S12 EFFICACY OF BRONCHIAL THERMOPLASTY IN CLINICAL PRACTICE USING THE BRITISH THORACIC SOCIETY UK DIFFICULT ASTHMA REGISTRY AND HOSPITAL EPISODE STATISTICS

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Introduction and objectives NICE Guidance encourages further research on the efficacy of bronchial thermoplasty (BT). This study uses data from the British Thoracic Society (BTS) UK Difficult Asthma Registry (DAR) and the Hospital Episodes Statistics (HES) database to assess aspects of efficacy and compares these with previous trials.

Methods Lung function (FEV_1), quality of life (AQLQ), rescue steroid use, healthcare visits and days lost from work/school were compared at BT baseline and 12 month follow-up in patients for whom DAR data were available. In calculating annualised figures, baseline data were assumed to represent 12 months pre-BT, and 12 month follow-up data were scaled according to the time period that the follow-up represented.

Significance testing for differences in FEV_1 and AQLQ used a paired t-test. Differences in event counts were tested using non-parametric bootstrap hypothesis tests.

HES was searched for BT episodes from 1st April 2011 to 31st January 2015. An anonymised matching technique was used to link patients in HES and DAR, and for those whom sufficient time had elapsed since BT, HES A&E attendances were compared in the 12 months pre-BT and the 12 months starting from 30 days post-BT (to exclude any transient increases).

Results 31 patients had 12 month follow-ups in DAR, enabling comparison with BT baseline where data were available. All outcomes from DAR showed improvement at 12 month follow-up compared to BT baseline (Table 1). The mean improvement in AQLQ score (0.92) was smaller than that reported in AIR2 (1.35; n = 190), AIR (1.3; n = 52) and RISA (1.53; n = 15) trials.

From HES, there were 24 A&E attendances (in 5/12 patients) in the 12 months pre-treatment and 15 A&E attendances (in 6/12 patients) in the 12 months post-treatment.

Conclusion To date, efficacy outcomes appear consistent with those observed in previous clinical trials, with a smaller, but statistically significant, improvement in AQLQ score. The reduction in unscheduled healthcare visits and days lost from work/school also reached statistical significance. Although the median number of A&E attendances increased in the 12 patients studied, the annual rate of A&E attendances per patient reduced from 2 to 1.25.

Abstract S12 Table 1 Summary of efficacy outcomes

	BT baseline	12 month follow-up	n	Significance
FEV_1 (DAR)	71.62 ± 19.95	79.14 ± 23.18	21	p = 0.051
AQLQ (DAR)	3.88 ± 1.15	4.80 ± 1.24	13	p = 0.002
Rescue steroid courses (annualised, DAR)	3.0 [0.0–10.0]	1.99 [0.0–14.04]	22	p = 0.236
Unscheduled healthcare visits (annualised, DAR)	4.0 [0.0–15.0]	2.65 [0.0–8.94]	20	p = 0.039
Hospital admissions (annualised, DAR)	2.0 [0.0–6.0]	0.0 [0.0–11.23]	23	p = 0.277
Days lost from work/school (annualised, DAR)	0.0 [0.0–35.0]	0.0 [0.0–0.0]	11	p = 0.013
A&E (all cause) attendances (annualised, HES)	2 [1–10]	2.5 [1–4]	12	p = 0.159

Values reported asmean ± SD or median [min-max]]; $p < 0.05$ for statistical significance

Paediatrics: early life influences on lung health

S13 EARLY PERSISTENT CHILDHOOD WHEEZE IS A RISK FOR MORE TROUBLESOME YOUNG ADULT ASTHMA

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Background Until recently being a wheezy infant was not felt to confer significant respiratory health risks in later life. Using the Isle of Wight Birth Cohort (IOWBC) we assessed the association of persistent childhood wheeze with young adult lung function, wheezing status/morbidity, allergic comorbidity and smoking.

Methods The Isle of Wight Birth Cohort (n = 1,456) was reviewed at 1, 2, 4, 10 and 18-years with recording of current wheeze at each visit. At 10-years, 4 separate childhood wheeze phenotypes were defined. Those who wheezed in the first 4-years of life and at 10-years were labelled Persistent-Wheezers (PW). The outcome of PW was then assessed at 18-years to determine the effects of early life persistent wheeze on adult lung health.

Results Wheezing occurred in 57.7% PW at 18-years. Asthma prevalence in PW fell from 76.0% to 58.2% over adolescence and PW comprised 38% of currently diagnosed asthma at 18-years. PW had significantly impaired lung function at 18-years compared to Non-Wheezers (NW) who never wheezed in the 1st decade of life. This included impaired FEV1, FEV1/FVC ratio and FEF25–75 along with significantly elevated bronchodilator response (BDR), bronchial hyperresponsiveness (BHR), exhaled Nitric Oxide (FeNO) plus significantly reduced gain in FEF 25–75 over adolescence (Table 1).