Highlights from this issue

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TIME FROM FEVER ONSET AND DIAGNOSTIC ACCURACY OF C-REACTIVE PROTEIN

C-reactive protein (CRP) is widely used in the assessment of children with suspected bacterial infection although it is well known that the CRP obtained in the first 12 hours is of limited diagnostic value, at least for ruling out significant sepsis. Segal and colleagues report a prospective observational study of febrile children presenting to the emergency department (n= 373, of whom 103 had bacterial infection) looking at the diagnostic performance of CRP at different time points from fever onset. There is a considerable amount of data in the paper which is well worth working through. The optimal cut off of CRP suggesting bacterial infection increased with time from fever onset – 6mg/dl at >12 hours, 10.7 mg/dl at >24-48 hours, 12.6 mg/dl at >48 hours. Duration of fever mostly impacted on the ability of CRP to correctly rule out bacterial infection. In this cohort a CRP of 2mg/dl at <24 hours corresponded to a post test probability of bacterial infection of 10% whereas the same value at >24 hours reduced the risk to 2%. In essence the study reinforces the need to take into account the time from onset of fever when interpreting CRP and is a useful reminder that a low CRP taken within 24 hours of fever onset does not rule out significant bacterial infection. ***See page 974.***

RECENT ADVANCES IN THE MANAGEMENT OF CYSTIC FIBROSIS

The prognosis for cystic fibrosis has improved greatly over the last few decades. The treatment burden remains high with usually a combination of multiple oral and inhaled drugs as well as physiotherapy required on a daily basis. Why has the prognosis improved—there are many reasons. This excellent review discusses recent advances in the pathogenesis and the many new therapies which impact at different phases of disease development with the aim of increasing life expectancy and reducing treatment burden. The authors discuss in detail recent developments in CFTR gene therapy, CFTR protein modulation (including ribosomal read through drugs, potentiators, correctors), airway surface rehydration, mucolytics, anti-inflammatory agents and anti-infective treatments. Future challenges are discussed and like many chronic conditions there is a call for better clinical markers to assess disease progression and for more pragmatic clinical trials. There is the potential with increased use of small molecule drugs and gene therapy earlier to impact further on disease outcome long term. ***See page 1033.***

FOOD AND BEVERAGE CUES IN TELEVISION PROGRAMMING

One of the many factors that contribute to childhood obesity is sedentary behaviour such as watching television. Scully and colleagues explore the frequency and type of food and beverage placements in children's television programmes and adverts assessing food cues —a food or beverage cue is defined as a product being displayed within a food specific context with the potential to be consumed. Cues were coded by type of product—health or non healthy, product placement, product use, motivation, outcome and characters involved. Food and beverage cues accounted for 4.8% of the 82.5 hours studied. Unhealthy foods accounted for 47.5% of specified food cues, and sugar-sweetened beverages for 25% of specified beverage cues. Sweet snacks were the most frequent food cue (13.3%), followed by sweets/candy (11.4%). Tea/coffee was the most frequent beverage cue (13.5%), followed by sugar-sweetened beverages (13.0%). The outcome of the cue was positive in 32.6%, negative in 19.8%, and neutral in 47.5% of cases. It is interesting to think about this phenomenon when you next watch television and whether planners by regulating could better project healthy foods and beverages and impact on eating choices and health longer term. ***See page 979.***

ENVIRONMENTAL TOBACCO SMOKE AND THE RISK OF ALLERGIC SENSITISATION

It is well known that environmental tobacco smoke increases the risk of asthma. Feleszko and colleagues review the evidence for the impact of environmental tobacco smoke on allergic sensitisation in children. Based on data from 19 studies (24,000 children) the authors report increases in total IgE, increases in specific IgE (OR 1.12, 95% confidence interval 1–1.25) and skin prick test positivity (OR 1.15, 95% confidence interval 1.04 –1.28) with higher odds ratios in a subgroup analysis of children less than 7 years. Exposure to tobacco smoke is a potentially preventable risk factor for the development of allergic disease in childhood and one of many reasons why exposure of children to tobacco smoke should be limited. ***See page 985.***

RESEARCH IN PAEDIATRIC INTENSIVE CARE

Kanthimathinathan and colleagues review some of the dilemmas in undertaking research in paediatric intensive care. There have been many therapeutic advances although the evidence base remains poor. The authors helpfully discuss some of the trials that have been done, eg Fluid expansion as supportive therapy (FEAST) and their impact – fluid bolus' significantly increased 48 hour mortality. However the practicalities of research can be difficult and the authors discuss issues such as validity of informed consent, use of deferred consent, balancing risk versus benefit in a situation where there is a need for rapid therapeutic decision making and the methodological constraints of generating high quality evidence with low patient volumes. The importance of research by collaboration and in networks as the best strategy to improve the evidence base is emphasised. ***See page 1043.***

IN *F&N* THIS MONTH

Timely immunisation of premature infants against rotavirus in the neonatal intensive care unit

Rotavirus gastroenteritis is responsible for 14,000 admissions, 30,000 admissions and 91,000–133,000 general practice visits annually in England and Wales. Preterm infants are at increased risk and have a higher morbidity and complication rate if infected. Rotavirus immunisation (oral, live attenuated) was introduced in the UK in 2013 given at 2 and 3 months along with the routine schedule. Ladhani and colleagues discuss the safety and efficacy in term and preterm infants with no increase in risk of serious adverse effects, diarrhoea, irritability or fever in large placebo controlled studies in both groups. Although caution is advised in infants with a history of intussusception or malformation of the gastrointestinal tract that could predispose to intussusception these concerns are largely theoretical with recent data suggesting the vaccine is well tolerated even in infants with high output short bowel syndrome. One of the practical issues is timing – the vaccine needs to be given on time. In the preterm infant this may need to be prior to discharge in order to avoid the most vulnerable infants from not being protected with the risk of transmission to other infants in the neonatal unit being minimal.