COPD exacerbations: the impact of long versus short courses of oral corticosteroids on mortality and pneumonia: nationwide data on 67,000 patients with COPD followed for 12 months


Patients with Chronic Obstructive Pulmonary Disease (COPD) are at greater risk of developing pneumonia due to impairment of lung defence mechanisms and use of inhaled corticosteroids. Higher rates of intensive care admission, longer hospital stays and increased mortality rates are also seen in patients hospitalised with COPD and pneumonia than in patients with pneumonia only.

Recommended treatment duration with oral corticosteroids (OCS) has dropped from 10-14 days in 2001 to 5-7 days currently (Global Initiative for Chronic Obstructive Lung Disease). While OCS have been reported to shorten the length of hospital stays, improve lung function and reduce the risk of early relapse and treatment failure in patients with non-pneumonia exacerbations, they are also associated with a number of adverse side-effects, including hyperglycaemia, fluid retention, weight gain, hypertension, diabetes mellitus, adrenal suppression, deep vein thrombosis, osteoporosis and increased fracture risk. However, the risk of severe infections and death following the use of OCS is unknown.

These study authors conducted a nationwide, observational cohort study to determine the association between duration of OCS treatment in outpatients with acute exacerbations of COPD and the risk of pneumonia hospitalisation and all-cause mortality during a one-year study period, and to explore how the timing of the exposure affects risk estimates.

Study participants (10,152) were drawn from the Danish Register of Chronic Obstructive Pulmonary Disease, had received a diagnosis between 1 January 2010 and 31 October 2017, and had received prednisolone prescriptions for the treatment of exacerbations. They were set in two groups: those on a short course of OCS (prednisolone below or equal to 250mg; n=6,002) and those on a long course (prescriptions above 250mg; n=4,150).

Long courses were associated with increased one-year risk of pneumonia hospitalisation or all-cause mortality, pneumonia hospitalisation and all-cause as compared with the short course of OCS treatment. Future studies could focus on testing the results reported in this paper and investigating the possible causes of the increased all-cause mortality often associated with long courses of OCS.

Systematic review of clinical prediction models to support the diagnosis of asthma in primary care

Daines L, McLean S, Buelo A, et al. npj Primary Care Med 2019;29 https://doi.org/10.1038/s41533-019-0132-z

Asthma is commonly misdiagnosed, with overdiagnosis leading to potentially harmful treatment and unnecessary healthcare cost, and underdiagnosis risking avoidable morbidity and mortality.

Asthma is a clinical diagnosis, with no definitive reference standard that can confirm or refute the diagnosis. Conflicting recommendations in national and international guidelines are evidence of the uncertainty about the best combinations of clinical features and tests for asthma diagnosis.

Clinical prediction models help healthcare professionals to assess the probability of a diagnosis and enhance shared decision making. Daines and colleagues set out to identify, compare and synthesise existing clinical prediction modules that could support the diagnosis of asthma in children and adults in the primary care setting. They searched Medline, Embase, CINAHL, TRIP and US National Guidelines Clearinghouse databases from 1 January 1990 to 23 November 2017. They screened titles, abstracts and full texts for eligibility, extracted data and assessed risk of bias. From 13,798 records, they reviewed 53 full-text articles. Seven clinical prediction models to support the diagnosis of asthma in primary care were identified.

This review highlighted the paucity of current criteria to inform diagnostic algorithms. All seven of the selected studies were at high risk of bias and could not be recommended for diagnosing asthma in routine clinical practice. Wheeze, allergy, allergic rhinitis, symptom variability and exercise-induced symptoms were associated with asthma and could be considered as predictors in future prediction models. Cough, respiratory tract infections and nocturnal respiratory symptoms were consistently associated with asthma.

In the future, establishing a data-driven approach to asthma diagnosis could resolve current discrepancies in guidelines and enable the unacceptable level of asthma misdiagnosis to be reduced.

COPD patients’ experiences, self-reported needs, and needs-driven strategies to cope with self-management


Chronic Obstructive Pulmonary Disease (COPD) is characterised by a gradual decline in health and progressive organ failure, with acute exacerbations and decreased chances of survival. In addition to struggling with multiple medications and multimorbidity, a patient with COPD will experience uncertainty, chaos, fluctuations in health and repeated setbacks. It is reasonable to assume that the therapeutic needs of patients with COPD will not be met by therapy alone, but rather by continuous and flexible interdisciplinary treatment.

Self-management refers to an individual’s active management of a chronic illness in collaboration with their family members and clinicians, and involves education, physical
effectiveness of school-based self-management interventions for asthma among children and adolescents: findings from a Cochrane systematic review and meta-analysis

Kneale D, Harris K, McDonald V, et al. Thorax 2019;01:1-7
https://doi.org/10.1136/thoraxjnl-2018-211909

In England, one in six children between the ages of five and 14 will have experienced asthma at some point, with an estimated 2.8 million school days lost in the UK each year.

It is known that well-controlled asthma is defined by reduced daytime and night-time symptoms and diminished risk of life-threatening asthma attacks. Self-management is a cornerstone of treatment for people with asthma and involves educating and enabling individuals to achieve good control of their asthma symptoms and prevention of future exacerbations.

The impact of providing self-management education and support within schools is unclear, and the aim of this systematic review was to identify and synthesise evidence on school-based interventions for children with asthma, with a focus on effectiveness. There were two key objectives: to identify the key design features and processes associated with successful implementation of school-based asthma self-management interventions; and to understand whether school-based interventions can effectively change asthma self-management behaviour.

Intervention studies were eligible for inclusion in the systematic review if they employed a randomised parallel-group design and were published in English from 1995 onwards. Participants included children aged five to 18 years, who participated within their own school environment. Searches were conducted on the Cochrane Airways Group Specialised Register. The titles and abstracts of 379 outcome evaluation studies were independently screened by two review authors and, following exclusion on title and abstract, 105 full-text records were assessed for eligibility, and 33 outcome evaluation studies were included for further analysis.

School-based interventions were effective in reducing the frequency of emergency department visits and moderately effective in reducing levels of hospitalisations. A meta-analysis of three studies suggest that the approach could reduce the number of days of restricted activity. There is uncertainty as to whether school-based self-management interventions reduce absences from school.

School-based self-management interventions are effective in improving outcomes for children with asthma.

CRP-guided antibiotic treatment in acute exacerbations of COPD admitted to hospital

https://doi.org/10.1183/13993003.02014-2018

A patient with Chronic Obstructive Pulmonary Disease (COPD) will experience an average of 1.5 exacerbations a year, and coinfecution of viruses and bacteria is detected in 25% of exacerbations. Although molecular techniques can detect viral infections as triggers of an acute exacerbation, no infectious agents can be detected in around one-third of instances.

Current recommendations from the Global Initiative for Chronic Obstructive Lung Disease (GOLD) state that antibiotic treatment should be based on patient-reported sputum purulence, the (controversial) assumptions being that patients’ assessment of sputum colour is reliable and that purulence is a good marker of bacterial infection. As a consequence, implementation of GOLD strategy results in overuse of antibiotics, with resulting higher medical costs, side-effects and growth in antimicrobial resistance.

A 30% reduction in resistance can be achieved by implementing recommendations that discourage antibiotic treatment, for which a better marker of patients who would benefit is essential. Serum C-Reactive Protein (CRP) is such an acute-phase protein and marker for systemic inflammation, whose levels are significantly higher during an acute exacerbation of COPD compared with baseline levels. As previous reports have indicated that patients with an acute exacerbation admitted to hospital with a CRP ≥50mg/L showed a trend to benefit more from antibiotics than patients with low CRP, Prins and colleagues set out to test the hypothesis that CRP-guided antibiotic therapy may lead to a reduction of antibiotic therapy within 24 hours of admission, compared with a strategy of patient-reported sputum purulence, in patients with an acute exacerbation admitted to hospital, without increasing the rate of treatment failures or adverse events within 30 days.

The multicentre randomised controlled open intervention clinical trial was performed in two hospitals in the Netherlands between July 2011 and February 2015. Eligible patients were randomly assigned to receive either CRP-directed antibiotic
therapy or GOLD-directed antibiotic therapy. The primary endpoint was antibiotic treatment started during the first 24 hours after admission, and secondary endpoints included 30-day treatment failure rate, length of hospital stay, time to next exacerbation, difference in symptoms score, quality of life after 30 days and safety profile.

CRP-guided antibiotic therapy for patients hospitalised with acute exacerbations of COPD resulted in a 14.5% decrease of antibiotic use at admission compared with GOLD-guided antibiotic therapy. It was not associated with either an increase in adverse events or 30-day treatment failure rates. Similar outcomes between groups were observed with regard to exacerbation recovery and time to next exacerbation.

Cluster-randomised trial of a nurse-led advance care planning session in patients with COPD and their loved ones

Thorax 2019;74:328–36
https://doi.org/10.1136/thoraxjnl-2018-211943

Advance care planning (ACP) enables patients to discuss and determine their priorities for medical care with family and healthcare professionals. There are several studies suggesting that ACP interventions improve patient outcomes and satisfaction, yet it is not a routine implementation among patients with Chronic Obstructive Pulmonary Disease (COPD). The key impeding factors reported by physicians for not conducting ACP include a lack of time and concern over triggering psychosocial distress in patients and their family. Above all, the unpredictable disease trajectory of COPD makes it very difficult for healthcare professionals to determine the optimal timing to arrange for an ACP discussion.

In this cluster-randomised trial, the study authors aimed to assess whether introducing a 1.5-hour structured ACP session conducted by nurses could have an impact on the quality of end-of-life care communication in patients with advanced COPD. Secondary objectives were to assess the prevalence of ACP discussions six months after baseline, changes in mental health conditions and quality of death and dying.

The study participants were individuals with COPD and their loved ones. Patients with COPD were randomised to receive either an ACP intervention (n=89) or usual care (n=76) and were followed up for two years. The patients were assessed to study the prevalence of ACP discussions six months after baseline.

The findings of this study indicated that one session of nurse-led ACP intervention could significantly encourage and facilitate patients' end-of-life care communication with physicians, and was positively correlated with the incidence of ACP discussions with healthcare professionals after six months. In accordance with previous findings, ACP intervention improved anxiety symptoms within the loved ones at six-month follow-up. However, there was no overall improvement in depression symptoms and quality of death and dying. There were many patients with advanced COPD in this study who did not report an ACP discussion with physicians. It is generally assumed that most patients often remain quiet even when they are concerned about their future and end-of-life care.

ACP is a process and a joint effort between patients, loved ones and healthcare professionals. Moving forward, the study authors opined that patients should be empowered to take the initiative for an ACP discussion with healthcare professionals, and multidisciplinary training was recommended to ensure high-quality palliative care.
These are synopses of articles as they appeared at the time of writing. Articles are always subject to change post-publication; please ensure you check the latest version of the article before referencing any of this information.

The Primary Care Respiratory Academy has been developed and is produced by Cogora, the publisher of Pulse, Nursing in Practice, Healthcare Leader, Management in Practice and The Pharmacist, working in partnership with PCRS. All educational content for the website and events has been initiated and produced by PCRS/Cogora.

The Primary Care Respiratory Academy is sponsored by Boehringer Ingelheim, Chiesi, GlaxoSmithKline and Orion Pharma.