthy subjects ($p = 0.0001$) and patients with asthma ($p < 0.0001$). Delta reactance at 5 Hz (X5) was significantly more impaired in COPD patients than in asthma and healthy subjects ($p < 0.0001$ for all). There was a correlation between the ratio of residual volume and total lung capacity and ΔR5 ($p = 0.0047$; $r = 0.32$), ΔR5-R19 ($p = 0.0002$; $r = 0.41$) and ΔX5 ($p < 0.0001$; $r = -0.44$), for all subjects. ΔX5 correlated with symptoms in COPD, healthy smokers and patients with asthma. In addition, ΔR5 correlated with asthma symptoms.

Conclusion: EFL was most prominent in parameters measuring peripheral resistance and reactance and correlated with air trapping and airway symptoms.

Keywords: COPD; airflow limitation; airway obstruction; asthma; smoker.

- 46 references

SUPPLEMENTARY INFO

Grants and fundingexpand

Proceed to details

6

Review

PLOS Digit Health

. 2024 Jun 13;3(6):e0000532.

doi: 10.1371/journal.pdig.0000532. eCollection 2024 Jun.

Smartphone applications supporting self-management programme for adults with Chronic Obstructive Pulmonary Disease: A Scoping Review

Lisa Glynn[1], Margaret Mc Cann[2], Catherine Mc Cabe[2]

Affiliations expand

- PMID: 38870123
- PMCID: PMC11175531
- DOI: 10.1371/journal.pdig.0000532

Abstract

Introduction: Chronic Obstructive Pulmonary Disease (COPD) significantly impacts on both the quality and quantity of life for patients due to frequent exacerbations requiring hospital admissions resulting in increased morbidity and mortality. A self-management

programme purpose is to increase one's knowledge, confidence, and skills to self-manage their chronic illness such as COPD.

Objective: The objective of this review will therefore answer the following research question: What is the current literature pertaining to the use of a smartphone app in supporting a comprehensive self-management programme among COPD patients? A preliminary search was conducted in, Medline, Embase and CINAHL databases to ascertain index terms and keywords. Following this a rigorous search was carried out on Medline, Embase, CINAHL, Web of Science and ASSIA. The findings from this search are presented in tabular form using the PRSIMA flow diagram.

Results: In this review, fifteen studies met the inclusion criteria. Across all studies participants engaged with the app and developed self-management skills and knowledge to manage their chronic illness. However, engagement with the app without third party involvement declined over time. Technical issues did not cause harm to participants but in some cases contributed to reduced engagement. Smartphone self-management apps empowered a cohort of COPD participants to engage in managing their chronic illness which proved useful in detecting exacerbations earlier resulting in reducing the need for hospitalisations over a three-to-six-month period. By reducing hospitalisations incurred a cost savings for health care and an improved quality and quantity of life for these participants.

Conclusion: It is evident from the literature that smartphone self-management apps may positively influence participants self-management decisions in terms of knowledge, increase physical activity, self-efficacy that may result in reduced hospitalisation and improved quality of life. It is clear that technical issues and sustained engagement over longer periods of time remains a challenge.

Conflict of interest statement

The authors have declared that no competing interests exist.

- 44 references
- 1 figure

SUPPLEMENTARY INFO

Publication types, Grants and fundingexpand

Proceed to details

Cite

Randomized Controlled Trial

N Engl J Med

. 2024 Jun 13;390(22):2061-2073.

doi: 10.1056/NEJMoa2401389. Epub 2024 May 19.

Early Diagnosis and Treatment of COPD and Asthma – A Randomized, Controlled Trial

Shawn D Aaron[1], Katherine L Vandemheen[1], G Alex Whitmore[1], Celine Bergeron[1], Louis-Philippe Boulet[1], Andréanne Côté[1], R Andrew McIvor[1], Erika Penz[1], Stephen K Field[1], Catherine Lemière[1], Irvin Mayers[1], Mohit Bhutani[1], Tanweer Azher[1], M Diane Lougheed[1], Samir Gupta[1], Nicole Ezer[1], Christopher J Licskai[1], Paul Hernandez[1], Martha Ainslie[1], Gonzalo G Alvarez[1], Sunita Mulpuru[1]; UCAP Investigators

Collaborators, Affiliations expand

- PMID: 38767248

- DOI: 10.1056/NEJMoa2401389

Abstract

Background: Many persons with chronic obstructive pulmonary disease (COPD) or asthma have not received a diagnosis, so their respiratory symptoms remain largely untreated.

Methods: We used a case-finding method to identify adults in the community with respiratory symptoms without diagnosed lung disease. Participants who were found to have undiagnosed COPD or asthma on spirometry were enrolled in a multicenter, randomized, controlled trial to determine whether early diagnosis and treatment reduces health care utilization for respiratory illness and improves health outcomes. Participants

were assigned to receive the intervention (evaluation by a pulmonologist and an asthma-COPD educator who were instructed to initiate guideline-based care) or usual care by their primary care practitioner. The primary outcome was the annualized rate of participant-initiated health care utilization for respiratory illness. Secondary outcomes included changes from baseline to 1 year in disease-specific quality of life, as assessed with the St. George Respiratory Questionnaire (SGRQ; scores range from 0 to 100, with lower scores indicating better health status); symptom burden, as assessed with the COPD Assessment Test (CAT; scores range from 0 to 40, with lower scores indicating better health status); and forced expiratory volume in 1 second (FEV_1).

Results: Of 38,353 persons interviewed, 595 were found to have undiagnosed COPD or asthma and 508 underwent randomization: 253 were assigned to the intervention group and 255 to the usual-care group. The annualized rate of a primary-outcome event was lower in the intervention group than in the usual-care group (0.53 vs. 1.12 events per person-year; incidence rate ratio, 0.48; 95% confidence interval [CI], 0.36 to 0.63; P<0.001). At 12 months, the SGRQ score was lower than the baseline score by 10.2 points in the intervention group and by 6.8 points in the usual-care group (difference, -3.5 points; 95% CI, -6.0 to -0.9), and the CAT score was lower than the baseline score by 3.8 points and 2.6 points, respectively (difference, -1.3 points; 95% CI, -2.4 to -0.1). The FEV_1 increased by 119 ml in the intervention group and by 22 ml in the usual-care group (difference, 94 ml; 95% CI, 50 to 138). The incidence of adverse events was similar in the trial groups.

Conclusions: In this trial in which a strategy was used to identify adults in the community with undiagnosed asthma or COPD, those who received pulmonologist-directed treatment had less subsequent health care utilization for respiratory illness than those who received usual care. (Funded by Canadian Institutes of Health Research; UCAP ClinicalTrials.gov number, NCT03148210.).

Clin Exp Allergy

. 2024 Jun 12.

doi: 10.1111/cea.14521. Online ahead of print.

Inhaled Corticosteroids Versus Placebo for Stable Chronic Obstructive Pulmonary Disease: A Review

Erin Kamalanathan[1], Sargam Sharma[1]

Affiliations expand

- PMID: 38866712

- DOI: 10.1111/cea.14521

Abstract

This is an abstract of a Cochrane review 'Inhaled corticosteroids versus placebo for stable chronic obstructive pulmonary disease' published in Cochrane Database of Systematic Reviews 2023 Issue 3 10.1002/14651858.cd002991.pub4. Accessed 9 May 2024 (see www.cochranelibrary.com for information). Cochrane reviews are regularly updated as new evidence emerges and in response to feedback, and the Cochrane Library should be consulted for the more recent version of the review.

Keywords: asthma; basic mechanisms; education; pharmacology and pharmacogenomics; quality-of-life.

- 7 references

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Editorial

Breathe (Sheff)

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. 2024 Jun 11;20(2):230272.

doi: 10.1183/20734735.0272-2023. eCollection 2024 Jun.

The importance of addressing physical activity and exercise intolerance in our patients with COPD

Roger Goldstein[1,2], José R Jardim[3], Linda Nici[4,5], Jonathan Raskin[6], Martijn A Spruit[7,8], Richard ZuWallack[9]

Affiliations expand

- PMID: 38873238

- PMCID: PMC11167653

- DOI: 10.1183/20734735.0272-2023

Abstract

Both increased physical activity and increased exercise capacity are desired outcomes in the treatment of individuals with COPD https://bit.ly/4apLYzm.

Conflict of interest statement

Conflict of interest: M.A. Spruit reports that he is the lead on COPD/asthma-related research projects funded by Netherlands Lung Foundation, Stichting Astma Bestrijding, Boehringer Ingelheim, AstraZeneca, GSK, Sanofi and TEVA; and he has served on

respiratory-related advisory boards for Boehringer Ingelheim, AstraZeneca and GSK. All payments were made to his employer and all disclosures are made outside the submitted work. The remaining authors have nothing to disclose.

SUPPLEMENTARY INFO

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Review

Breathe (Sheff)

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. 2024 Jun 11;20(2):230179.

doi: 10.1183/20734735.0179-2023. eCollection 2024 Jun.

Prevalence and prognostic importance of exercise limitation and physical inactivity in COPD

Anouk W Vaes[1], Chris Burtin[2], Richard Casaburi[3], Bartolome R Celli[4], Rachael A Evans[5], Suzanne C Lareau[6], Linda Nici[7,8], Carolyn L Rochester[9,10], Thierry Troosters[11]

Affiliations expand

- PMID: 38873237

- PMCID: PMC11167648

- DOI: 10.1183/20734735.0179-2023

Abstract

Exercise limitation and physical inactivity are separate, but related constructs. Both are commonly present in individuals with COPD, contribute to disease burden over and above the respiratory impairments, and are independently predictive of adverse outcomes. Because of this, clinicians should consider assessing these variables in their patients with COPD. Field tests of exercise performance such as the 6-min walk test and the incremental and endurance shuttle walk tests require limited additional resources, and results correlate with negative outcomes. Laboratory measures of exercise performance using a treadmill or cycle ergometer assess exercise capacity, provide prognostic information and have the advantage of explaining physiological mechanisms (and their interactions) underpinning exercise limitation. Limitations in exercise capacity (*i.e.* "cannot do") and physical inactivity (*i.e.* "do not do") are both associated with mortality; exercise limitation appears to be the more important driver of this outcome.

Conflict of interest statement

Conflict of interest: All authors have no perceived conflict of interest.

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Review

Breathe (Sheff)

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. 2024 Jun 11;20(2):230180.

doi: 10.1183/20734735.0180-2023. eCollection 2024 Jun.

Unravelling the complex interplay of factors behind exercise limitations and physical inactivity in COPD

Clarice Y Tang[1,2], Bruce Bernstein[3,4], Felicity Blackstock[2,5], Astrid Blondeel[6], Andrea Gershon[7], Elena Gimeno-Santos[8,9,10], Rainer Gloeckl[11], Alda Marques[12], Martijn A Spruit[13,14], Chris Garvey[15], Mike Morgan[16], Linda Nici[17,18], Sally J Singh[19], Thierry Troosters[6]

Affiliations expand

- PMID: 38873234

- PMCID: PMC11167652

- DOI: 10.1183/20734735.0180-2023

Abstract

Exercise limitation and physical inactivity are known treatable traits for people with COPD. Maximising exercise capacity and keeping people physically active improves health status and survival rates among people with COPD. However, managing these two treatable traits can be extremely challenging for clinicians due to the complex intersectionality of factors influencing an individual's capacity, opportunity and motivation to engage in physical activity. This review presents the complex factors influencing exercise capacity ("can do"), levels of physical activity ("do do") and sedentary behaviours amongst people with COPD and provides practical recommendations on how clinicians can address some of these factors in practice. Most importantly, it highlights the importance of referring to pulmonary rehabilitation as a way to improve exercise capacity among people with COPD.

Conflict of interest statement

Conflict of interest: B. Bernstein reports receiving grants from Trinity Healthcare/St Francis Hospital and Medical Center. C. Garvey reports being a part of the speaker's bureau for Boehringer Ingelheim regarding fibrotic lung disease, this disclosure has been made outside the submitted work. M.A. Spruit reports being lead on COPD/asthma-related research projects, funded by Netherlands Lung Foundation, Stichting Astma Bestrijding, Boehringer Ingelheim, AstraZeneca, GSK, Sanofi, and TEVA; and has served on respiratory-

related advisory boards of Boehringer Ingelheim, AstraZeneca, and GSK. S.J. Singh reports being a National Institute for Health Research (NIHR) Senior Investigator. This work was supported by the NIHR Leicester Biomedical Research Centre (BRC). The views expressed in this article are those of the author(s) and not necessarily those of the NIHR, or the Department of Health and Social Care. The remaining authors do not have any conflict of interest to declare.

SUPPLEMENTARY INFO

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Am J Cardiol

. 2024 Jun 11:S0002-9149(24)00427-2.

doi: 10.1016/j.amjcard.2024.06.005. Online ahead of print.

Atherosclerotic Coronary Plaque Features in Patients with Chronic Obstructive Pulmonary Disease and Acute Coronary Syndrome

Michele Russo[1], Massimiliano Camilli[2], Giulia La Vecchia[3], Riccardo Rinaldi[3], Alice Bonanni[3], Matteo Pio Natale[4], Carmine Salzillo[3], Ilaria Torre[3], Carlo Trani[2], Filippo Crea[2], Rocco A Montone[5]

Affiliations expand

- PMID: 38871157

- DOI: 10.1016/j.amjcard.2024.06.005

Abstract

Previous studies reported a robust relationship between chronic obstructive pulmonary disease (COPD) and coronary artery disease (CAD). Systemic inflammation has been proposed as possible pathogenetic mechanism linking these two entities, although data on atherosclerotic coronary features in COPD patients are lacking. We studied atherosclerotic coronary plaque features in COPD patients presenting with acute coronary syndromes (ACS) by using optical coherence tomography (OCT). ACS patients undergoing intracoronary OCT imaging of the culprit vessel were enrolled. Coronary plaque characteristics and OCT-defined macrophage infiltration (MØI) were assessed by OCT. ACS patients were divided into two groups according to the presence of an established diagnosis of COPD, and plaque features at the culprit site and along the culprit vessel were compared between the groups. Among 146 ACS patients (mean age:66.1±12.7 years, 109 males), 47 (32.2%) had COPD. Patients with COPD had significantly higher prevalence of MØI (78.7% vs. 54.5%, p=0.005) and thin cap fibroatheroma (TCFA) (48.9% vs. 22.2%, p=0.001) at the culprit site. In the multivariate logistic regression, COPD was independently associated with MØI (OR:21.209, CI95%:1.679;267.910, p=0.018) and TCFA at the culprit site (OR:5.345, CI95%:1.386;20.616, p=0.015). Similarly, COPD was independently associated with both MØI (OR:3.570, CI95%:1.472;8.658, p=0.005) and TCFA (OR:4.088, CI95%:1.584;10.554, p=0.004) along the culprit vessel. In conclusion, in ACS patients undergoing OCT imaging of the culprit vessel, COPD was an independent predictor of plaque inflammation and vulnerability. These results may suggest that a higher inflammatory milieu in COPD patients might enhance local coronary inflammation, promoting CAD development and plaque vulnerability.

Keywords: chronic obstructive pulmonary disease; optical coherence tomography; plaque inflammation; vulnerable plaque.

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.

Respirology

. 2024 Jun 11.

doi: 10.1111/resp.14760. Online ahead of print.

Treatable traits in pre-COPD: Time to extend the treatable traits paradigm beyond established disease

Shyamali C Dharmage[1], Rosa Faner[2 3 4], Alvar Agustí[3 4 5 6]

Affiliations expand

- PMID: 38862131

- DOI: 10.1111/resp.14760

Abstract

To date, the treatable traits (TTs) approach has been applied in the context of managing diagnosed diseases. TTs are clinical characteristics and risk factors that can be identified clinically and/or biologically, and that merit treatment if present. There has been an exponential increase in the uptake of this approach by both researchers and clinicians. Realizing the potential of the TTs approach to pre-clinical disease, this expert review proposes that it is timely to consider acting on TTs present before a clinical diagnosis is made, which might help to prevent development of the full disease. Such an approach is ideal for diseases where there is a long pre-clinical phase, such as in chronic obstructive pulmonary disease (COPD). The term 'pre-COPD' has been recently proposed to identify patients with respiratory symptoms and/or structural or functional abnormalities without airflow limitation. They may eventually develop airflow limitation with time but patients with pre-COPD are likely to have traits that are already treatable. This review first outlines the contribution of recently generated knowledge into lifetime lung function trajectories and the conceptual framework of 'GETomics' to the field of pre-COPD. GETomics is a dynamic and cumulative model of interactions between genes and the environment throughout the lifetime that integrates information from multi-omics to understand aetiology and mechanisms of diseases. This review then discusses the current evidence on potential TTs in pre-COPD patients and makes recommendations for practice and future

research. At a broader level, this review proposes that introducing the TTs in pre-COPD may help reenergize the preventive approaches to health and diseases.

Keywords: COPD; precision medicine; pre-COPD; treatable trait.

- 97 references

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Am J Respir Crit Care Med

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. 2024 Jun 11.

doi: 10.1164/rccm.202402-0432PP. Online ahead of print.

Early Life Exposures and the Development of COPD Across the Life Course

Nicholas S Hopkinson[1,2], Andrew Bush[1], James P Allinson[1], Rosa Faner[3], Heather J Zar[4,5], Alvar Agustí[6]

Affiliations expand

- PMID: 38861321

- DOI: 10.1164/rccm.202402-0432PP

No abstract available

Keywords: Childhood; lung function trajectories; structural violence.

15

Editorial

J Allergy Clin Immunol

. 2024 Jun 10:S0091-6749(24)00603-1.

doi: 10.1016/j.jaci.2024.06.004. Online ahead of print.

Asthma–COPD coexistence

Peter J Barnes[1]

Affiliations expand

- PMID: 38866207

- DOI: 10.1016/j.jaci.2024.06.004

No abstract available

Keywords: ACOS; Asthma; COPD; asthma-COPD overlap; eosinophilic COPD; neutrophilic asthma.

SUPPLEMENTARY INFO

Publication typesexpand

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PLoS One

. 2024 Jun 10;19(6):e0304362.

doi: 10.1371/journal.pone.0304362. eCollection 2024.

Prescription patterns and effectiveness of medications for chronic obstructive pulmonary disease: A retrospective study of real-world settings

Hye Jung Park[1], Jae Uk Lee[1], Soyoung Jeon[2], Hye Sun Lee[2], Bo Yeon Kim[3], Yu Jin Chae[3], Gui Ok Kim[3], Jung-Won Park[4,5], Jae-Hyun Lee[4,5]

Affiliations expand

- PMID: 38857214

- PMCID: PMC11164367

- DOI: 10.1371/journal.pone.0304362

Abstract

This study aimed to define real-world prescription patterns in Korea and compare the effectiveness of chronic obstructive pulmonary disease (COPD) medications. We used national claims data provided by the Health Insurance Review and Assessment Service in Korea and examined patients who were first diagnosed with COPD and started treatment between May 1, 2017, and April 30, 2018, with no change in drug regimen. Among 30,784 patients with COPD, long-acting β2 agonist (LABA) combined with long-acting muscarinic antagonist (LAMA) (32.7%), inhaled corticosteroid-LABA (ICS-LABA) (25.6%), LAMA (18.3%), ICS (5.8%), or LABA (4.6%) were prescribed as the first-choice inhalers. The use of LABA-LAMA (hazard ratio [HR], 0.248-0.584), LAMA (HR, 0.320-0.641), ICS-LABA (HR, 0.325-0.643), and xanthine (HR, 0.563-0.828) significantly reduced the total and severe exacerbation rates compared with no use of each medication. However, the use of ICS or LABA individually did not yield such effects. The continued use of LABA-LAMA, LAMA, and ICS-LABA showed a significant effect on exacerbation rate, whereas the long-term use of ICS, LABA, and xanthine did not. Moreover, some high doses of ICS-LABA did not show significant effects. This real-world study revealed that LAMA and/or LABA could be the first choice of therapy, as recommended by recent guidelines. However, ICS, xanthine, and high-dose ICS-LABA are still being prescribed frequently as first-line drugs in Korea.

Conflict of interest statement

The authors have declared that no competing interests exist.

- 30 references
- 3 figures

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

1
HIV Res Clin Pract

. 2024 Dec;25(1):2361176.

doi: 10.1080/25787489.2024.2361176. Epub 2024 Jun 13.

Comorbidity and polypharmacy among people with HIV stratified by age, sex, and race

Misti Paudel[1], Girish Prajapati[2], Erin K Buysman[1], Swarnali Goswami[2], Kimberly McNiff[1], Princy Kumar[3], Bekana K Tadese[2]

Affiliations expand

- PMID: 38869017

- DOI: 10.1080/25787489.2024.2361176

Abstract

Background: With an increase in life expectancy of people with HIV, there is a corresponding rise in comorbidities and consequent increases in comedications. **Objective:** This study compared comorbidity and polypharmacy among people with HIV and people without HIV stratified by age, sex, and race. **Methods:** This retrospective study utilised administrative claims data to identify adult people with HIV with antiretroviral therapy (ART) claims and HIV diagnosis codes from 01 January 2018 to 31 December 2018. Index date was the earliest ART claim or HIV diagnosis in the absence of ART claims. Inclusion required continuous enrolment for ≥12-month pre-index and ≥30-day post-index, along with ≥1 HIV diagnosis during baseline or follow-up. People with HIV were matched 1:2 with people without HIV on sociodemographic. Results were compared using z-tests with robust standard errors in an ordinary least squares regression or Rao-Scott tests. **Results:** Study sample comprised 20,256 people with HIV and 40,512 people without HIV. Mean age was 52.3 years, 80.0% males, 45.9% Caucasian, and 28.5% African American. Comorbidities were significantly higher in younger age people with HIV than

people without HIV. Female had higher comorbidity across all comorbidities especially younger age people with HIV. Polypharmacy was also significantly greater for people with HIV versus people without HIV across all age categories, and higher in females. Across races, multimorbidity and polypharmacy were significantly greater for people with HIV versus people without HIV. **Conclusions:** Comorbidities and polypharmacy may increase the risk for adverse drug-drug interactions and individualised HIV management for people with HIV across all demographics is warranted.

Keywords: ART; HIV; comorbidity; people with HIV; polypharmacy.

SUPPLEMENTARY INFO

MeSH terms, Substancesexpand

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2

Am J Hypertens

. 2024 Jun 14;37(7):493-502.

doi: 10.1093/ajh/hpae040.

Trends in the Prevalence of Multiple Chronic Conditions Among US Adults With Hypertension From 1999–2000 Through 2017–2020

Chibuike J Alanaeme[1], Lama Ghazi[1], Oluwasegun P Akinyelure[1], Ying Wen[1], Ashley Christenson[1], Bharat Poudel[1], Erin E Dooley[1], Ligong Chen[1], Shakia T Hardy[2], Kathryn Foti[1], C Barrett Bowling[3,4], Michelle T Long[5], Lisandro D Colantonio[1], Paul Muntner[1]

Affiliations expand

- PMID: 38576398

- DOI: 10.1093/ajh/hpae040

Abstract

Background: The prevalence of many chronic conditions has increased among US adults. Many adults with hypertension have other chronic conditions.

Methods: We estimated changes in the age-adjusted prevalence of multiple (≥3) chronic conditions, not including hypertension, using data from the National Health and Nutrition Examination Survey, from 1999-2000 to 2017-2020, among US adults with (n = 24,851) and without (n = 24,337 hypertension. Hypertension included systolic blood pressure (BP) ≥130 mm Hg, diastolic BP ≥80 mm Hg, or antihypertensive medication use. We studied 14 chronic conditions: arthritis, asthma, cancer, coronary heart disease, chronic kidney disease, depression, diabetes, dyslipidemia, hepatitis B, hepatitis C, heart failure, lung disease, obesity, and stroke.

Results: From 1999-2000 to 2017-2020, the age-adjusted mean number of chronic conditions increased more among US adults with vs. without hypertension (2.2 to 2.8 vs. 1.7 to 2.0; P-interaction <0.001). Also, the age-adjusted prevalence of multiple chronic conditions increased from 39.0% to 52.0% among US adults with hypertension and from 26.0% to 30.0% among US adults without hypertension (P-interaction = 0.022). In 2017-2020, after age, gender, and race/ethnicity adjustment, US adults with hypertension were 1.94 (95% confidence interval: 1.72-2.18) times as likely to have multiple chronic conditions compared to those without hypertension. In 2017-2020, dyslipidemia, obesity, and arthritis were the most common 3 co-occurring chronic conditions among US adults with and without hypertension (age-adjusted prevalence 16.5% and 3.1%, respectively).

Conclusions: In 2017-2020, more than half of US adults with hypertension had ≥3 additional chronic conditions, a substantial increase from 20 years ago.

Keywords: NHANES; blood pressure; chronic conditions; epidemiology; hypertension; multimorbidity.

Comment in

- The Rising Prevalence of Multiple Chronic Conditions Among US Adults With Hypertension.

Casey DE Jr, Oglesby B, Pohlman D.Am J Hypertens. 2024 Jun 14;37(7):449-451. doi: 10.1093/ajh/hpae045.PMID: 38635289 No abstract available.

SUPPLEMENTARY INFO

MeSH terms, Grants and fundingexpand

FULL TEXT LINKS

Proceed to details

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3

J Epidemiol Glob Health

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-
-

. 2024 Jun 13.

doi: 10.1007/s44197-024-00256-y. Online ahead of print.

Age-specific Multimorbidity Patterns and Burden on All-Cause Mortality and Public Direct Medical Expenditure: A Retrospective Cohort Study

Sabrina Nan Hong[#1], Francisco Tsz Tsun Lai[#2,3], Boyuan Wang[1], Edmond Pui Hang Choi[4], Ian Chi Kei Wong[2,3,5,6], Cindy Lo Kuen Lam[1,7], Eric Yuk Fai Wan[8,9]

Affiliations expand

- PMID: 38869775

- DOI: 10.1007/s44197-024-00256-y

Abstract

Objective: To evaluate age-specific multimorbidity patterns and morbidity burden on mortality and healthcare expenditure across age groups.

Patients and methods: Retrospective observational study between January 1, 2009 to December 31, 2017 using electronic health records in Hong Kong: Individuals were stratified by age (< 50, 50-64, 65-79, ≥ 80), and sub-classified by number of morbidities (0, 1, 2, 3, ≥ 4) out of 21 common chronic conditions. Clustering analyses were conducted to identify specific patterns of multimorbidity. Association between the number as well as combinations of morbidities and all-cause mortality and public expenditure was examined.

Results: 4,562,832 individuals with a median follow-up of 7 years were included. Mental disorders were the top morbidities among young individuals, while cardiovascular diseases were prevalent in the elderly. An increased number of morbidities was associated with a greater relative risk for mortality and medical expenditure, and this relationship was stronger among younger patients. Compared to individuals in the same age group without morbidity, the hazard ratios (HR; 95% CI) of all-cause mortality in patients aged < 50 and ≥ 80 with two comorbidities 3.81 (3.60-4.03) and 1.38 (1.36-1.40), respectively, which increased to 14.22 (9.87-20.47) and 2.20 (2.13-2.26), respectively, as the number of morbidities increased to ≥ 4. The stroke-hypertension cluster was shown to be associated with the highest HR of mortality 2.48 (2.43-2.53) among all identified clusters arising from the clustering analysis.

Conclusion: Given the stronger association between multimorbidity and all-cause mortality and greater opportunity costs in younger populations, prevention and management of early-onset multimorbidity are warranted. (248 words).

Keywords: All-cause mortality; Healthcare expenditure; Multimorbidity; Observational study.

- 58 references

Proceed to details

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. 2024 Jun 12.

doi: 10.1038/s41371-024-00923-4. Online ahead of print.

Transition between cardiometabolic conditions and body weight among women: which paths increase the risk of diabetes and cardiovascular diseases?

Mohammad R Baneshi[1], Annette Dobson[2], Gita D Mishra[2]

Affiliations expand

- PMID: 38866978

- DOI: 10.1038/s41371-024-00923-4

Abstract

Previous studies investigated the association of body weight and hypertension with risk of incident cardiometabolic multimorbidity. Our aim was to estimate the risk of diabetes and cardiovascular disease later in life for subjects with different progression patterns of overweight, obesity, and hypertension in mid-life. This was a prospective cohort study in which data from 12,784 participants in the Australian Longitudinal Study on Women's Health were used. Multistate model was used to study the progression pattern of overweight, obesity, hypertension, diabetes, and cardiovascular disease over the life course. The cumulative incidence of diabetes and cardiovascular disease up to the age of 73 was estimated for women with different patterns of other conditions. The six most common paths and corresponding cumulative incidences for diabetes were overweight 5.1%, obesity 11.5%, hypertension 6.9%, progression from overweight to obesity 8.2%, overweight and hypertension 12.1%, and obesity and hypertension 36.8%. For women with diabetes and other conditions, the cumulative incidence of cardiovascular disease (heart disease or stroke) as the next immediate condition was 22.4%. The corresponding figure for women who only had a report of diabetes but did not have high body weight or hypertension was 8.3%. The higher risk of transition from healthy state to a cardiometabolic condition was associated with low education, income stress, smoking, not

drinking alcohol (compared to low drinkers), physical inactivity, and high perceived stress. Women with obesity and hypertension in middle-age had a substantially higher risk of developing diabetes and cardiovascular disease than women without these potentially preventable conditions.

- 34 references

SUPPLEMENTARY INFO

Grants and fundingexpand

Proceed to details

Cite

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5

J Affect Disord

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-
-

. 2024 Jun 9:361:104-112.

doi: 10.1016/j.jad.2024.06.021. Online ahead of print.

Associations between frailty, depression and risk of hospitalisation for infection: A large prospective cohort study

Dan Qiu[1], Jun He[2], ChengCheng Zhang[3], Yilu Li[4], Zhen Ling[5], Minxue Shen[6], Shuiyuan Xiao[7]

Affiliations expand

- PMID: 38857629

- DOI: 10.1016/j.jad.2024.06.021

Abstract

Background: There is a considerable lack of epidemiological evidence on whether frailty, and frailty comorbid depression could increase the risk of infections in older adults. This study aimed to examine the prospective association between frailty, depression, and risk of infections.

Methods: A total of 308,892 eligible participants were included. Linked hospital admission records (HES) were used to identify a primary or secondary diagnosis of depression, and infection. Frailty was assessed by Fried frailty phenotype indicators. Cox proportional hazard model was conducted to examine the associated risk between frailty, depression, comorbid frailty and depression and risk of incident infections. Results were stratified by age and gender.

Results: During the follow-up, 74,749 (24.19 %) incident any infection cases were identified, the incidence density of any infection was 17.29/1000 person years. Frailty alone (HR = 1.38, 95 % CI: 1.33-1.43), depression alone (HR = 1.90, 95 % CI: 1.86-1.94), and comorbid frailty and depression (HR = 1.91, 95 % CI: 1.82-1.99) were associated with greater risks of any infections relative to participants with neither frailty nor depression. The associations between frailty alone, depression alone, comorbid frailty and depression, and any infections/most infection subtypes were significant for all age strata in both male and female.

Limitations: Frailty phenotype was assessed through the adapted Fried criteria, based on a mix of self-reported and objective measurements.

Conclusion: Frailty, depression, and comorbid frailty and depression were significantly associated with increased risk of incident infections.

Keywords: Depression; Frailty; Infection; Infectious disease; Multimorbidity; UKB cohort.

Conflict of interest statement

Declaration of competing interest The authors declare that they have no competing interests.

6

Drugs Real World Outcomes

.
. 2024 Jun 9.

doi: 10.1007/s40801-024-00432-3. Online ahead of print.

Association of Drug–Disease Interactions with Mortality or Readmission in Hospitalised Middle-Aged and Older Adults: A Systematic Review and Meta-Analysis

Joshua M Inglis[1,2], Gillian Caughey[3], Tilenka Thynne[4], Kate Brotherton[4], Danny Liew[5,6], Arduino A Mangoni[4], Sepehr Shakib[5,7]

Affiliations expand

- PMID: 38852118

- DOI: 10.1007/s40801-024-00432-3

Abstract

Background and objective: Multimorbidity is common in hospitalised adults who are at increased risk of inappropriate prescribing including drug-disease interactions. These interactions occur when a medicine being used to treat one condition exacerbates a concurrent medical condition and may lead to adverse health outcomes. The aim of this review was to examine the association between drug-disease interactions and the risk of mortality and readmission in hospitalised middle-aged and older adults.

Methods: A systematic review was conducted on drug-disease interactions in hospitalised middle-aged (45-64 years) and older adults (≥65 years). The study protocol was prospectively registered with PROSPERO (Registration Number: CRD42022341998). Drug-

disease interactions were defined as a medicine being used to treat one condition with the potential to exacerbate a concurrent medical condition or that were inappropriate based on a comorbid medical condition. Both observational and interventional studies were included. The outcomes of interest were mortality and readmissions. The databases searched included MEDLINE, CINAHL, EMBASE, Web of Science, SCOPUS and the Cochrane Library from inception to 12 July, 2022. A meta-analysis was performed to pool risk estimates using the random-effects model.

Results: A total of 563 studies were identified and four met the inclusion criteria. All were observational studies in older adults, with no studies identified in middle-aged adults. Most of the studies were at risk of bias because of an inadequate adjustment for covariates and a lack of clarity around individuals lost to follow-up. There were various definitions of drug-disease interactions within these four studies. Two studies assessed drugs that were contraindicated based on renal function, one assessed an individual drug-disease combination, and one was based on the clinical judgement of a pharmacist. There were two studies that showed an association between drug-disease interactions and the outcomes of interest. One reported that the use of diltiazem in patients with heart failure was associated with an increased risk of readmissions. The second reported that the use of medicines contraindicated according to renal function were associated with increased risk of all-cause mortality and a composite of mortality and readmission. Three of the studies (total study population = 5705) were amenable to a meta-analysis, which showed no significant association between drug-disease interactions and readmissions (odds ratio = 1.0, 95% confidence interval 0.80-1.38).

Conclusions: Few studies were identified examining the risk of drug-disease interactions and mortality and readmission in hospitalised adults. Most of the identified studies were at risk of bias. There is no universal accepted definition of drug-disease interactions in the literature. Further studies are needed to develop a standardised and accepted definition of these interactions to guide further research in this area.

- 67 references

SUPPLEMENTARY INFO

Publication typesexpand

FULL TEXT LINKS

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

1
JAMA

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. 2024 Jun 14.

doi: 10.1001/jama.2024.10342. Online ahead of print.

Early Therapy for Symptomatic COPD, Asthma Improved Quality of Life

Emily Harris

- PMID: 38874938

- DOI: 10.1001/jama.2024.10342

No abstract available
Proceed to details

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2

Am J Hypertens

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. 2024 Jun 14;37(7):493-502.

doi: 10.1093/ajh/hpae040.

Trends in the Prevalence of Multiple Chronic Conditions Among US Adults

With Hypertension From 1999-2000 Through 2017-2020

Chibuike J Alanaeme[1], Lama Ghazi[1], Oluwasegun P Akinyelure[1], Ying Wen[1], Ashley Christenson[1], Bharat Poudel[1], Erin E Dooley[1], Ligong Chen[1], Shakia T Hardy[2], Kathryn Foti[1], C Barrett Bowling[3,4], Michelle T Long[5], Lisandro D Colantonio[1], Paul Muntner[1]

Affiliations expand

- PMID: 38576398

- DOI: 10.1093/ajh/hpae040

Abstract

Background: The prevalence of many chronic conditions has increased among US adults. Many adults with hypertension have other chronic conditions.

Methods: We estimated changes in the age-adjusted prevalence of multiple (≥3) chronic conditions, not including hypertension, using data from the National Health and Nutrition Examination Survey, from 1999-2000 to 2017-2020, among US adults with (n = 24,851) and without (n = 24,337 hypertension. Hypertension included systolic blood pressure (BP) ≥130 mm Hg, diastolic BP ≥80 mm Hg, or antihypertensive medication use. We studied 14 chronic conditions: arthritis, asthma, cancer, coronary heart disease, chronic kidney disease, depression, diabetes, dyslipidemia, hepatitis B, hepatitis C, heart failure, lung disease, obesity, and stroke.

Results: From 1999-2000 to 2017-2020, the age-adjusted mean number of chronic conditions increased more among US adults with vs. without hypertension (2.2 to 2.8 vs. 1.7 to 2.0; P-interaction <0.001). Also, the age-adjusted prevalence of multiple chronic conditions increased from 39.0% to 52.0% among US adults with hypertension and from 26.0% to 30.0% among US adults without hypertension (P-interaction = 0.022). In 2017-2020, after age, gender, and race/ethnicity adjustment, US adults with hypertension were 1.94 (95% confidence interval: 1.72-2.18) times as likely to have multiple chronic conditions compared to those without hypertension. In 2017-2020, dyslipidemia, obesity, and arthritis were the most common 3 co-occurring chronic conditions among US adults with and without hypertension (age-adjusted prevalence 16.5% and 3.1%, respectively).

Conclusions: In 2017-2020, more than half of US adults with hypertension had ≥3 additional chronic conditions, a substantial increase from 20 years ago.

Keywords: NHANES; blood pressure; chronic conditions; epidemiology; hypertension; multimorbidity.

Comment in

- The Rising Prevalence of Multiple Chronic Conditions Among US Adults With Hypertension.
  Casey DE Jr, Oglesby B, Pohlman D.Am J Hypertens. 2024 Jun 14;37(7):449-451. doi: 10.1093/ajh/hpae045.PMID: 38635289 No abstract available.

3

Randomized Controlled Trial

N Engl J Med

. 2024 Jun 13;390(22):2061-2073.

doi: 10.1056/NEJMoa2401389. Epub 2024 May 19.

Early Diagnosis and Treatment of COPD and Asthma – A Randomized, Controlled Trial

Shawn D Aaron[1], Katherine L Vandemheen[1], G Alex Whitmore[1], Celine Bergeron[1], Louis-Philippe Boulet[1], Andréanne Côté[1], R Andrew McIvor[1], Erika Penz[1], Stephen K Field[1], Catherine Lemière[1], Irvin Mayers[1], Mohit Bhutani[1], Tanweer Azher[1], M Diane Lougheed[1], Samir Gupta[1], Nicole Ezer[1], Christopher J Licskai[1], Paul Hernandez[1], Martha Ainslie[1], Gonzalo G Alvarez[1], Sunita Mulpuru[1]; UCAP Investigators

Collaborators, Affiliations expand

- PMID: 38767248

- DOI: 10.1056/NEJMoa2401389

Abstract

Background: Many persons with chronic obstructive pulmonary disease (COPD) or asthma have not received a diagnosis, so their respiratory symptoms remain largely untreated.

Methods: We used a case-finding method to identify adults in the community with respiratory symptoms without diagnosed lung disease. Participants who were found to have undiagnosed COPD or asthma on spirometry were enrolled in a multicenter, randomized, controlled trial to determine whether early diagnosis and treatment reduces health care utilization for respiratory illness and improves health outcomes. Participants were assigned to receive the intervention (evaluation by a pulmonologist and an asthma-COPD educator who were instructed to initiate guideline-based care) or usual care by their primary care practitioner. The primary outcome was the annualized rate of participant-initiated health care utilization for respiratory illness. Secondary outcomes included changes from baseline to 1 year in disease-specific quality of life, as assessed with the St. George Respiratory Questionnaire (SGRQ; scores range from 0 to 100, with lower scores indicating better health status); symptom burden, as assessed with the COPD Assessment Test (CAT; scores range from 0 to 40, with lower scores indicating better health status); and forced expiratory volume in 1 second (FEV_1).

Results: Of 38,353 persons interviewed, 595 were found to have undiagnosed COPD or asthma and 508 underwent randomization: 253 were assigned to the intervention group and 255 to the usual-care group. The annualized rate of a primary-outcome event was lower in the intervention group than in the usual-care group (0.53 vs. 1.12 events per person-year; incidence rate ratio, 0.48; 95% confidence interval [CI], 0.36 to 0.63; $P<0.001$).

At 12 months, the SGRQ score was lower than the baseline score by 10.2 points in the intervention group and by 6.8 points in the usual-care group (difference, -3.5 points; 95% CI, -6.0 to -0.9), and the CAT score was lower than the baseline score by 3.8 points and 2.6 points, respectively (difference, -1.3 points; 95% CI, -2.4 to -0.1). The FEV_1 increased by 119 ml in the intervention group and by 22 ml in the usual-care group (difference, 94 ml; 95% CI, 50 to 138). The incidence of adverse events was similar in the trial groups.

Conclusions: In this trial in which a strategy was used to identify adults in the community with undiagnosed asthma or COPD, those who received pulmonologist-directed treatment had less subsequent health care utilization for respiratory illness than those who received usual care. (Funded by Canadian Institutes of Health Research; UCAP ClinicalTrials.gov number, NCT03148210.).

4

Clin Exp Allergy

. 2024 Jun 12.

doi: 10.1111/cea.14521. Online ahead of print.

Inhaled Corticosteroids Versus Placebo for Stable Chronic Obstructive Pulmonary Disease: A Review

Erin Kamalanathan[1], Sargam Sharma[1]

Affiliations expand

- PMID: 38866712

- DOI: 10.1111/cea.14521

Abstract

This is an abstract of a Cochrane review 'Inhaled corticosteroids versus placebo for stable chronic obstructive pulmonary disease' published in Cochrane Database of Systematic Reviews 2023 Issue 3 10.1002/14651858.cd002991.pub4. Accessed 9 May 2024 (see www.cochranelibrary.com for information). Cochrane reviews are regularly updated as new evidence emerges and in response to feedback, and the Cochrane Library should be consulted for the more recent version of the review.

Keywords: asthma; basic mechanisms; education; pharmacology and pharmacogenomics; quality-of-life.

- 7 references

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Review

Expert Opin Pharmacother

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. 2024 Jun 12.

doi: 10.1080/14656566.2024.2366991. Online ahead of print.

Asthma management with triple ICS/LABA/LAMA combination to reduce the risk of exacerbation: an umbrella review compliant with the PRIOR statement

Rossella Laitano[1], Luigino Calzetta[2], Matteo Matino[1], Elena Pistocchini[1], Paola Rogliani[1]

Affiliations expand

- PMID: 38864834

- DOI: 10.1080/14656566.2024.2366991

Abstract

Introduction: According to Global Initiative for Asthma (GINA) guidelines, long-acting muscarinic antagonists (LAMAs) should be considered as add-on therapy in patients with asthma that remains uncontrolled despite treatment with medium-dose (MD) or high-dose (HD) inhaled corticosteroids (ICS)/long-acting β_2-agonist (LABA) combinations. In patients ≥18 years, LAMA may be added in triple combination with an ICS and a LABA. To date, the precise efficacy of triple ICS/LABA/LAMA combination remains uncertain concerning the impact on exacerbation risk in patients with uncontrolled asthma. Therefore, an umbrella review was performed to systematically summarize available data on the effect of triple ICS/LABA/LAMA combination on the risk of asthma exacerbation.

Methods: An umbrella review has been performed according to the PRIOR statement.

Results: The overall results obtained from 5 systematic reviews and meta-analyses suggest that triple ICS/LABA/LAMA combination reduce the risk of asthma exacerbation. HD-ICS showed a greater effect particularly in reducing severe asthma exacerbation, especially in patients with evidence of type 2 inflammation biomarkers.

Conclusions: The findings of this umbrella review suggest an optimization of ICS dose in triple ICS/LABA/LAMA combination, based on the severity of exacerbation and type 2 biomarkers expression.

Keywords: Asthma; exacerbation; triple combination; umbrella review.

SUPPLEMENTARY INFO

Publication typesexpand

Proceed to details

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6

Allergy

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. 2024 Jun 12.

doi: 10.1111/all.16186. Online ahead of print.

German asthma net: Nasal polyposis in patients in the severe asthma registry

Christina Bal[1], Slagjana Stoshikj[1], Katrin Milger[2], Dirk Skowasch[3], Monika Gappa[4], Cordula Koerner-Rettberg[5], Margret Jandl[6], Olaf Schmidt[7], Rainer Ehmann[8], Christian Taube[9], Eckard Hamelmann[10], Roland Buhl[11], Stephanie Korn[12], Marco Idzko[1]

Affiliations expand

- PMID: 38864229

- DOI: 10.1111/all.16186

No abstract available

- 9 references

SUPPLEMENTARY INFO

Grants and fundingexpand

Proceed to details

Cite

7

BMJ Open Respir Res

. 2024 Jun 11;11(1):e002130.

doi: 10.1136/bmjresp-2023-002130.

Herpes zoster burden in patients with asthma: real-world incidence, healthcare resource utilisation and cost

David Singer[1], Philippe Thompson-Leduc[2], Siyu Ma[3], Deepshekhar Gupta[4], Wendy Y Cheng[5], Aruna Muthukumar[4], Francesca Devine[6], Manasvi Sundar[7], Michael Bogart[8,9], Ella Hagopian[5], Sara Poston[10], Mei Sheng Duh[5], John J Oppenheimer[11]

Affiliations expand

- PMID: 38862238

- PMCID: PMC11168123

- DOI: 10.1136/bmjresp-2023-002130

Abstract

Background: Herpes zoster (HZ) is a painful condition caused by reactivation of the varicella-zoster virus. The objectives of this study were to compare HZ incidence in adults with asthma versus adults without asthma and to compare healthcare resource use as well as direct costs in adults with HZ and asthma versus adults with asthma alone in the USA.

Methods: This retrospective longitudinal cohort study included adults aged ≥18 years across the USA. Patients were identified from Optum's deidentified Clinformatics Data Mart Database, an administrative claims database, between 1 October 2015 and 28 February 2020, including commercially insured and Medicare Advantage with part D beneficiaries.

Cohorts of patients with and without asthma, and separate cohorts of patients with asthma and HZ and with asthma but not HZ, were identified using International Classification of Diseases 10th Revision, Clinical Modification codes. HZ incidence, healthcare resource use and costs were compared, adjusting for baseline characteristics, between the relevant cohorts using generalised linear models.

Results: HZ incidence was higher in patients with asthma (11.59 per 1000 person-years) than patients without asthma (7.16 per 1000 person-years). The adjusted incidence rate ratio (aIRR) for HZ in patients with asthma, compared with patients without asthma, was 1.34 (95% CI 1.32 to 1.37). Over 12 months of follow-up, patients with asthma and HZ had more inpatient stays (aIRR 1.11; 95% CI 1.02 to 1.21), emergency department visits (aIRR 1.26; 95% CI 1.18 to 1.34) and outpatient visits (aIRR 1.19; 95% CI 1.16 to 1.22), and direct healthcare costs that were US dollars ($) 3058 (95% CI $1671 to $4492) higher than patients with asthma without HZ.

Conclusion: Patients with asthma had a higher incidence of HZ than those without asthma, and among patients with asthma HZ added to their healthcare resource use and costs.

Keywords: Asthma; Asthma Epidemiology; Health Economist; Viral infection.

Conflict of interest statement

Competing interests: DS and SP are employed by and hold shares in GSK. PT-L, DG, WYC, AM, FD, MS, EH and MSD are/were employees of Analysis Group, Inc., a consulting firm that received funding from GSK for the conduct of this study. SM declares a postdoctoral fellowship grant from GSK for the conduct of this study. MB was employed by and held shares in GSK at the time of the study. JO received consulting fees for adjudication committees, data and safety monitoring boards or study design from GSK, AstraZeneca, Amgen, Sanofi, and Regeneron, Aquestive Therapeutics, and Aimmune; is a member of the advocacy council of the American Board of Internal Medicine and a member of the American Board of Allergy and Immunology; is a reviewer for UpToDate; and was Executive-Editor of Annals of Allergy, Asthma & Immunology.

- 37 references
- 1 figure

SUPPLEMENTARY INFO

MeSH termsexpand

FULL TEXT LINKS

8

Am J Respir Crit Care Med

. 2024 Jun 11.

doi: 10.1164/rccm.202405-0894ED. Online ahead of print.

Remission in the World of Severe Asthma

Ian D Pavord[1]

Affiliations expand

- PMID: 38861332

- DOI: 10.1164/rccm.202405-0894ED

No abstract available

Keywords: Remission, severe asthma.

9

Expert Rev Respir Med

.
. 2024 Jun 11:1-5.

doi: 10.1080/17476348.2024.2365841. Online ahead of print.

Type-2 severe asthma comorbidities in the era of biologics: time to rethink clinical response?

Andrea Portacci[1], Silvano Dragonieri[1], Giovanna Elisiana Carpagnano[1]

Affiliations expand

- PMID: 38845590

- DOI: 10.1080/17476348.2024.2365841

Abstract

Introduction: The use of monoclonal antibodies in patients with severe asthma has led clinicians to explore new levels of clinical improvement, as testified by the growing interest on clinical remission achievement. In this context, a major role is played by asthma-related comorbidities, which can influence asthma pathophysiology and treatment response.

Areas covered: In this special report, we highlighted how asthma-related comorbidities could deeply affect monoclonal antibody response as well as clinical remission achievement. As examples, we provided data from clinical trials and real-life experiences involving patients with severe asthma and chronic rhinosinusitis with nasal polyps (CRSwNP), eosinophilic granulomatosis with polyangiitis (EGPA) or bronchiectasis.

Expert opinion: Comorbidities associated with severe asthma development should be carefully assessed in everyday clinical practice, even with the help of new diagnostic technologies, artificial intelligence and multidisciplinary teams. Future studies should address the role of comorbidities in remission achievement, describing how these diseases could generate new trajectories of clinical and functional response in patient treated with monoclonal antibodies.

Keywords: Asthma; CRSwNP; EGPA; biologic; bronchiectasis; comorbidities; remission.

10

Editorial

J Allergy Clin Immunol

. 2024 Jun 10:S0091-6749(24)00603-1.

doi: 10.1016/j.jaci.2024.06.004. Online ahead of print.

Asthma–COPD coexistence

Peter J Barnes[1]

Affiliations expand

- PMID: 38866207

- DOI: 10.1016/j.jaci.2024.06.004

No abstract available

Keywords: ACOS; Asthma; COPD; asthma-COPD overlap; eosinophilic COPD; neutrophilic asthma.

11

J Allergy Clin Immunol Pract

. 2024 Jun 10:S2213-2198(24)00625-1.

doi: 10.1016/j.jaip.2024.05.052. Online ahead of print.

Real-world data on tezepelumab in patients with severe asthma in Germany

Leonie Biener[1], Carlo Mümmler[2], Christopher Alexander Hinze[3], Hendrik Suhling[3], Stephanie Korn[4], Christoph Fisser[5], Arne Biener[6], Carmen Pizarro[6], Alexandra Lenoir[2], Caroline Hackl[2], Dirk Skowasch[6], Katrin Milger[2]

Affiliations expand

- PMID: 38866104

- DOI: 10.1016/j.jaip.2024.05.052

Abstract

Background: Tezepelumab is a novel biologic blocking thymic stromal lymphopoetin (TSLP), approved for severe asthma irrespective of biomarker levels or phenotype.

Objective: To characterize a real-world tezepelumab patient cohort and the efficacy among various asthma phenotypes.

Methods: We performed a retrospective, multi-center study on patients with severe asthma initiating tezepelumab. Clinical response was evaluated at 3 and 6 months.

Results: We included 129 patients with an average age of 52.5 ± 13.1 years, 59.7% were female. The majority (86.0%) had increased T2 biomarkers, 68.2% an allergic and 31.8% an eosinophilic phenotype. 23.3% of patients were biologic-naïve. 22 (18.2%) patients discontinued tezepelumab therapy due to suspected side-effects or insufficient efficacy. At 6 months follow-up, median reduction in annualized exacerbation rate (AE) was -1 [-2.9;0.0], the reduction of oral corticosteroid (OCS) dose among patients with long term OCS therapy was -5 mg [-10;0] and asthma control test (ACT) improved by 2 [0;5] points. 80.8% demonstrated a treatment response according to Biologic Asthma Response Score. There were no significant differences in treatment response between T2-high vs. T2 low, early vs. adult onset and eosinophilic vs. non-eosinophilic asthma. Prior treatment with other biologics was associated with inferior treatment response.

Conclusion: In this real-life cohort, including a large proportion of patients with history of previous biologic use and encompassing various subgroups, the majority responded to tezepelumab. Our data further suggest a steroid-sparing effect of tezepelumab.

Keywords: Tezepelumab; antibody; biologic; real-world; severe asthma; switching.

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Respirology

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Treatable traits and exacerbation risk in patients with uncontrolled asthma prescribed GINA step 1–3 treatment: A nationwide asthma cohort study

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Affiliations expand

- PMID: 38859634

- DOI: 10.1111/resp.14774

Abstract

Background and objective: Uncontrolled asthma in patients treated for mild/moderate disease could be caused by non-pulmonary treatable traits (TTs) that affect asthma control negatively. We aimed to identify demographic characteristics, behavioural (smoking) and extrapulmonary (obesity, comorbidities) TTs and the risk for future exacerbations among patients with uncontrolled asthma prescribed step 1-3 treatment according to the Global Initiative for Asthma (GINA).

Methods: Twenty-eight thousand five hundred eighty-four asthma patients (≥18 y) with a registration in the Swedish National Airway Register between 2017 and 2019 were included (index-date). The database was linked to other national registers to obtain information on prescribed drugs 2-years pre-index and exacerbations 1-year post-index. Asthma treatment was classified into step 1-3 or 4-5, and uncontrolled asthma was defined based on symptom control, exacerbations and lung function.

Results: GINA step 1-3 included 17,318 patients, of which 9586 (55%) were uncontrolled (UCA 1-3). In adjusted analyses, UCA 1-3 was associated with female sex (OR 1.34, 95% CI 1.27-1.41), older age (1.00, 1.00-1.00), primary education (1.30, 1.20-1.40) and secondary education (1.19, 1.12-1.26), and TTs such as smoking (1.25, 1.15-1.36), obesity (1.23, 1.15-1.32), cardiovascular disease (1.12, 1.06-1.20) and depression/anxiety (1.13, 1.06-1.21). Furthermore, UCA 1-3 was associated with future exacerbations; oral corticosteroids (1.90, 1.74-2.09) and asthma hospitalization (2.55, 2.17-3.00), respectively, also when adjusted for treatment step 4-5.

Conclusion: Over 50% of patients treated for mild/moderate asthma had an uncontrolled disease. Assessing and managing of TTs such as smoking, obesity and comorbidities should be conducted in a holistic manner, as these patients have an increased risk for future exacerbations.

Keywords: asthma control; asthma treatment; comorbidities; exacerbations; treatable traits; uncontrolled asthma.

- 31 references

SUPPLEMENTARY INFO

Grants and fundingexpand

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J Med Chem

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. 2024 Jun 10.

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Discovery, Multiparametric Optimization, and Solid-State Driven Identification of CHF-6550, a Novel Soft Dual Pharmacology Muscarinic Antagonist and β_2 Agonist (MABA) for the Inhaled Treatment of Respiratory Diseases

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Affiliations expand

- PMID: 38857426

- DOI: 10.1021/acs.jmedchem.4c00298

Abstract

Clinical guidelines for COPD and asthma recommend inhaled β-adrenergic agonists, muscarinic antagonists, and, for frequent exacerbators, inhaled corticosteroids, with the challenge of combining them into a single device. The MABA (muscarinic antagonist and β_2 agonist) concept has the potential to simplify this complexity while increasing the efficacy of both pharmacologies. In this article, we report the outcome of our solid-state driven back-up program that led to the discovery of the MABA compound **CHF-6550**. A soft drug approach was applied, aiming at high plasma protein binding and high hepatic clearance, concurrently with an early stage assessment of crystallinity through a dedicated experimental workflow. A new chemotype was identified, the diphenyl hydroxyacetic esters, able to generate crystalline material. Among this class, **CHF-6550** demonstrated *in vivo* efficacy, suitability for dry powder inhaler development, favorable pharmacokinetics, and safety in preclinical settings and was selected as a back-up candidate, fulfilling the desired pharmacological and solid-state profile.

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

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Dtsch Med Wochenschr

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. 2024 Jul;149(13):745.

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[Rhinosinusitis and asthma: How the upper and lower respiratory tract are connected]

[Article in German]

Michael Dreher

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- DOI: 10.1055/a-2161-1911

No abstract available

Conflict of interest statement

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SUPPLEMENTARY INFO

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Review

Int Immunopharmacol

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. 2024 Jun 15:134:112236.

doi: 10.1016/j.intimp.2024.112236. Epub 2024 May 13.

Macrophages in CRSwNP: Do they deserve more attention?

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Affiliations expand

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- DOI: 10.1016/j.intimp.2024.112236

Abstract

Chronic rhinosinusitis (CRS) represents a heterogeneous disorder primarily characterized by the persistent inflammation of the nasal cavity and paranasal sinuses. The subtype known as chronic rhinosinusitis with nasal polyposis (CRSwNP) is distinguished by a significantly elevated recurrence rate and augmented challenges in the management of nasal polyps. The pathogenesis underlying this subtype remains incompletely understood. Macrophages play a crucial role in mediating the immune system's response to inflammatory stimuli. These cells exhibit remarkable plasticity and heterogeneity, differentiating into either the pro-inflammatory M1 phenotype or the anti-inflammatory and reparative M2 phenotype depending on the surrounding microenvironment. In CRSwNP, macrophages demonstrate reduced production of Interleukin 10 (IL-10), compromised phagocytic activity, and decreased autophagy. Dysregulation of pro-resolving mediators may occur during the inflammatory resolution process, which could potentially hinder the adequate functioning of anti-inflammatory macrophages in facilitating resolution. Collectively, these factors may contribute to the prolonged inflammation observed in CRSwNP. Additionally, macrophages may enhance fibrin cross-linking through the release of factor XIII-A (FAXIII), promoting fibrin deposition and plasma protein retention. Macrophages also modulate vascular permeability by releasing Vascular endothelial growth factor (VEGF). Moreover, they may disrupt the balance between Matrix Metalloproteinases (MMPs) and Tissue Inhibitors of Metalloproteinases (TIMPs), which favors extracellular matrix (ECM) degradation, edema formation, and pseudocyst development. Accumulating evidence suggests a close association between macrophage infiltration and CRSwNP; however, the precise mechanisms underlying this relationship warrant further investigation. In different subtypes of CRSwNP, different macrophage phenotypic aggregations trigger different types of inflammatory features. Increasing

evidence suggests that macrophage infiltration is closely associated with CRSwNP, but the mechanism and the relationship between macrophage typing and CRSwNP endophenotyping remain to be further explored. This review discusses the role of different types of macrophages in the pathogenesis of different types of CRSwNP and their contribution to polyp formation, in the hope that a better understanding of the role of macrophages in specific CRSwNP will contribute to a precise and individualized understanding of the disease.

Keywords: Chronic rhinosinusitis; FXIII-A; IL-10; Macrophages; SPM.

Environ Res

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Greenness and its composition and configuration in association with allergic rhinitis in preschool children

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Abstract

Background: Few studies focus on the associations of green space composition and configuration with children's allergic rhinitis (AR).

Methods: A multi-center population-based cross-sectional study was performed in 7 cities in mainland of China between 2019 and 2020, recruiting 36,867 preschool children. Information on the current AR symptoms and demographics were collected by questionnaire. Exposure to residential greenness was estimated by Normalized Difference Vegetation Index (NDVI, 1000 m buffer) around the residences. Greenness composition was estimated in 3 main categories: forest, grassland, shrubland. Configuration of each category and total greenness (a spatial resolution of 10 m × 10 m) was estimated by 6 landscape pattern metrics to quantify their area, shape complexity, aggregation, connectivity, and patch density. Exposure to daily ambient particulate matter (PM_1, $PM_{2.5}$ and PM_{10}, a spatial resolution of 1 km × 1 km) was estimated. Multilevel logistic regression models were applied to analyze the associations of greenness and its composition and configuration with AR, and mediation effects by PMs were examined by mediation analysis models.

Results: The prevalence of self-reported current AR in preschool children was 33.1%. Two indicators of forest, Aggregation Index of forest patches (AIforest) (odds ratio (OR):0.92, 95% Confidential Interval (CI): 0.88-0.97), and Patch Cohesion of forest (COHESIONforest) (OR: 0.93, 95% CI:0.89-0.98) showed significantly negative associations with AR symptoms. Mediation analyses found the associations were partially mediated by PMs. Age, exclusive breastfeed duration and season were the potential effect modifiers. The associations varied across seven cities.

Conclusion: Our findings suggest the inverse associations of the aggregation and connectivity of forest patches surrounding residence addresses with AR symptoms. Since the cross-sectional study only provides associations rather than causation, further studies are needed to confirm our results as well as the underlying mechanisms.

Keywords: Air pollution; Allergic rhinitis; Composition and configuration; Green space; Mediation analyses.

Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:Zhuohui zhao reports financial support was provided by the Shanghai 3-year Public Health Action Plan [grant numbers GWVI-11.2-XD11]. Zhuohui zhao reports financial support was provided by Shanghai International Science and Technology Partnership Project (No. 21230780200). Zhuohui zhao reports financial support was provided by Shanghai B&R Joint Laboratory Project [grant numbers No.22230750300].

chronic cough

Lung

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Burden of Disease Associated with Refractory and Unexplained Chronic Cough in Canada: Results from a National Survey

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Affiliations expand

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- DOI: 10.1007/s00408-024-00714-1

Abstract

Introduction: Chronic cough (persisting for ≥ 8 weeks) is a common disorder that includes refractory chronic cough (RCC; cough that persists despite treatment of underlying disease) and unexplained chronic cough (UCC; cough with no identifiable cause). We evaluated self-reported health-related quality of life (HR-QoL) and work/activity impairment associated with RCC/UCC in Canada.

Methods: Our exploratory study included Canadians in the Leger Opinion Panel with RCC or UCC. Key entry criteria were ≥ 18 years of age, cough for ≥ 8 weeks, not currently smoking/quit ≥ 1 year ago, no serious respiratory disease or lung cancer, and not taking angiotensin-converting enzyme inhibitors. Respondents completed a 30-min online survey with general and cough-specific HR-QoL questionnaires, including the EuroQol (EQ) visual analogue scale (VAS), EQ-5-dimension 5-level (EQ-5D-5L), cough severity VAS, Leicester Cough Questionnaire (LCQ), and Work Productivity and Activity Impairment-Specific Health Problem (WPAI-SPH).

Results: Of 49,076 individuals who completed the chronic cough screening questionnaire (July 30-September 1, 2021), 1,620 (3.3%) met entry criteria for RCC/UCC and 1,046 (2.1%) completed the survey. The mean age of respondents was 45 years and 61% were female. Respondents reported impairments in global HR-QoL (EQ-VAS 73.8, 61% with anxiety/depression on the EQ-5D-5L) and cough-specific HR-QoL (mean cough severity VAS score 29.7, LCQ index 15.2). Work and non-work activities were reduced by 34% and 30%, respectively, on the WPAI-SPH.

Conclusion: RCC/UCC is prevalent in Canada and associated with impaired HR-QoL, particularly in mental health domains. Additional support and management options may be required to fully address this burden.

Keywords: Canada; Chronic cough; Heath-related quality of life; Patient burden; Refractory chronic cough; Unexplained chronic cough.

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