

First trimester fetal size and prescribed asthma medication at fifteen years of age

On line supplement

METHODS

Characteristics of participants relative to the general population

We have previously described that 74% of those invited to participate were enrolled and that participants were mostly representative of the general population although they were slightly older (29.6 versus 29.1 years), had a lower prevalence of smoking (19% versus 24%) and more likely to have a partner with a non-manual occupation (46% versus 44%) [1].

Questions asked at 15 years

The questionnaire was designed to be completed by the participant. Wheeze was defined as an affirmative response to the question “have you had wheezing or whistling in the chest in the last 12 months?” Asthma was defined as a positive response to the questions “have you ever suffered from asthma?”, “was this confirmed by a doctor?” and “have you had asthma in the last 12 months?” Participants were also asked “have you been prescribed medicines/inhalers for asthma in the last 12months?”. Smoking exposure at 15 years was ascertained from a positive response to the question “Does anyone smoke in the house in which you spend the majority of your time?”

Gestational accuracy and reproducibility of fetal measurements

Gestation was determined from the date of the maternal last menstrual period (LMP) unless gestation by CRL was >14 days different to LMP, in which case the gestation by CRL was used. The apparatus used for fetal ultrasound measurements have been previously described [2,3] and inter operator variability for first trimester measurements is 0.89-0.94 (expressed as intraclass correlation coefficients)[4] and for second trimesters is typically 0.75-0.85 (expressed as percentage agreement)[5].

Prescribing Information Service

Asthma medications (as coded in the British National Formulary, version 69, March 2015-Sept 2015) included short acting beta agonists (3.1.1 including salbutamol and turbutaline sulfate), inhaled

corticosteroids (3.2 including budesonide, beclomethasone dipropionate, ciclesonide, fluticasone and mometasone), long acting beta agonists (3.1.1, including salmeterol, formoterol), leukotriene receptor antagonists (3.3.2 including montelukast and zafirlukast) and theophylline (3.1.3). Prescribing for eczema medications including topical emollients and barrier preparations (13.2 an extensive list of preparations), corticosteroids (13.4 including hydrocortisone, beclomethasone dipropionate, betamethasone esters, clobetasol propionate and clobetasol butyrate), oral retinoids (13.5.1 including ichthammol and alitretinoin) was also determined for cohort members.

Methodology for spirometry and skin prick reactivity

Spirometry was measured at ages five, ten and fifteen years using the same apparatus with visual incentive (21/20 Vitalograph, Bucks, UK) in accordance with international guidelines[6] and expressed as z score standardised against an international reference[7]. The skin prick test was used to determine skin prick reactivity to common allergens [8]. Reactivity to house dust mite, cat, timothy grass and egg was determined at all three assessments and to dog and peanut at ten years of age. Positive and negative controls were used. All allergens and controls provided by ALK Abello (Northants, UK). Atopy was defined as a weal with a maximum diameter of ≥ 3 mm to any allergen or in cases of dermatographism, a weal greater than the positive control.

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