

Atoms

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DRUG DOSING IN CHILDREN – A REVOLUTION IS COMING

Paediatric drug dosing requires attention to the weight of the child. Virtually every drug listed in *Medicines for Children* contains a reference to the appropriate dose for children expressed as mg/kg. Cranswick and Mulholland describe this current approach as procrustean. Their perspective and the original article by Schaaf and colleagues from South Africa, which describes the pharmacokinetics of isoniazid based upon age and specific genotype for acetylation, suggest the future – a time when virtually every drug that we prescribe for children will be based upon age, weight, gender, and genotype.

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HHV-6 AND -7: HOW OFTEN DO THEY CAUSE CONVULSION?

Conclusions based upon case series can be very misleading. In a study conducted through the British Paediatric Surveillance Unit, Ward and colleagues describe the relationship between human herpesvirus (HHV)-6 and HHV-7 infection and convulsions in hospitalised children. They found that 25 of 156 children aged 2–23 months with seizures and fever had primary infection with either one of these herpes viruses. Because of the way cases were identified, this report could leave us with the impression that HHV-6 and -7 infections are often associated with serious neurological disease. This would be incorrect. In a natural history study that was recently published, in which a group of 277 infants were identified at birth and followed for about 2 years, investigators found that of 130 who developed HHV-6 infection, 23% of 81 with a well-defined time of acquisition had roseola and 93% were symptomatic with mild illness, but no infant had a febrile seizure. These studies highlight the potential consequences of HHV infection, but also that conclusions can be strikingly different depending upon how cohorts are assembled and studies conducted. Beware generalisations from case series – be they prospective or retrospective.

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DEVELOPMENTAL DYSPLASIA OF THE HIP

Over the past two decades we have learned much about developmental dysplasia of the hip (DDH). First, the disorder was renamed – changing from congenital hip dislocation to DDH. It appears that about one quarter of the cases of DDH, despite a normal examination at birth, develop after the first month of life. Hence, vigilance is necessary to ensure detection following the neonatal period. Second, in addition to physical examination, ultrasound plays an important role in detection. Lowry and colleagues, from The National Maternity Hospital in Dublin, describe their experience using ultrasound at 8 weeks of age in infants at high risk (positive family history, breech presentation, persistent click) for DDH. Although it has been quite difficult to reach consensus on a screening programme to detect DDH, we must start with a good examination at birth, and repeat the examination at each visit during the first year of life, with an increasing emphasis on abduction of the hips. For children with hips that are truly dislocated, ultrasound is probably unnecessary. For children with hips that are dysplastic or the examination is equivocal, ultrasound, particularly at 8 weeks of age, may be helpful in making an accurate diagnosis.

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ENVIRONMENTAL HEALTH – AN EXPANDING AREA OF INQUIRY

The impact that the environment has on the health of children has been recognised for centuries, although, for example, it was not until the later half of the last century that the consequences of fetal exposure to alcohol, tobacco, and thalidomide were systematically described. The increase in allergic disease has led to renewed concerns about other potential environmental toxins, particularly those that may be in the home. In a review article, Lanphear and Bearer from Cincinnati Children's Hospital, discuss new aspects of environmental health, including biomarkers in clinical practice, biological matrices, and gene-environment interaction as it relates to environmental toxins. Although the environment has always been recognised as a threat to the health of children, our renewed interest in this field of inquiry should produce new data and hopefully a greater awareness of the varied types of potential toxins.

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USE OF A&E DEPARTMENTS – CAN WE UNDERSTAND IT?

One of the quality indicators for the “new” NHS is waiting time in A&E departments – the magic number is 4 hours. Selecting specific quality indicators may have unintended consequences; for example, it appears that admission rates in the UK have risen over the past 2–3 years, in part, because that is one way to ensure adherence with the 4-hour rule. A more effective approach to reducing waiting time is to reduce inappropriate use of the A&E. In a study from Bristol, Hendry and colleagues explore why parents seek care in the A&E. There appear to be few differences between parents who contact their GP prior to going to the A&E and those who do not. Their conclusion is consistent with the old adage “illness for the doctor, injury for the hospital.” What are the key elements in reducing use of A&E departments? First, we must educate parents about how to use the health care system – when should they seek care in an A&E and when should they call their GP. Second, 24-hour consultation with a health care provider must be available. Third, parents must be able to talk with a representative of the health care system in their language of preference. When parents call me at 11 pm for advice, I am sure that more parents seek care in our emergency department when I cannot speak with them in their own language. Lastly, beware of unintended consequences. In the US, A&E departments that are only for children and adolescents, with physicians trained in this specialty, are becoming far more common. They are open 24 hours a day and are usually clean, comfortable, and well staffed. For parents with a sick child, these are attractive places to go – so despite our hope that parents contact their primary care physicians first we have created a system in which it is efficient and effective for them to seek care outside of this relationship.

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REFERENCE

- 1 Zerr DM, Meier AS, Selke SS, *et al*. A population-based study of primary human herpesvirus 6 infection. *N Engl J Med* 2005;352:768–76.