exacerbations requiring oral steroids (OR per genotypic step 1.19; p = 0.008).

Conclusions Analysis of these four SNPs could enable clinicians to identify patients at higher risk of a severe asthma phenotype, potentially helping tailor strategies for improved asthma control.

*S14- BTS Medical Student Award Winner

S15 MEASURING BRONCHODILATOR RESPONSE BY INTERRUPTER TECHNIQUE TO PREDICT RESPONSE TO INHALED STEROID THERAPY IN WHEEZY PRESCHOOL CHILDREN

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Managing recurrent wheezing in preschool children is problematic, with conflicting evidence on the effectiveness of asthma therapy. One reason is the heterogeneous nature of preschool wheeze: distinguishing "transient viral wheeze" from asthma at presentation is currently impossible. Bronchodilator response (BDR) measured by interrupter resistance (Rint) is greater in preschool children with diagnosed asthma than in healthy controls, but the usefulness of Rint in clinical practice has not been studied. We aimed to assess whether measuring BDR using Rint can predict clinical response to inhaled corticosteroids (ICS).

We studied children aged 2 years to 1. Response to ICS was defined as reduction in daily symptom score of at least 0.26.[2] Association between BDR and ICS response was assessed using chi-square test. We also assessed the relationship between measured BDR and the caregiver's assessment.

121 children were recruited, 59 completed the full study (27 withdrew, 10 were unable to perform Rint, 18 failed to meet 4w symptom threshold, 7 commenced ICS or Montelukast by clinician before 4w). Positive BDR at baseline was demonstrated by 33 children, and was significantly associated with a clinical response to ICS ($p < 0.05$). There was no relationship between objective BDR and caregiver's rating of bronchodilator efficacy.

Our findings suggest that measuring BDR using Rint may help in making pragmatic decisions on commencing asthma preventer therapy in wheezy preschool children. Further work is needed to assess whether Rint BDR measurement may have the potential to distinguish those with transient wheeze from those with asthma.

REFERENCES

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S16 OUTCOMES OF MULTIPLE TRIGGER WHEEZE AND EXCLUSIVE VIRAL WHEEZE IN EARLY CHILDHOOD: A COMPARISON ACROSS TWO POPULATION COHORTS

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Introduction Early childhood wheeze has been classified according to triggers; exclusive viral wheeze (EVW) and multiple trigger wheeze (MTW). It has been proposed that these phenotypes differ in their aetiology, severity and prognosis.

Objectives To examine the prevalence and symptom severity of EVW and MTW in 2–6 year olds. To evaluate the stability of these phenotypes over time, and their association with later wheeze.

Method In two longitudinal birth cohorts comprising 18,362 individuals, data on respiratory symptoms were collected at age 2, 4 and 6 years. Parent-reported triggers were used to classify wheeze as EVW or MTW for each 2-year period. Logistic regression analysis was used to estimate odds ratios for current wheeze and relative risk ratios for wheeze phenotypes versus no wheeze, at follow-up compared with baseline.

Results At 2 years 17.6% and 22.6% (cohorts 1 and 2 respectively) had wheeze, of which 55.2% and 56.3% had MTW. At 6 years 69.7% and 75.7% of children with wheeze had MTW.

Among children with wheeze at baseline, 58–76% with EVW and 46–67% with MTW were in remission 2 years later (cohort 1) and 14–20% and 4–11% (cohort 2).

MTW had greater reported symptom-severity at all timepoints compared with EVW.

When adjusted for symptom-severity, children with EVW at baseline had relative risk ratios (RRR) of 2.9–7.4 and 4.1–15.5 (cohorts 1 and 2 respectively) for EVW and RRR 1.7–2.9 and 1.6–4.0 for MTW at follow-up. Children with MTW at baseline had RRR of 3.1–6.2 in cohort 1 and 3.6–15.6 in cohort 2 for MTW and 1.1–2.7 and 1.4–7.0 respectively for EVW at follow-up.

Conclusions When adjusted for symptom severity, wheezing phenotypes based on reported triggers remained stable between 2–6 years of age. Symptom-severity may be a more important determinant than triggers of future wheeze classification in young children.

S17 DO PRE-SCHOOL LUNG VENTILATION SCANS PREDICT OUTCOME BY 6 YEARS OF AGE IN CHILDREN WITH CYSTIC FIBROSIS (CF)?

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Introduction and objectives Progressive respiratory disease accounts for most of the mortality and morbidity in CF. Identification of early lung disease is imperative to recognise young patients who are at high risk of developing future lung damage. The London CF collaboration has shown that infant pulmonary function at one and at two years is essentially normal, and one year HRCT has mild abnormalities only, so new markers need to be identified. We have used ventilation scans (VS) at the CF annual assessment in infants too young to perform standard pulmonary function tests; VS are more sensitive than chest radiography, and have been used to guide immediate management. We hypothesised that an abnormal pre-school lung VS predicted worse spirometry by age six years in CF children.

Methods Data from children born after 2000 under the care of the RBH were retrieved from hospital databases and Port CF. We recorded demographics (gender, age, CFTR genotype,