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AMBULATORY MANAGEMENT OF PRIMARY SPONTANEOUS PNEUMOTHORAX: SHORTER STAYS BUT NOT WITHOUT RISK

The optimum management of primary spontaneous pneumothorax remains controversial. Hallifax *et al* (*Lancet 2020;396:39*) performed a multicentre, open-label randomised controlled trial of 236 patients from 24 centres comparing ambulatory management of primary spontaneous pneumothorax with standard care (as per British Thoracic Society (BTS) guidelines). Patients were enrolled if they had a symptomatic pneumothorax (≥2 cm) and were assigned randomly to either insertion of an 8-French ambulatory device (n=117) or standard care (n=119). Primary outcome was total length of hospital stay up to 30 days postrandomisation. Median hospital stay in the first 30 days was 0 (0–3) days in those who had ambulatory care compared with 4 (0–8) days in standard care, with a median difference 2 days (95% CI 1 to 3, p<0.0001). Readmission rates were similar between groups. Time until successful completion of treatment was longer in the ambulatory care group (3 (1–6) days) vs standard care (2 (0–6) days), p=0.0040. The adverse event rate was high (ambulatory=64/117, standard care=46/119). All 14 serious adverse events occurred in the ambulatory care arm and required readmission to hospital. The authors conclude that ambulatory management of primary spontaneous pneumothorax reduces the duration of hospital admission and is an effective outpatient treatment strategy, however, there is an increased risk of adverse events.

INHALED THERAPY IN COPD: A LOWER DOSE OF INHALED CORTICOSTEROID STILL REDUCES EXACERBATIONS

In chronic obstructive pulmonary disease (COPD), triple therapy is recommended over dual therapy to reduce exacerbations and symptoms, however, inhaled corticosteroids (ICS) are associated with side effects. Rabe *et al (N Engl J Med 2020;383:35)* performed a phase 3, randomised, double-blind parallel group trial of 8509 patients to assess efficacy and safety of two different fixed-dose triple inhalers (budesonide 320 µg or 160 µg plus long acting muscarinic antagonist (LAMA) and long acting beta agonist (LABA) compared with two dual therapy inhalers (LAMA-LABA or ICS-LABA). Eligible patients aged 40–80 years old with symptomatic COPD on at least two inhaled therapies and at least one moderate-severe exacerbation in the last year were randomised 1:1:1:1. The primary endpoint was the annual rate of moderate or severe COPD exacerbations which was 24% lower in 320 µg budesonide triple therapy arm compared with glycopyrrolate-formoterol (rate ratio 0.76, 95% CI 0.69 to 0.83, p<0.001) and 13% lower than budesonide-formoterol arm (rate ratio 0.87, 95% CI 0.79 to 0.95, p=0.003). Exacerbation rate was 25% lower with 160 µg budesonide triple therapy versus glycopyrrolate-formoterol (rate ratio 0.75, 95% CI 0.69 to 0.83, p<0.001) and 14% lower than budesonide–formoterol (rate ratio 0.86, 95% CI 0.79 to 0.95, p=0.002). There was no difference between the two triple therapy inhalers. Pneumonia incidence was higher in the arms using ICS compared with LAMA-LABA (3.5%–4.5% vs 2.3%). This study highlights that triple therapy with lower dose 160 µg budesonide is effective to reduce exacerbation frequency and therefore may enable an overall reduction in inhaled steroid dose, although it was not clear that this significantly impacted on the measured adverse outcomes.

INHALED CIPROFLOXACIN IN BRONCHIECTASIS: LOWER BACTERIAL LOAD AND IMPROVED SYMPTOMS

Previous data have demonstrated inhaled antibiotics reduce exacerbations but do not improve health-related quality of life in patients with bronchiectasis, however, this is in contrast to many clinicians experience. Chalmers *et al (Eur Respir J. 2020, DOI: 10.1183/13993003.00110–2020)* performed a post hoc analysis of the ORBIT-3 and ORBIT-4 studies (two phase 3 randomised double-blind placebo controlled trials to assess inhaled liposomal ciprofloxacin (ARD-3150) in patients with non-cystic fibrosis bronchiectasis and chronic *Pseudomonas* infection) to assess whether there was symptom improvement during the 28-day treatment 'on' periods when *Pseudomonas* bacterial load would be lower compared with the month off antibiotics. Patients had to have had at least two pulmonary exacerbations in the last year, a forced expiratory volume in 1 s ≥25%, and have chronic *Pseudomonas* infection. In the original trials a quality of life questionnaire specific to bronchiectasis, Quality of Life Questionnaire-Bronchiectasis Respiratory Symptom scores (QOL-B RSS), was analysed at the end of 48 weeks (when patients were off treatment) demonstrating no improvement in symptoms with ARD-3150 compared with placebo. In the post hoc analysis, QOL-B score improved during treatment 'on' periods and corresponded to decreases in *Pseudomonas* bacterial load compared with placebo (change in colony forming units and change in QOL p<0.0001 for pooled data, p<0.0001 for ORBIT-3, p=0.0002 for ORBIT 4, p=0.08 for pooled data placebo group). This exploratory analysis demonstrates the potential of missing clinically relevant impacts of treatment of chronic disease when using a single time point for assessment of efficacy.

OBSTRUCTIVE SLEEP APNOEA: EVEN PATIENTS WITH MILD DISEASE BENEFIT FROM TREATMENT

While there is clear benefit on the use of continuous positive airway pressure (CPAP) in moderate to severe obstructive sleep apnoea (OSA) few studies have assessed the effect of CPAP on symptoms in mild OSA. Wimms *et al (Lancet Respir Med 2019, DOI: 10.1016/S2213-2600(19)30402-3)* performed a multicentre parallel, open-label, randomised controlled trial of patients with mild OSA (Apnoea–Hypopnoea index ≥5 and≤15 events per hour) to assess whether 3 months of CPAP led to improvements in quality of life, as assessed by the vitality scale of the 36- Item Short Form Survey (SF-36), versus standard care alone. A total of 301 patients were randomised and 233 allocated to CPAP (n=115) or standard care (n=118). The majority of patients self-declared reasons for referral were snoring, sleep disturbance or witnessed apnoeas. After 3 months of CPAP treatment, the vitality score was significantly increased with a mean change of 9.2 points for CPAP (95% CI 6.8 to 11.6), −0.8 points (95% CI −3.2 to 1.5) for standard care with a treatment effect of 10.0 points (95% CI 7.2 to 12.8), p<0.0001. A treatment effect was seen in several other subjective scores assessing daytime sleepiness, sleep quality and fatigue. CPAP may be used in mild OSA to improve symptoms, however further studies are needed to assess cost-effectiveness and superiority over other treatment options such as mandibular advancement devices.

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