**Results** The analysis showed that there was an ICER (Incremental Cost-Effectiveness Ratio) of 32 000 GBP/QALY (Quality Adjusted Life Years) associated with high dose dry powder FP/S 1000/100 µg vs extrafine BDP/F 400/24 µg and an ICER of approximately 36 800 GBP/QALY associated with medium dose dry powder FP/S 500/100 µg vs BDP/F 400/24 µg. Additional analysis showed that there was an ICER of 85 200 GBP/QALY associated with high dose suspension formulation FP/S 1000/100 µg vs extrafine BDP/F 400/24 µg.

**Conclusions** BTS/SIGN guideline recommend that when asthma control is achieved, treatment can be stepped down to the lowest dose that maintains control. It was found that maintaining controlled patients on high dose FP/S is not cost-effective. Extra control is achieved, treatment can be stepped down to the lowest dose that maintains control. When asthma control is achieved, treatment can be stepped down to the lowest dose that maintains control. If the patient is continued on high dose FP/S, treatment can be stepped down to the lowest dose that maintains control. If maintained controlled patients on high dose FP/S is not cost-effective. Extra control is achieved, treatment can be stepped down to the lowest dose that maintains control. If maintained controlled patients on high dose FP/S is not cost-effective. Extra control is achieved, treatment can be stepped down to the lowest dose that maintains control.

**Adherence:** 1 of 12 patients tested was identified as non-adherent with undetectable prednisolone level and normal cortisol. Health-care utilisation: 68 patients with 12 months follow-up data demonstrated a significant reduction in hospitalisations compared to the previous 12 months, 1.00 vs 0.53.

**Conclusion** This study highlights the importance of alternative diagnoses and comorbidities in the work up of difficult asthma. IgE and FeNO were higher than expected as was adherence to OCS compared to published studies. The implementation of a DAC has reduced hospital admissions, reduced OCS requirement and enhanced access to treatments such as Anti-IgE therapy.

---

**Cellular responses in the aetiology of COPD**

**PT15** CHRONIC DIESEL EXHAUST PARTICLE (DEP) EXPOSURE DIFFERENTIALLY ALTERS MONOCYTE DIFFERENTIATION AND FUNCTION IN HEALTHY CONTROLS COMPARED TO COPD

N Chaudhuri, H Jacob, S Lea, N Khan, I C Parker, D Singh, I Sabroe. 1Academic Unit of Respiratory Medicine, University of Sheffield, Sheffield, UK; 2Academic Unit of Respiratory Medicine, The University of Newcastle, Newcastle, UK; 3Respiratory Medicine Research Group, University of Manchester, Manchester, UK

**Introduction and Objectives** Alveolar macrophages are heavily implicated in the pathogenesis of COPD. During chronic inflammation, macrophages mature continuously from infiltrating monocytes that are continually recruited to the airways. We have previously found DEP modulate life span and function of monocytes from healthy donors, but their effects on monocytes of people with COPD are unknown, and were therefore the subject of this study.

**Methods** Monocytes were purified from the blood of patients with GOLD II/III COPD and healthy age matched controls. Monocyte-derived macrophages (MDMs) were generated in the presence or absence of DEP and their lifespan studied. Cytokine generation in response to TLR agonists and heat killed bacteria was assessed by ELISA and expression of CD14 was measured by FACS.

**Results** Chronic exposure of monocytes from patients with COPD to DEP concentrations above 10 µg/ml caused a significant reduction in cell survival. Lower concentration of chronic DEP exposure, as low as 1 µg/ml, caused impairment of cytokine responses to LPS and heat killed Escherichia Coli, and this phenotype was associated with a reduction in CD14 surface marker expression. However, COPD monocytes were generally more resistant to the effects of DEP compared to healthy control cells.

**Conclusions** In this study monocytes from healthy volunteers appeared to be more susceptible to the harmful effects of chronic DEP exposure compared to those from individuals with COPD. These findings reinforce the evidence that circulating leukocytes in COPD patients have altered phenotypes.

---

**PT16** TESTING ANTIOXIDANT AND ANTI-INFLAMMATORY THERAPIES IN A COMPLEX LUNG TISSUE MODEL

T S Singh, F Razali, M N North, T W Wilkinson, B L N Nicholas. University of Southampton, School of Medicine, Southampton, UK

COPD is a disease of global importance and its primary cause airway inflammation as a consequence of cigarette smoking is well described. However, there remains a lack of effective therapies for this important condition. Animal models of disease are limited in their predictive utility and therefore creation of a complex, human disease model is an important step for testing new therapeutic interventions. We therefore established a tissue model of oxidative and inflammatory responses to relevant triggers—cigarette smoke and LPS and determined the impact of interventions in the optimised system.

**Methods** Human lung tissue explants from the resected lobes of six consented patients undergoing lobectomy were used. Uniform tissue explants were established on a novel culture system and then treated with CSE and LPS before the supernatants were collected. Optimal dosing was determined. Treatments and control experiments were performed with the anti-oxidant Vitamin C and fluticasone. Inflammatory readouts were measured by ELISA; TNFa, IL-8 and MMP-9.