Efficacy of supervised maintenance exercise following pulmonary rehabilitation on health care use: a systematic review and meta-analysis


Pulmonary rehabilitation (PR) is a known high-value health intervention for those diagnosed with COPD. However, the health benefits associated with PR are often short term, with the condition of most patients returning to baseline 12 months after treatment. Interest has therefore increased in exploring potential maintenance programmes that can help prolong the health benefits associated with PR. In this meta-analysis, Alex R Jenkins, from the University of Lincoln, and colleagues reviewed eight studies, covering 790 COPD patients. Its aim was to explore the clinical benefits associated with continued supervised maintenance exercise programmes in COPD patients following PR as opposed to usual care. Results showed that implementing such exercise programmes significantly reduced the risk of at least one respiratory-cause hospital admission, along with the overall risk of an exacerbation in COPD patients. Reduction in length of stay and rate of respiratory-cause hospital admissions were also noted. The clinical significance associated with implementing maintenance programmes in COPD patients provides hope for improving patient outcomes and reducing healthcare use in COPD. The authors concluded that this is the start in a step towards building an evidence base for the use of continued maintenance exercise programmes in patients completing PR.

Independent determinants of disease-related quality of life in COPD – scope for nonpharmacologic interventions?


Understanding key features that impair quality of life (QoL) in COPD patients may provide insight into potentially modifiable factors that could be targeted to reduce the effect of disease and aid patients’ long-term management. Often, the QoL scores indicated in COPD patients have weak correlations with its physiologic factors, making this difficult to achieve. In this cross-sectional study, Sarah B Brien, from the University of Southampton, and her colleagues analyse data from the Birmingham COPD cohort study to investigate factors independently associated with impaired QoL in patients with COPD. Several factors were highlighted as having a significant association with the COPD Assessment Test (CAT) scores, including but not limited to depression, illness perception and exercise capacity. By conducting a dominance analysis, breathlessness (20.2%) and illness perception (19.8%) were highlighted as the largest contributors to patient CAT scores, followed by dysfunctional breathing symptoms (17.5%) and depression (12.5%). Other variables contributed ±5% to these CAT scores. The authors concluded that psychological factors are some of the main contributors to QoL impairment in patients with COPD. By exploring interventions targeted towards these main contributors, we can hope to improve QoL in COPD patients and improve their experience.

Effects of the “Living well with COPD” intervention in primary care: a comparative study


COPD self-management programmes aim to give patients the support and techniques required to effect change in their behaviour, reducing the risk of moderate and severe exacerbations, and improving disease-specific and health-related QoL. This study, conducted by Claudia Steurer-Stey (University of Zurich) and her colleagues, aimed to compare key outcomes between COPD patients who participated in the ‘Living well with COPD’ (LWWCOPD) self-management intervention programme, or who had undergone usual care in the COPD Cohort ICE COLD ERCI. Analysis of data collected from 467 patients (71 of whom had undergone the LWWCOPD intervention) demonstrated that patients undergoing self-management had improved health-related QoL and overall health-status. What’s more, use of this intervention considerably reduced the risk of moderate and severe exacerbations. From this, the authors concluded that self-management coaching in primary care gives patients the skills to accurately manage their condition, aiding the reduction of exacerbation risk and improving patient QoL, meaning the incorporation of this intervention into COPD patient care can improve outcomes in patients with COPD.

Smoking duration alone provides stronger risk estimates of chronic obstructive pulmonary disease than pack-years


The probability of a correct diagnosis of chronic obstructive pulmonary disease (COPD) relies on quantification of risk factors and symptom burden. Cigarette smoking is the strongest risk factor for COPD, and a dose–effect relationship exists between smoking and those who develop COPD, even though no precise estimate of a threshold effect is available. Smoking burden is measured in pack-years, but the relative contributions to structural lung disease of cigarettes smoked per day versus duration is unknown.

Surya Bhatt of the University of Alabama has led a team in the analysis of cross-sectional data from a large multicentre cohort of current and former smokers. Detailed assessment of smoking history was made, including the age at which patients started smoking, duration of smoking and the number of cigarettes per day. Smoking burden was also assessed using the conventional metric of pack-years. The primary outcome was airflow restriction (FEV1/FVC) and secondary outcomes included FEV1, computerised tomography (CT) emphysema, CT gas trapping, functional capacity and respiratory morbidity.
Smoking duration provided stronger risk estimates of COPD than cigarettes smoked per day and the composite index of pack-years. Giving equal weightage to cigarettes smoked per day and duration might attenuate the measured risk of association between smoking and COPD, resulting in miscalculation and biased estimates of disease risk.

Oral prednisolone in preschool children with virus-associated wheeze: a prospective, randomised, double-blind, placebo-controlled trial
SJ Foster, MN Cooper, S Oosterhof, ML Borland
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One in three children under the age of three years will experience an episode of wheeze, with viruses assumed to be the triggering factor. The clinical course of wheeze in pre-school children is different to that of asthma in adolescents and adults, for whom a beneficial role of corticosteroid administration in reducing the need for hospital admission during asthma episodes has been shown. This evidence is more robust than that supporting corticosteroid use in paediatric wheeze exacerbations.

Meredith Borland and colleagues from Perth, Australia, have run a prospective, randomised, double-blind, placebo-controlled trial to assess the efficacy of oral prednisolone in children presenting to a paediatric emergency department with suspected virus-associated wheeze. Six hundred and twenty-four patients aged between two and six years were randomly assigned to a three-day course of either oral prednisolone or placebo once daily.

Analysis of the study’s primary hypotheses showed that placebo treatment was inferior to prednisolone in reducing the length of stay in hospital in these children. The greatest efficacy was seen in patients with either severe features of wheeze at presentation, receiving salbutamol before presentation or prior history of asthma. No other significant predictors were found.

Reasons for Accident and Emergency department attendance by people with chronic obstructive pulmonary disease or heart failure: recipients and providers’ perspectives. An exploratory study
Jeong Su Lee, Heidi Lempp, Vivek Srivastava and Elizabeth Barley
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The 15 million people in England who are affected by one or more long-term conditions are frequent users of Accident and Emergency (A&E) services, especially those people with heart failure (HF) and chronic obstructive pulmonary disease (COPD). The number of admissions for both conditions is reported to have increased for the past ten years, and the literature suggests the decision to attend is considered by patients and community healthcare professionals to be exacerbation-driven and unavoidable. However, there is a gap in understanding the views of family members and hospital clinicians, with no known study comparing the three groups (patients, family members and hospital clinicians).

The exploratory study identifying key factors contributing to A&E attendance was undertaken by Jeong Su Lee and co-workers across these three groups. Input came in the form of interviews with patients and their family members and a survey of hospital clinicians.

All three parties agreed that severe exacerbation was the main reason for A&E attendance. The three key factors highlighted in relation to A&E attendance were: patients’ health-seeking behaviour, perceptions about the services offered by general practitioners and A&E, and patients’ attitudes toward managing their own conditions.

Improving patient trust in their GP services might encourage more timely access of primary care services and a decrease in exacerbation-driven attendance in A&E.

Program of Integrated Care for Patients with Chronic Obstructive Pulmonary Disease and Multiple Comorbidities (PIC COPD+): a randomised controlled trial

The purpose of this trial was to ascertain whether a multi-component, case manager-led exacerbation prevention/management model reduced emergency department visits of people with two or more COPD-associated comorbidities. Secondary outcomes included hospitalisation, mortality, health-related quality of life, chronic obstructive pulmonary disease (COPD) severity, COPD self-efficacy, anxiety and depression.

In this study, Louise Rose of the University of Toronto and her colleagues compared their multi-component intervention (which included individualised care/action plans and telephone consults) with usual care (in each of the two centres involved in the trial).

The 470 participants were randomised, with no differences in the number of emergency department visits or hospital admissions between groups. However, differences were detected in emergency department visit risk, in favour of the intervention. There was also a lower risk of hospital admission in the intervention group for those requiring hospital admission, with the risk of death nearly half that of the control (21 versus 36). There were no differences in the other secondary outcomes.
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.

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