P239 EFFECT OF INHALED CORTICOSTEROID (ICS) PARTICLE SIZE ON ASTHMA EFFICACY AND SAFETY OUTCOMES: A SYSTEMATIC LITERATURE REVIEW

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Introduction and objectives ICS of differing particle size, due both to the formulation and propellant, may impact patient outcomes. This systematic review of randomised controlled trials compared asthma efficacy and safety outcomes from the use of fluticasone propionate (FP)-containing medications and alternative smaller particle ICS.

Methods English language published peer-reviewed literature (Jan 1, 1998-Feb 13, 2014) with FP-containing medications, yielded 1,655 potentially-relevant articles: 1,575 were excluded, 80 full-text articles were reviewed, and 25 were extracted for data with treatment comparisons (FP- vs. small particle ICS-containing medicines). Efficacy measures included lung function, asthma exacerbations, and rescue medication use. Safety endpoints included adverse events, growth and bone measures, and cortisol. Benefit-risk interval plots of risk differences with 95% confidence intervals were produced for FP vs. comparators.

Results Ten controlled trials compared the efficacy of FP with beclomethasone diproprionate (BDP-HFA). Six studies found no appreciable differences in efficacy while four trials identified improvement in lung function with FP vs. BDP-HFA. In ten randomised trials comparing the efficacy of ciclesonide (CIC) with FP, CIC was found to be non-inferior or not statistically different from FP on numerous efficacy endpoints in the majority of the studies. Most safety assessments across nine trials did not differ between treatments. Results were similar for fixed dose combination therapies that contained FP and BDP-HFA (n = 3 trials).

Conclusions This systematic review suggests no differences in efficacy or safety between FP-containing medications and small particle size ICS medications for the treatment of asthma.

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P240 SMARTINHALERS – A NEW APPROACH TO ASSESSING ADHERENCE IN DIFFICULT ASTHMA

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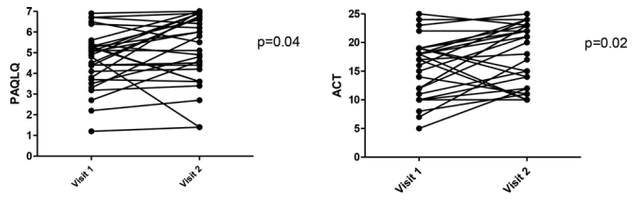
Introduction Poor adherence is one of the key determinants of sub-optimal asthma control in children. Correctly identifying children with poor adherence can avoid unnecessary escalation of treatment and enable a targeted adherence intervention.

Objective To use electronic monitoring devices (Smartinhalers) to measure adherence to inhaled corticosteroids (ICS) in children with problematic severe asthma (PSA) and compare the data with prescription uptake and symptoms during the monitoring period.

Methods Smartinhalers were issued to patients for a 6–8 week study period as part of an established nurse led assessment in a tertiary referral centre. Advice regarding adherence and the purpose of the Smartinhalers was explained to all children and their parents. Lung function, bronchodilator reversibility, exhaled nitric oxide (FENO), mini paediatric asthma quality of life questionnaire (mPAQLQ), and asthma control test (ACT) were recorded at baseline and follow up. Wilcoxon signed ranks was used to compare visit 1 and visit 2 data. GP prescription uptake for ICS and number of salbutamol canisters issued in past year were obtained.



Abstract P240 Figure 1

Results 33 children (21 male), median age 13 (5–17) years) were issued with Smartinhalers. 15 had adherence >80%, 14 between 50–80% and 4 < 50%. ACT and mPAQLQ improved significantly over the monitoring period (Figures 1 and 2). Children with a prescription uptake of <80% had a significant improvement in ACT compared to those with pick up of ≥80% (median change 3.5 (IQR 0.75–7.25) vs 0 (-4–3)) and a non-significant trend towards improvements in FEV1 and BDR.

There was no relationship between prescription uptake and Smartinhaler adherence or salbutamol inhalers collected.

Conclusion Even when children know they are being monitored over half used <80% of the prescribed dose. Improvements in objective markers of asthma control during the monitoring period can help to identify those who were previously poorly adherent. Smartinhalers are useful tools in the assessment of adherence in conjunction with GP prescriptions and clinical observations.

P241 ANTI-REFLUX SURGERY CONVEYS A LONG TERM IMPROVEMENT IN RESPIRATORY SYMPTOMS IN ASTHMA AND CHRONIC COUGH

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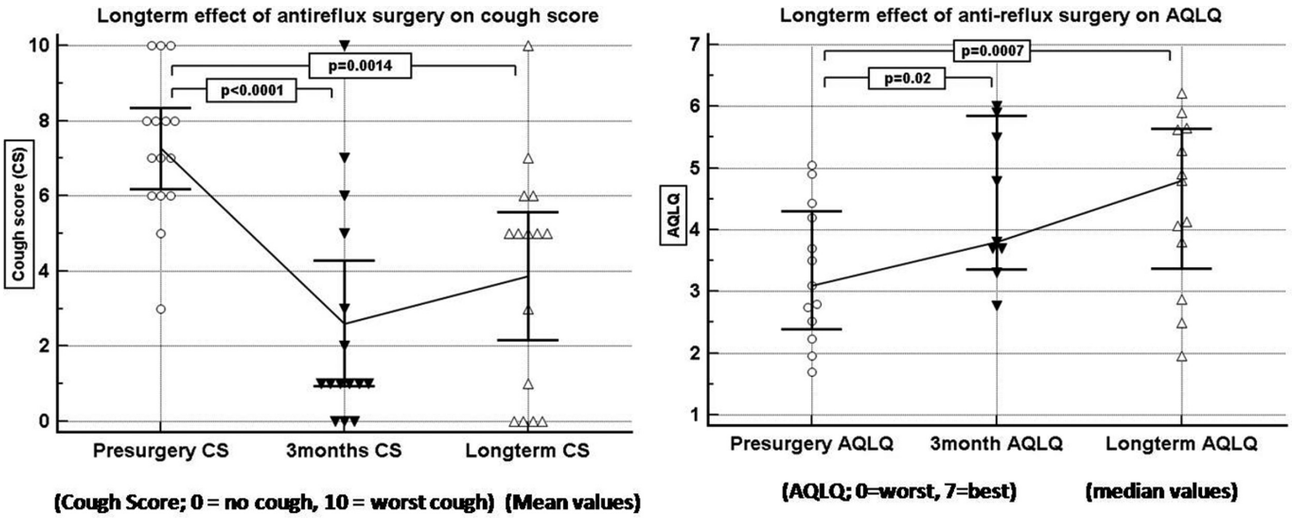
Introduction Previously we have reported short term improvement in asthma related quality of life (AQLQ) and cough scores following anti-reflux surgery in asthma and chronic cough patients with gastro-oesophageal reflux disease (GORD) that did not respond to medical treatment. Herein we report on long-term outcome data.

Method A database of respiratory patients undergoing anti-reflux surgery was set up to assess GORD and respiratory symptoms at baseline, 3 months and long-term (mean 5 years). Data on lung function was also collected.

Results Twenty-eight patients (71% female, mean age = 50.1 years) completed an AQLQ (13 asthmatics) or cough score questionnaire (15 chronic cough patients) at a mean of 66 months following surgery (range = 6–100 months). The Hull reflux cough questionnaire (HRCQ) was also completed. All had significant reflux at baseline confirmed with oesophageal manometry and pH studies (mean DeMeester score of 47.26 [normal < 14.72], mean lower oesophageal sphincter pressure of 4.6mmHg [normal = 12–25] and a mean reflux time of 11.7% [normal < 4%]). The mean baseline FEV1 in the asthma group was 2.22 L (76% predicted) with a mean FEV1/FVC of 74%. In the cough group, mean FEV1 at baseline was 2.45 L (90% predicted) with a mean FEV1/FVC of 84%.

In the asthma group there was significant improvement in mean AQLQ (7 = best, 0 = worst) from baseline of 3.29 (SD=1.1) to 4.38 (SD=1.2) at 3 months and 4.44 (SD=1.4) long term (Figure 1). In the cough group, cough scores (0 = no



Abstract P241 Figure 1 (A) Longterm effect of antireflux surgery on cough score, (B) Longterm effect of anti-reflux surgery on AQLQ

cough and 10 = worst cough) significantly improved from a baseline mean of 7.3 (SD=1.9) to 2.6 (SD=3) at 3 months and 3.9 (SD=3.1) long term (Figure 1). In the asthma group we also observed an improvement in the mean HRCQ (0 = no reflux, 70 = worst reflux) from 49.2 (SD 13.8) at baseline to 22 (SD 13.9) long-term, without corresponding improvement in FEV1.

Conclusion Anti-reflux surgery provides sustainable long-term benefit to patients with significant GORD and poorly controlled asthma or chronic cough. These data require further confirmation in controlled trials.

Transplantation advances

P242 PIRFENIDONE AS A BRIDGE TO LUNG TRANSPLANTATION IN PATIENTS WITH PROGRESSIVE IPF

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Introduction and objectives Lung transplantation provides a significant survival benefit to patients with advanced idiopathic pulmonary fibrosis (IPF). However, at this time, the transplant community is unable to meet the requirements on it services due to donor organ shortages. This results in an increased length of time spent on the waiting list and an increased risk of death prior to transplantation.

Pirfenidone has been reported to reduce the rate of disease progression in patients with IPF. It may therefore prolong the length of time that patients are able to spend on the transplant waiting list. We report the outcomes of three patients with progressive IPF who were successfully bridged to transplantation with Pirfenidone.

Methods We retrospectively reviewed the medical records of all patients who had undergone lung transplantation for IPF from 2012–14 at our institution. Three patients who had been prescribed Pirfenidone prior to transplantation were identified. Each patient continued Pirfenidone until the day of transplantation. Patient demographics, lung function and post transplant data were collated.

Results Prior to the commencement of Pirfenidone the mean decline in forced vital capacity (FVC) was 52.2ml per month. Following Pirfenidone therapy, the mean decline in FVC was 29.2ml per month. The mean length of time from commencing Pirfenidone to transplantation was 419 days (range 190–768 days). The mean length of time spent on the transplant waiting list was 144 days (range 35–271 days).

With a mean follow up of 1.45 years, no episodes of acute or chronic rejection have occurred. Post-transplant survival is 100%. No adjustment in immunosuppressant induction or post-transplant therapy was necessitated. In the post-transplant period, Pirfenidone therapy was not linked to any adverse events.

Conclusion Pirfenidone has been reported to reduce disease progression in IPF. However, despite this, lung transplantation remains necessary in the management of this condition. For patients with IPF, in whom the transplant window is short, Pirfenidone may allow for valuable added time on the lung transplant waiting list.

P243 A RETROSPECTIVE OBSERVATIONAL STUDY OF 20 YEAR LUNG TRANSPLANT SURVIVORS – A SINGLE CENTRE EXPERIENCE

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Introduction and objectives Lung transplant patients have a reduced survival rate compared to other solid organ recipients. Chronic lung allograft dysfunction (CLAD) remains the main factor in limiting longevity in lung transplant patients, with 50% of recipients developing Bronchiolitis Obliterans Syndrome (BOS) by 5.6 years. There is a lack of published data on the