

P178 CHILDHOOD ASTHMA MANAGEMENT IN PRIMARY CARE: IMPLEMENTATION OF NITRIC OXIDE AND SPIROMETRY (CHAMPIONS) STUDY. PRELIMINARY FINDINGS

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Introduction Despite the common nature of asthma there is no gold standard test for diagnosis. Both under- and over-diagnosis of childhood asthma in primary care have been reported but there is no UK data.^{1,2} Diagnostic algorithms including objective tests have been proposed but not implemented following a recent NICE consultation. Concerns regarding efficacy and additional resources needed in primary care to provide these tests have delayed implementation.

Aims

- Evaluate practice based barriers to spirometry and exhaled nitric oxide (eNO) testing in children aged 5–16 years
- Examine how training impacts on the utilisation of objective tests on asthma diagnosis

Methods Currently 3 GP surgeries of different sizes and demographics participate in this 2-year project.

Initial face-to-face (F2F) meetings and questionnaires are conducted at each practice to identify barriers to implementation. Paediatric spirometry and eNO training is provided to practice staff (F2F theory session plus practical supervision).

All children on the practice asthma register AND those who received asthma medications within the last 12 months (but not on register) are invited for review.

Data collection (medications, exacerbations, asthma diagnosis etc.) and quality of life questionnaires are conducted at baseline and then again at 6 months by post and repeat review of electronic records

Results Recruitment commenced on 01/06/2016.

To date, nursing staff at two practices have received training and 10 children (5–15 years) have been recruited (11 eligible) in the course of 3 asthma review clinics. Spirometry and eNO were successful in 8 of these children.

Practice staff have expressed concerns regarding funding, additional clinic time and staff training as the main barriers against implementation.

Conclusions Our early data suggests that providing spirometry and eNO for children in general practice is achievable with our training package. Both the training package and clinic structure are being refined to improve time and cost-efficiency.

This study (which when complete will contain a health economic analysis) will provide important evidence to inform NHS decision makers and primary care stakeholders on the usefulness of objective testing in children diagnosed and/or under investigation for asthma in general practice.

REFERENCES

- 1 *Br J Gen Pract* 2016;**66**(644):e152–7.
- 2 *BMJ* 1998;**316**:118–124.

P179 ANTECEDENTS OF ASTHMA ADMISSIONS IN CHILDREN: A WHOLE POPULATION LINKAGE STUDY

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Introduction Asthma is a complex condition where early respiratory infections are implicated in causation. However, the literature is not always supportive of the paradigm that early respiratory infection increases the risk for later asthma. Here, we test the hypothesis that hospital admission with bronchiolitis or lower respiratory tract infection (LRTI) before age two is associated with increased risk for an asthma admission after two years of age.

Method Details of all paediatric admissions to Scottish hospitals 2000–2013 were obtained. Admissions with bronchiolitis, LRTI and asthma were identified. Each individual had a unique identifier which allowed linkage of admissions.

Results There were 329211 admissions, including 28856 with bronchiolitis, 8558 with LRTI and 14734 with asthma. 2.7% of those with a bronchiolitis admission and 3.8% with a LRTI admission had a later asthma admission (see Table 1). Compared to zero previous bronchiolitis admissions, one admission was associated with a reduced risk for asthma admission (odds ratio [OR] 0.71 [95% CI: 0.65, 0.77]) but this risk increased after two bronchiolitis admissions (1.19 [95% CI: 0.99, 1.41]) and after ≥3 admissions (OR 1.52 [95% CI: 1.11, 2.08]). One prior LRTI admission was associated with a borderline increased OR for a later asthma admission (1.12 [95% CI: 0.99, 1.26]) compared to no admissions, and the OR after two previous admissions was 1.49 ([95% CI: 1.05, 2.13]). HDU admission with bronchiolitis or LRTI was not associated with increased risk of later asthma admission.

Conclusion The relationship between early respiratory infections requiring hospitalisation, and later asthma admissions is complex. There is no consistent evidence that hospitalisation with respiratory infections in early life is causally linked to risk of later asthma admissions. However, repeated hospitalizations with infections may be linked to later asthma admissions by reverse causation.

Abstract P179 Table 1 Admission with respiratory tract infections before two years of age and later asthma admission

		Number of bronchiolitis admission <2 years				Number of LRTI admission <2 years			
		0	1	2	≥3	0	1	2	≥3
Any asthma admission ≥ 2 years	Yes	13,949 (95%)	609 (4%)	135 (1%)	41 (0.3%)	14,406 (98%)	290 (2%)	32 (0.2%)	6 (0.0%)
	No	286,342 (91%)	24,250 (8%)	3,146 (1%)	739 (0.2%)	306,237 (97%)	7,470 (2%)	608 (0.2%)	162 (0.1%)