of asthma, little is known about the specific relationship between asthma, occupational exposures and health-related quality of life.
Methods Adults aged over 55 years in the Sheffield area of the UK were randomly mailed a self-completed questionnaire (including questions on respiratory symptoms and physician-diagnosed disease, smoking and occupational history); responders were invited to perform lung function (FEV_1 and FVC), and to complete the EQ-5D-3L instrument. A measure of socioeconomic deprivation (SED) derived from postal code data was also included.
Results 623 individuals provided data as detailed above. 57% were male, 62% were "ever smokers", 13% had an exclusive diagnosis of asthma (without any other respiratory disease) and 62% reported occupational exposure to vapours, gases, dusts or fumes (VGDF). A linear regression analysis was performed using the EQ-5D summary index score as the dependent variable and reported doctor diagnosed asthma, age, gender, percentage predicted FEV_1 (PPFEV),smoking history and prior history of VGDF exposure as independent variables. SED ($p<0.001$), Age ($p<0.001$), gender ($p<0.001$) and VGDF exposure ($p<0.001$) were all independently associated with a lower quality of life. Asthma ($p=0.394$) and smoking ($p=0.541$) were not.
Discussion These data do not support a link between self reported doctor diagnosed asthma and a reduction in quality of life in this population, after correcting for the effects of other relevant factors, although do support a link between occupational exposure to VGDF and a reduced health-related quality of life.

S136 PRE- AND POST-SPECIFIC INHALATIONAL CHALLENGE MEASUREMENTS OF FRACTIONAL EXHALED NITRIC OXIDE (FENO) IN THE DIAGNOSIS OF OCCUPATIONAL ASTHMA

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Introduction The interpretation of Specific Inhalation Challenge (SIC) can be equivocal, particularly for late asthmatic reactions. It has been suggested that increases in FE_{NO} 24-hours post-challenge might help separate positive from negative challenges.
Methods We reviewed all positive and equivocal SIC tests with occupational agents between March 2008 and June 2012 from our tertiary referral centre. FE_{NO} was measured pre- and 24-hours post control and active challenges using a Niox Mino handheld machine at 50 ml/sec, compliant with ERS/ATS recommendations. Post-challenge changes >20% for FE_{NO} >50 ppb, or >10 ppb for <50 ppb, were counted as per ATS guidelines for a clinically significant change (1).
Results 24 patients had complete data related to control and active challenges, which were positive in 15 and equivocal in 9 cases. 13/24 patients had raised pre-control challenge FE_{NO} (mean=31.3) after adjusting for smoking and inhaled corticosteroid use. Increases in $FE_{NO,}$ more than the minimum clinically relevant difference, were seen after 13/24 control challenges: including 6/7 exposures to cleaning agents or hand gels and 2/6 unused metalworking fluids. 5/24 patients had a clinically significant increase in FE_{NO} after positive or equivocal challenges: including 1/4 challenges with isocyanates, 1/6 cleaning agents or hand gels, and 2/3 with used metalworking fluids. There was no statistically significant difference in mean percentage change in FE_{NO} between control and active challenges.
Conclusions The previously defined minimum clinically relevant difference for FE_{NO} was seen as commonly following control as active challenges. Measuring changes in FE_{NO} pre- and 24-hours post challenge to the diverse range of low molecular weight agents tested did not provide useful additional information for interpreting SIC responses.
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Treating asthma

P1 OMALIZUMAB IN PAEDIATRIC ASTHMA: IMPORTANCE OF MULTI-DISCIPLINARY ASSESSMENT TO IDENTIFY ELIGIBLE PATIENTS

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Omalizumab is effective treatment for patients with severe asthma. It is reserved for patients with truly severe disease as it is expensive and associated with significant treatment burden. Identifying this small number of patients in problematic severe asthma (PSA) group is challenging. We evaluated the impact of multi-disciplinary severe asthma (SA) protocol on identifying those with severe disease and on potential use of omalizumab.

After initial clinic visit, 19 patients aged between 6–15yrs with PSA underwent specialist nurse led SA protocol which included: assessment of clinical status, lung function, atopy, inhaler technique, asthma control test (ACT), quality of life (QoL); home visit for further assessment of environment, adherence and psychosocial comorbidities; school contact to address impact on education.

Before SA protocol, 17/19 patients met criteria for use of omalizumab. After SA protocol, only 6(35%)were eligible as modifiable factors were identified in 11(65%). They included poor adherence, ongoing allergen exposure and psychological issues. 5/6 patients received omalizumab and 4(80%) improved. Of other 11 patients, clinical status improved in 6 (55%), unchanged but stable in 4(36%), worsened in 1(9%) after assessment.

SA protocol identified modifiable factors in significant proportion of PSA children limiting omalizumab use to those with truly severe disease. Home visit assessment is essential to identify these factors which would otherwise be unrecognised. We hypothesise that proper recognition and management of these factors might not only ensure appropriate use of omalizumab but also improve its effectiveness.

P2 EVALUATION OF SWITCHING THERAPY FROM FIXED-DOSE COMBINATION INHALED CORTICOSTEROID/LONG-ACTING BETA2AGONIST TO BECLOMETASONE DIPROPIONATE/ FORMOTEROL (FOSTAIR 100/6®)

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Introduction and Objectives Asthma therapy reviews aim to minimise side-effects and achieve cost-effective asthma control. We set out to examine the impact of switching from a fixed dose combination therapy inhaled corticosteroid/long-acting β2 agonist (FDC ICS/LABA) therapy via dry power inhaler (DPI) or metered-dose inhaler (MDI) to beclometasone dipropionate/formoterol (BDP/FOR) via MDI at the same or reduced dose of ICS in stable patients.
Methods We utilised the UK's Optimum Patient Care Research Database to identify suitable primary care patients (aged 18–80 years) with asthma (diagnostic code and/or ≥2 asthma prescriptions in the last year) who were changed from FDC ICS/LABA to a prescription of BDP/FOR MDI at the same or lower BDP-equivalent ICS daily dose following a review of their existing ICS/LABA therapy. The number of exacerbations was measured as an outcome,

with exacerbations defined as asthma related hospital, accident and emergency or out-of-hours attendance, GP consultations for lower respiratory tract infection and/or use of acute oral steroids (where asthma related includes all events with a lower respiratory Read code). All patients had 2 years of data: 1 year before and 1 year post therapy switch.

Results Out of a total of 365 patients, 334 had complete data for the analysis. 80 of these received a lower dose of BDP/FOR while 254 received an equivalent dose. In the year immediately before their therapy review, 69.5% (n=232) of patients had no exacerbations, compared to 76.9% (n=257) of patients following the review (p=0.075 Wilcoxon signed ranks). Prior to review, 20.4% of patients had 1 exacerbation compared with 12.0% of patients after the change, while 10.2% of patients had >1 exacerbation compared with 11.1% of patients following the review.

Conclusion These data suggest an increase in the number of patients not suffering from exacerbations and no deterioration in the number of exacerbations following the alteration in therapy. This indicates that BDP/FOR can be a valid therapy change in real-world patients on existing FDC ICS/LABA therapy.

P3 OXIDATIVE DISTRESS AND ANTIOXIDANTS IN SEVERE ASTHMA

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Background The role played by oxidative stress (OS) burden and antioxidant (AO) defences in severe asthma (SA) have been inconsistent.

Aims To compare levels of OS markers and AO between subtypes of SA, mild asthma (MA) and control (N).

Methods A longitudinal case control study (2009–2010) included 15 N, 15 corticosteroid naïve MA, 10 SA not dependent on oral corticosteroids (OCS), 10 SA dependent on OCS (NOCS) and 10 type-1 brittle asthma (BA). Subjects taking vitamin supplementation were excluded. Serum AO – vitamin A (vit-A) and E (vit-E), copper(Cu), selenium(s) and zinc (Zn) were measured at first visit. Exhaled breath condensate (EBC) nitrate and 8-isoprostane(iSo), Fractional exhaled Nitric Oxide (FeNO) were measured on 3 visits 3 weeks apart as markers of OS. OS and AO markers were correlated with asthma-severity.

Results Sixty subjects were recruited (16 males, age 19–57 yrs). 8-iSo was not detectable in all of our samples. Significant correlations (p<0.05) between AO and OS markers are given in the table below

Abstract P3 Table 1

	Vit A	Vit E	Cu	Se	Zn
FEV1	–0.268	–0.436	–0.367	NS	NS
FeNO	0.286	NS	NS	NS	NS
EBC nitrate	0.369	NS	NS	NS	NS

NS- not significant.

Between group analyses revealed correlation of FeNO with increasing asthma-severity, but EBC nitrate did not differ significantly amongst the 5 groups. Vit-A was significantly higher in OCS group, and vit-E was significantly higher in the OCS, NOCS and BA groups as compared to N. There was no significant difference between the 5 groups in Cu, Zn or Se levels. Regression analysis identified age, height, and vit-E as best predictors of FEV1.

Conclusion This study indicates paradoxically increased levels of some of the AO in severe asthmatics. We hypothesise that the mechanics by which AO counteracts the OS in severe asthmatics could be impaired rather than AO deficiency. This needs to be researched further in larger studies.

P4 OMALIZUMAB: A NATIONAL REVIEW OF PRACTISE ACROSS THE UNITED KINGDOM

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A varied approach to the initiation, assessment and delivery of Omalizumab across the United Kingdom has been observed. To analyse the disparity in practize a questionnaire was disseminated to centres administering Omalizumab. Completed questionnaires n=43 (32.5% paediatric/67.5% adult). Questions asked were specific to the initiation, assessment and delivery of Omalizumab, the results identified a wide disparity in practize.

Adherence assessment prior to Omalizumab initiation was completed by all centres; however there was a varied approach of each centre in their assessment. 90.6% assessed prescription records, 74.4% questioned patients regarding medication adherence, 32.5% measured prednisolone levels and 4.6% utilised a validated questionnaire (4.6%) Longitudinally 48.8% continue to monitor adherence every 0–6 months, 27.9% every 6–12 months whilst 11.6% do not cheque adherence long term. Centres were diverse in their period of recommended observation post first dose. 4.6% advocate a 0–60 minute observation, 25.5% 1–2hrs, 39.5%, 2–3 hrs and 23.3% >4hrs, subsequent dose administration also varied across centre 37.2% advocated a 0–30min observation, 25.5% a 30–60min period and 11.6% 2–3hrs (11.6%). Paediatric centres advocated a longer observation period post injection. Across centres there is a huge inconsistency in weight observation 46.5% of centres weigh patients each visit, 27.9% 1–3 monthly and 16.2% 3–6 monthly. Dose of Omalizumab is only altered specific to weight fluctuation by 60.4% of which a higher percentage is practised in paediatric compared to adult centres (71.4%/55.1%). Out of dosing range prescribing is undertaken by 57.1% (paediatric) 29% (adult). Use of adrenaline auto injectors were not advocated by 60.4% of the centres, of the remaining 39.5% who advocate adrenaline auto injectors only 47% of this population have specific guidance relating to length of time to keep the injector available.

Results of this audit provide evidence for the requirement for national evidence based guidelines, to procure a standardised collaborative approach regarding the use of Omalizumab for patients with severe persistent allergic asthma, with this in situ best practise can be delivered throughout the United Kingdom.

P5 INTRODUCING BRONCHIAL THERMOPLASTY TREATMENT INTO A SEVERE ASTHMA CLINICAL SERVICE

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Introduction and Objectives Bronchial thermoplasty involves the delivery of radio frequency energy to the airways during flexible bronchoscopy, and possibly exerts its effect by reduction of airway smooth muscle mass (1). Clinical trials of bronchial thermoplasty have shown benefits in the treatment of patients with moderate or severe asthma. We describe our experience of introducing bronchial thermoplasty into a severe asthma clinical service.

Methods Funding was obtained from the Greater Glasgow and Clyde NHS Health Board to evaluate bronchial thermoplasty in the treatment of ten patients with moderate to severe asthma. Patients were assessed at the Difficult Asthma Clinic and selected for the procedure using criteria similar to those employed in clinical trials of bronchial thermoplasty. Patients on all forms of asthma medication were eligible for treatment including omalizumab and oral