Atoms

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The Barker Hypothesis revisited

In 1986 David Barker and Clive Osmond published their seminal paper on the relationship between smaller size at birth and the subsequent development of ischaemic heart disease.[1] This paper gave birth to the so-called "Barker hypothesis" – that cardiovascular disease and other medical problems such as metabolic disease or osteoporosis may have their origins in utero and early-life. This phenomenon was recently reviewed in the *New England Journal of Medicine*.[2] The relevant epidemiological data and clinical observations are discussed, followed by a description of developmental plasticity and the influence of the genome and epigenome on phenotype. In this issue of *ADC*, Terry Dwyer and colleagues, further define some aspects of the Barker hypothesis by delineating the role of certain alleles (those that govern corticotropin-releasing hormone) in modifying the relationship between birth weight and adolescent systolic blood pressure. The relationship between the in utero environment and various outcomes was first described prior to the genetic revolution—it is not surprising that genes will play a role in the expression of these events during the life course. ***See page 760***

Urinary opioid peptides in children with autism

It is widely accepted that about 1 in every 200 children develop autism or autistic spectral disorder. Whether this is an absolute increase over the past two decades, or is in part due to some diagnostic recoding remains debatable. However, because of the life long consequences of this disorder, trying to identify a biologic marker is the subject of a great deal of investigation. Hiliary Cass and colleagues determined the level of exogenous and endogenous peptides in the urine of children with and without autism. They found no significant differences in the urinary profiles of the peptides. They conclude that "opioid peptides can neither serve as a biomedical marker for autism nor be employed to predict or monitor response to a casein- and gluten-free diet." ***See page 745***

Paediatric surveillance units

I have praised the British Paediatric Surveillance Unit (PSU) in these pages many times. As the grandfather of PSUs it has produced many important studies. In this issue is a report from the Australian PSU on fetal alcohol syndrome. The report is accompanied by a perspective by Professor Albert Chudley from Winnipeg. As the first prospective national assessment of fetal alcohol syndrome (FAS), these authors are to be congratulated for providing outstanding epidemiologic and clinical data. They detail birth, growth, neurological, behavioural and emotional issues, and maternal and family characteristics of children with FAS. One of their most troubling findings is that the median age of diagnosis of the 92 cases was 3.3 years, and only 63% were diagnosed by age 5 – this despite numerous medical problems. ***See pages 721 and 732***

Long-term effects of community acquired pneumonia

A study from Newcastle upon Tyne reminds us of the consequences of community acquired pneumonia (CAP) that result in hospitalisation. In a study of 103 children and 248 controls, assessed 5.6 years after admission, numerous abnormalities were detected in the cases, including abnormalities of lung function and chest shape. Persistent cough and doctor diagnosis of asthma were also significantly more common in children with a history of CAP. It remains possible that these children were more likely for biological, genetic or environmental reasons to acquire pneumonia, and that the pneumonia itself was not the cause of these abnormalities, but regardless the results suggest close follow-up of children with CAP is warranted. ***See page 755***

Reshaping a skull deformity

Archimedes is unique this month. Rather than just a summary of the data in tabular form (a review of seven published papers of helmet therapy in positional plagiocephaly by Singh and Wacogne) we also provide two additional editorials. Why all the discussion? First, with the advent of "back to sleep campaigns" around the world, an unintended side effect has occurred—positional plagiocephaly. This problem is important to parents. Second, the treatment is unclear and controversial. Third, the treatment is expensive and not always covered by health insurers. Lastly, paediatricians tend to have strong opinions about the use of helmets for this "cosmetic" problem, and our opinions likely influence how we present information to parents. ***See pages 805–10***

This month in *Fetal & Neonatal Edition*

- It is quite clear that smoking during pregnancy has numerous deleterious effects on newborns – what of second hand smoke? Leonardi-Bee and colleagues have reviewed the literature and produced a meta-analysis. ***See page fn133553***
- What is the best way to monitor oxygenation in preterm infants? Quine and Stenson from Edinburgh compared $TcPo_2$ with Spo_2. Their conclusion – Spo_2 monitoring was less effective than $TcPo_2$ monitoring. ***See page fn132282***
- The timing of the passage of meconium in preterm and term infants is often debated. In a study from The Netherlands, the passage of meconium in 198 infants of whom 32 were <30 weeks gestational age and 62 between 31 and 34 weeks gestational age, is carefully described. Their conclusion, passage of meconium is often delayed in preterm infants and is related to gestational age and morphine therapy. ***See page fn138024***

References

1. **Barker DJ,** Osmond C. Infant mortality, childhood nutrition, and ischaemic heart disease in England and Wales. *Lancet* 1986;**1**:1077–81.
2. **Gluckman PD,** Hanson MA, Cooper C, *et al*. Effect of in utero and early-life conditions on adult health and disease. *N Eng J Med* 2008;**359**:61–73.