

# Lucina



The Senning atrial switch operation for transposition of the great arteries was introduced in 1958 and the Mustard procedure a few years later. Since the 1980s these operations have been largely replaced by the arterial switch procedure. Nevertheless, there are many people who have had the atrial switch operations and the long term outcomes are still of great interest. In Barcelona (*Heart* 2005;**91**:652–6) 137 patients were followed up for an average of almost 17 years. Late mortality was 5%, many of the deaths being sudden. The occurrence of supraventricular tachyarrhythmias and a poor cardiac functional class were both associated with a poorer prognosis. Most patients, however, (96%) had good cardiac function (New York Heart Association functional class I or II) during follow up. Only 5% of patients needed reintervention and only 15% had right ventricular systolic dysfunction. The long term results of atrial switch procedures are good but might be improved by better management of arrhythmias and better detection of right ventricular dysfunction.

There is epidemiological evidence of genetic factors in the aetiology of chronic inflammatory bowel disease (CIBD) and the first CIBD susceptibility gene (NOD2/CARD15) has been identified. Researchers in France (*Gut* 2005;**54**:357–63) have looked for environmental risk factors in children with CIBD. The study included 222 children with Crohn's disease, 60 with ulcerative colitis, and 282 controls matched for age, sex, and place of residence. They found that the risk of Crohn's disease was quadrupled with a family history of CIBD or a history of BCG vaccination, and doubled with a history of breast feeding or eczema. Regular drinking of tap water was protective (44% risk reduction). Risk factors for ulcerative colitis included family history of CIBD (OR 12.5), a variety of diseases during pregnancy (OR 8.9), and bedroom sharing (OR 7.1). Appendicectomy reduced the risk by 70%. It seems difficult to formulate any general hypothesis from these findings.

Children with polyarticular juvenile idiopathic arthritis (JIA) may need prompt disease-modifying treatment because they are at risk of early disease progression. In Rochester, Minnesota (*Annals of Rheumatic Diseases* 2005;**64**:491–3) 13 children (median age 10.7 years, range 2.5–15.9 years) with newly diagnosed polyarticular JIA had x rays of hands and wrists initially and after an average of 13.3 months (range 8.3 to 24.9 months). Evidence of disease progression was seen in six of the

repeat x rays (new cortical erosions in four, increased number of erosions in one, and new joint space narrowing in one). The six children with radiographic progression all had erosions or joint space narrowing on the first x ray whereas only one of the seven without progression had such changes. In addition, those with radiographic progression were older (median age 12.6 vs 9.2 years), started disease-modifying treatment later (7.5 vs 1.6 months after diagnosis), and had their repeat x ray later (17.4 vs 12 months after diagnosis). Larger studies are needed.

Persistent wheezing in preschool children may be associated with frequent maternal use of household chemicals. As part of the Avon Longitudinal Study of Parents and Children 7019 pregnant mothers completed questionnaires about chemical exposure during the pregnancy and also returned completed questionnaires about their children's wheezing patterns at 6, 18, 30, and 42 months (*Thorax* 2005;**60**:45–9). Exposure during pregnancy was ascertained for eleven types of household product (disinfectant, bleach, carpet cleaner, window cleaner, dry cleaning fluid, aerosols, turpentine/white spirit, air fresheners, paint stripper, paint or varnish, and pesticides/insect killers) and a total chemical burden (TCB) score was calculated (possible range 0–55). A high maternal TCB score in pregnancy was associated with increased risk of persistent wheezing in children up to the age of 42 months. Each unit increase in TCB score was associated with a 6% increase in risk of persistent wheezing and the children whose mothers had high TCB scores (>90<sup>th</sup> centile) were 2.3 times more likely to have persistent wheezing than were the children of mothers with low scores (<10<sup>th</sup> centile). There was no association between TCB scores and risk of transient early wheeze or late onset wheeze. No single household product particularly associated with persistent wheeze could be identified and the effects of antenatal and postnatal exposure could not be separated; women's TCB scores 8 months after delivery were similar to their scores in pregnancy.

Children with severe ocular refractive errors may be at high risk of having retinal pathology. In London 123 children (mean age 7 years) with reduced vision were referred for electrophysiological testing (*Br J Ophthalmol* 2005;**89**:484–8). Fifteen had high myopia, 19 low myopia, 35 emmetropia (normal refraction), 44 low hyperopia, and 10 high hyperopia. The prevalence of electroretinogram (ERG) abnormalities in these groups respectively

was 53%, 32%, 20%, 23%, and 50%. Thus evidence of retinal pathology was found in half of the children with severe refractive error, a quarter of children with mild refractive error, and a fifth of children with normal refraction. Eighteen of 35 children with high astigmatism, and 17 of 43 with nystagmus, had an abnormal ERG. Children with a high degree of refractive error or astigmatism should be considered for electrophysiological testing of retinal function. The retina is probably involved in eye growth and the development of normal refraction.

In 1993 researchers in Western Australia reported that repeated ultrasound exposure during pregnancy might be associated with restricted foetal growth. They have now followed up the children (who had five studies of ultrasound imaging and umbilical artery Doppler flow velocity waveform between 18 and 38 weeks gestation) at 1, 2, 3, 5, and 8 years of age (*Lancet* 2004;**364**:2038–44). They found no evidence that the repeated ultrasound exposures had any effect on postnatal growth or intellectual, behavioural, or speech and language development. They intend to assess handedness when the children are 10 years old as previous studies have suggested that ultrasound exposure during foetal life might increase the proportion of boys who are not right handed.

A satisfactory level of maternal blood pressure is important for foetal wellbeing. A study in London (*BMJ* 2004;**329**:1312–4) has shown that the foetus may suffer if maternal diastolic blood pressure is too high or too low. Data were analysed for 210 814 singleton pregnancies in nulliparous women with no previous hypertension or persistent proteinuria. Mean diastolic blood pressure was 66.6 mm Hg in the first trimester and 66.3 mm Hg in the second trimester. After 34 weeks it increased, reaching 68.4 mm Hg by term. For babies born after 45 weeks the curve of birthweight against highest recorded diastolic blood pressure was inverted J-shaped with maximum birthweights at highest diastolic pressures of 70–80 mm Hg. The curve of perinatal mortality against highest diastolic pressure was U shaped with the lowest perinatal mortality at a highest diastolic pressure of 80 mm Hg. It was calculated that around 11% of perinatal deaths could be attributed to maternal diastolic pressures above or below the optimum of 82.7 mm Hg derived from a mathematical model. In over 90% of cases the diastolic pressure was too low rather than too high (usually in the 70s).



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