Journal club

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IMPROVING PHYSICAL ACTIVITY (PA) IN MODERATE-TO-SEVERE ASTHMA: CHANGING BEHAVIOUR IS KEY

Increased PA is a well-established determinant in reducing asthma exacerbations and achieving better clinical control in addition to improving mental health. Despite this, supervised exercise training has had limited effects in improving habitual PA levels. Freitas *et al* (*CHEST*. 2021159:46) investigated how a behaviour change intervention may increase PA and lead to enhanced asthma control (measured via the asthma control questionnaire (ACQ)) using a single blind randomised clinical trial design. Patients with moderate or severe asthma who were clinically stable and attending a university hospital for asthma management were selected then randomly allocated to an intervention group (IG, n=26) or control group (CG, n=25). While both groups received standard pharmacological treatment, the IG underwent a behaviour change programme which used various techniques to improve PA and sedentary time. The behavioural change intervention increased PA from baseline (5283±1489 to 9439±4773 steps/day, p<0.001) and compared with the CG improved asthma control (mean difference in ACQ −0.8, 95% CI −1.1 to −0.4, p<0.001), anxiety symptoms (improvement in anxiety component of Hospital Anxiety and Depression Score 43% vs 0%) and sleep quality (mean difference in sleep efficiency 9.6%, 95% CI 6.9% to 12.2%). The study demonstrates the importance of behaviour change in improving habituated PA levels and highlights the potential for the approach to improve clinical control in adults with moderate-to-severe asthma.

WEIGHT GAIN ON CPAP THERAPY IN OSA: IT IS ONLY WATER (INITIALLY)

The suggested mechanisms mediating continuous positive airway pressure (CPAP)-associated weight gain include reduction in basal metabolic rate and increase in caloric intake which in turn leads to increase in fat and lean body mass. Herculano *et al* (*Am J Respir Crit Care Med*. 2021;203:134) hypothesised CPAP-associated weight gain can be explained by fluid accumulation secondary to reduced obstructive sleep apnea (OSA)-associated nocturia. This single-centre study used the CPAP-withdrawal design now well established in this area which uses patients established on CPAP and induces OSA by the withdrawal of therapy. The authors recruited 24 patients randomised to initial (n=12) or delayed (n=12) withdrawal of CPAP for 1 week. CPAP therapy was associated with a modest weight gain (0.4±0.6 kg, p=0.013). There was a trend to higher extracellular body water during CPAP as compared with CPAP withdrawal (mean difference 0.2±0.54 L, p=0.103). Additionally, 24-hour urinary volume was found to be higher during CPAP withdrawal (mean difference 160±434 mL, p=0.099). There was no difference reported in basal metabolic rate (p=0.618) or total energy expenditure (p=0.411), although using a diary rather than actigraphy measures to estimate PA energy expenditure. While further data are required to confirm the relationship between CPAP use and fluid accumulation and importantly include longer term follow-up, the study does provide promising evidence that fluid accumulation is an early mechanism for CPAP-associated weight gain during the treatment of OSA.

HOME-BASED PA PROGRAMME IN LATE-STAGE LUNG CANCER: SAFE WITH HIGH PATIENT SATISFACTION

Exercise has been demonstrated to reduce the risk of mortality in lung cancer. Despite the compelling evidence of benefits of PA in lung cancer, it is not routinely discussed with patients. Bade *et al* (*BMC Cancer*. 2021;21:352) conducted a pilot randomised clinical trial to assess if a home-based PA regimen may improve the quality of life (QoL) among patients with stages III and IV non-small cell lung cancer. The study had initial difficulties recruiting but demonstrated an eligibility rate of 56%. They found that the IG (n=20) reported a greater increase in self-reported PA (IG 123±212 min/week vs usual care 35±103 min/week; p=0.051), although objective step count was not significantly improved by the end of the study (p=0.87). While global QoL measured by the European Organisation for the Research and Treatment of Cancer Quality of Life Core Questionnaire was not significantly changed, once corrected for baseline values and sex, the functional domain demonstrated an improvement in the home-based PA group compared with usual care (p=0.022) and a reduction in dyspnoea of borderline significance (p=0.051). The results show the potential for a simple intervention to benefit patients with end-stage disease who may not have previously been considered for interventions addressing PA. However, the small sample size and discrepancy between subjective and objective PA measures mean that further work is needed prior to implementation of such an intervention into clinical practice.

TELEHEALTH CARE (TC) IN COPD: IMPACTS ON QOL DESPITE MORE EXACERBATIONS

TC has been studied in several healthcare settings as a strategy to improve patient care. Rassouli *et al* (*Brief Report J Intern Med*. 2021;289:404) examined the impact of TC on chronic obstructive pulmonary disease (COPD) and health-related QoL. This multicentre randomised crossover trial recorded patients' responses to daily TC questions focused on recognition of acute exacerbation of COPD (AECOPD) and weekly COPD assessment test (CAT) to assess QoL in comparison to standard care (weekly CAT but no daily symptom evaluation) in 6-month blocks. There were good rates of inclusion with 150 patients with mild to very severe COPD enrolled from 168 patients screened across six sites in two countries. Healthcare professionals contacted patients under TC if there were >2 days of consecutive new symptoms reported. As expected, QoL deteriorated over time, but this was attenuated during TC (CAT score: TC 1.8/year vs standard care 3.6/year, p=0.0015). Interestingly, higher numbers of moderately severe AECOPD were detected in TC group (TC 99 vs standard care 73, p=0.028). The reason for this difference is unclear but could represent 'missed' exacerbations in the standard care period with earlier treatment reducing impact on the patient. Even when accounting for the cost of TC, there was a numerical reduction in annual COPD-related care costs compared with standard care. Interpreting with other published data suggests that the impact of TC is variable dependent on the patient population and care model. Further studies focussing on health economics are needed prior to implementing such strategies in clinical practice.

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Funding The author has not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval This study does not involve human participants.

Provenance and peer review Commissioned; internally peer reviewed.

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Check for updates

To cite Hassan R. *Thorax* 2022;**77**:318.

Thorax 2022;**77**:318.
doi:10.1136/thoraxjnl-2022-218763

Thorax: first published as 10.1136/thoraxjnl-2022-218763 on 17 February 2022. Downloaded from http://thorax.bmj.com/ on April 24, 2024 by guest. Protected by copyright.