for the healthcare provider and gains in health utility (% of being in perfect health).

Results Data from the C-RCT showed that after receiving the A.B.O.V.E. ASTHMA intervention, patients improved their asthma control, assessed by the ACT, shifting from not controlled (RED) towards partially controlled (YELLOW), and fully controlled (GREEN) groups. Asthma control improved in the vast majority of patients (median ACT score was 19 at baseline, 20 at 3 month and 21 at 6 month post intervention). The number of patients who were on MID target and reached the GREEN group at 3 and 6 months were 129 (15.8%) and 162 (19.9%) respectively. The overall annual cost savings per 1000 patients attached to the shift towards the MID target was equal to: 3 46 012 euros (NHS) at 3 months and increased to 4 25 483 euros (NHS) at 6 months (see Table). Health utility gains were equal to 0.9 and 0.29 years in full health, respectively.

Conclusions The A.B.O.V.E. ASTHMA tool can secure MID in ATC and, in doing so, better outcomes in terms of clinical, utility and economic results.

The calculation of the cost-saving for the NHS was estimated for a population of 1000 asthma patients

P201 PARKRUN DYSPNOEA – ISN'T IT ALL EXERCISE-INDUCED ASTHMA?

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Introduction A broad differential diagnosis exists for exercise-induced dyspnoea (EID) and wheeze in young athletic individuals, however these symptoms are often treated as presumed exercise-induced asthma (EIA). A key differential diagnosis for EIA is exercise-induced laryngeal obstruction (EILO); a condition characterised by transient closure of the larynx precipitating stridor during exercise. Recent studies reveal a prevalence of 5%–7% in Scandinavian adolescents, however the prevalence of EILO in the UK is currently unclear.

Objectives To assess the prevalence of stridor and EID in a cohort of recreationally active individuals.

Methods Cross-sectional field-based evaluation of the prevalence of stridor and EID in a cohort of individuals completing a 5 km Parkrun event in Northern England. Eighty-five adults (male: n=43) (mean $\pm$ SD) age: 39 $\pm$ 15 years) were enrolled. Pre-race, respiratory symptoms (Dyspnoea-12 [D12 score: $\geq$ 1–36] in combination with an Allergy Questionnaire for Athletes [AQUA score: $\geq$ 5] and baseline spirometry were assessed. Immediately post-race, breathing was monitored continuously using an audio recording device for 15 min or until full recovery (i.e., resting tidal breathing had resumed). Recordings were analysed retrospectively and coded for signs of the predominant respiratory noise: 0=nil; 1=inspiratory stridor; 2=expiratory wheeze; 3=combined stridor+wheeze; 4=cough.

Results The majority of the cohort (93%) had normal resting lung function. Despite this, the prevalence of troublesome respiratory symptoms was 46% (D12 score: 6 $\pm$ 5 and AQUA score: 13 $\pm$ 6). Almost one third of the cohort (28%) had at least one respiratory sign: inspiratory stridor (n=9; 11%), expiratory wheeze (n=7; 8%), combined stridor +wheeze (n=6; 7%); cough (n=2; 2%). Of these, over one fifth (21%)

had both a symptom and sign of respiratory dysfunction with sign of stridor and EID the most common (14%) (figure 1).

Conclusion The prevalence of stridor and EID was 14% in recreationally active individuals completing a Parkrun event. Further work is needed to determine if this relates to objective evidence of EILO however these findings indicate a prevalence in keeping with published series.

Abstract P201 Figure 1 Prevalence of respiratory symptoms and signs of respiratory dysfunction in a parkrun cohort.

P202 OBSTRUCTIVE SLEEP APNOEA (OSA) AND NON-EOSINOPHILIC ASTHMA: AN IMPORTANT PHENOTYPE IN THE SEVERE ASTHMA POPULATION

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Introduction An association between Obstructive Sleep Apnoea (OSA) and asthma has been suggested, with OSA adversely impacting on clinical outcomes. The importance of OSA in severe asthma, and understanding of this phenotype in relation to asthma related inflammatory biomarkers remains unclear.

Methods Patients at a tertiary severe asthma service and associated respiratory clinics completed an Epworth Sleepiness Score (ESS) and overnight limited-channel sleep study. Clinical data including the asthma control questionnaire score (ACQ), fractional exhaled nitric oxide (FENO) and peripheral eosinophil count was collected from the most recent clinical visit. Data were analysed using MedCalc software version 15.

Results The total population included 116 asthmatics, 92 (79%) females, 24 (21%) males. Mean ACQ score was 2.87 (95% CI, 2.6–3.2). 103 (88.8%) had severe asthma (SA), and 13 (11.2%) had non-severe asthma (NSA). 66/103 (64.1%) of SA had OSA, 4/13 (30.8%) of NSA had OSA, p=0.0213. FENO was significantly lower in the OSA group 36.4 $\pm$ 27.3 parts per billion (ppb) compared to the no-OSA group 53.7 $\pm$ 49.2 ppb, p=0.021. Peripheral eosinophil count was significantly lower in the OSA group 0.31 $\pm$ 0.25 $\times$ 10⁹/L compared to the no-OSA group 0.45 $\pm$ 0.46 $\times$ 10⁹/L, p=0.049. ESS was similar in both groups; 10.7 $\pm$ 5.2 OSA, 8.8 $\pm$ 5.2 no-OSA group, p=0.063.

Conclusion A high prevalence of OSA was noted in this asthmatic population, which was significantly higher in severe

asthma when compared to non-severe asthma. Eosinophilic disease was significantly lower in the OSA group, suggesting an alternative driver of symptoms with this asthma phenotype. The current screening questionnaire failed to predict OSA in this specific population, suggesting routine overnight sleep studies are required to screen patients with severe asthma.

P203 A COMPARISON OF ADVERSE EVENTS ASSOCIATED WITH LICENSED AND UNLICENSED SPACER USE WITH NON-EXTRAFINE BECLOMETASONE DIPROPIONATE TREATMENT IN A REAL-LIFE PATIENT POPULATION WITH ASTHMA IN THE UK

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Background Spacers may be compatible but unlicensed for an inhaler device. A prior study showed that co-prescription of unlicensed spacers with non-extrafine (non-EF) beclometasone dipropionate (BDP) asthma therapy was common.¹ This study aimed to compare the occurrence of patient-reported inhaled corticosteroid (ICS)-related adverse events (AEs) in patients with asthma co-prescribed the licensed Volumatic or unlicensed Aerochamber spacer with their non-EF BDP therapy.

Method A cross-sectional study using completed questionnaires and data extracted from the Optimum Patient Care Research Database including patients with asthma, aged ≤ 65 years, ≥ 2 prescriptions for non-EF BDP and co-prescription of either a Volumatic or Aerochamber spacer. Patient characterisation was performed for the year prior to receipt of the completed questionnaire. AEs captured via questionnaire included continual sore mouth/throat, oral thrush, hoarse voice, bruising, weight gain and cough. The primary outcome was non-inferiority of the proportion of patient-reported oral candidiasis (reported as oral thrush/hoarse voice). The two spacer groups were compared using logistic regression, adjusted for gender, ICS average dose and smoking status. Non-inferiority was claimed if the upper 95% confidence interval (CI) of the marginal effect estimate was <0.13 . Comparisons by age (<16 , $16-65$, ≥ 65 years) and ICS dose (<1000 μg , ≥ 1000 μg) were additionally performed.

Results Of the patients co-prescribed the licensed Volumatic spacer ($n=155$), 29.9% reported oral candidiasis, compared to 27.7% of patients co-prescribed the unlicensed Aerochamber device ($n=385$, $p=0.622$). The marginal effect estimate was -0.043 (95%CI -0.133 , 0.047) and the Aerochamber was determined to be non-inferior to the Volumatic spacer. In terms of the total number of reported AEs, there were no significant differences for the main population (≤ 65 years) ($p=0.797$), $16-65$ years ($p=0.875$), <16 years ($p=0.687$), ≥ 65 years ($p=0.425$), high dose ($p=0.084$) and low dose ($p=0.443$) groups between those co-prescribed a Volumatic or an Aerochamber spacer.

Conclusion Co-prescription of the unlicensed Aerochamber spacer with non-EF BDP asthma therapy, in recommended patient groups, does not increase the risk of developing oral candidiasis or other ICS-related AEs, as compared to co-prescription of the licensed, Volumatic device.

REFERENCE

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P204 PREVALENCE OF ANXIETY AND DEPRESSION IN PATIENTS WITH SEVERE ASTHMA

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Introduction Anxiety and depression correlate with poor asthma control. There is a cyclical relationship: poor asthma control increasing likelihood of emotional distress, which in turn reduces patient adherence and healthcare utilisation. In this study we assessed quality of life and the prevalence of depression and anxiety in patients with severe asthma.

Methods 55 patients on step 4-5 therapy attending the severe asthma clinic at North Manchester General Hospital, completed two questionnaires anonymously: Hospital Anxiety and Depression Scale (HADS) and Health Survey Short-Form (SF-36). The HADS yields scores for anxiety and depression with scores greater than or equal to 8/21 in either domain considered clinically significant. SF-36 scores were transformed into composite mental and physical component scores, with scores <40 considered poor.

Results 49% and 31% of the sample had clinically significant anxiety and depression respectively. 33% had scores falling in the moderate-severe range for anxiety and/or depression with 5 patients having co-existing moderate-severe anxiety and depression. Patients reported poor quality of life relating to their physical (50%) and mental health (33%).

Conclusion The prevalence of anxiety in patients with severe asthma is significantly higher than in patients with chronic respiratory disorders (49% cf. 29%)¹ and is linked to poorer health and quality of life outcomes.

Extrapolating from our findings, we expect a third of patients in the asthma service (≥ 500 patients seen per year including 125 new referrals), to benefit from individual psychological support. NICE guidance recommends each should receive initial assessment and 12 therapy sessions (cognitive behavioural therapy/psychodynamic psychotherapies).

The position paper by the Kings Fund² argued that mental health services should be delivered as part of an integrated approach to health. This study supports a clear role for an integrated physical health clinical psychology service as part of routine care for patients with severe asthma.

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Abstract P204 Table 1

HADS n=55	Anxiety (HADS-A)	Depression (HADS-D)
Non-case (0-7)	28	38
Mild (8-10)	11	10
Moderate (11-15)	13	7
Severe (16-21)	3	0
SF-36 n=52*	Physical component	Mental component
Non-case (≥ 40)	26	35
Poor quality of life range (<40)	26	17

*Incomplete data in 3 cases