**Editorial**

**Developing Services for Children with Cerebral Palsy**

Cerebral palsy is ‘an umbrella term covering a group of non-progressive, but often changing, motor impairment syndromes secondary to lesions or anomalies of the brain arising in the early stages of its development’. This definition is very helpful but a diagnosis of cerebral palsy can leave the aetiology, pathology, and prognosis undefined.

Classically aetiology is divided into prenatal, perinatal, and postnatal causes. The importance of different aetiologies varies by country. In the UK, with an overall prevalence of cerebral palsy of around 2/1000 neonatal survivors, the relative contribution of very low birthweight infants to the incidence of cerebral palsy has risen, as in other countries with intensive neonatal care like Australia. The improving survival of very low birthweight infants is becoming an important feature in countries establishing neonatal intensive care. Wang, et al. reported a prevalence of cerebral palsy of 13.6 per cent at 2 years of age among infants weighing less than 2000 g in Taiwan. In Saudi Arabia other important aetiological factors emerge including a family history of cerebral palsy and consanguinity. A clinic-based review in Nigeria found kernicterus to be the most common cause of cerebral palsy. Earlier studies in developing countries such as Uganda and India showed that postnatal factors such as meningitis and encephalitis were the most frequent causes. These continue to be important in India. In South Africa the percentage of postnatally acquired cerebral palsy varied by racial group from 13.2 to 36.1 per cent with the main causes being cerebral infections (particularly meningitis), cerebral trauma, and cerebrovascular accidents.

The fact that cerebral palsy is ‘non-progressive but often changing’ highlights the importance of following these children over a period of time. Neurodegenerative disorders are rare but can present with a cerebral palsy picture early in the disease. Gupta and Appleton have recently reviewed the clinical and laboratory tools necessary to differentiate cerebral palsy from degenerative conditions.

Because cerebral palsy, like hypertension, is an overarching or ‘umbrella’ diagnosis there are considerable problems in determining the epidemiology of the disease. In particular the terms ‘progressive’ and ‘early stages of development’ are open to differing interpretations. This leads to variation in the subjects included in the numerator in different studies. These are also problems in the denominator which centre around the issue of whether cerebral palsy is defined on pathological changes (such as periventricular leucomalacia) in infants who die early or on the findings of abnormal tone which occur much later. Clearly some infants with pathological changes suggestive of cerebral palsy die before the abnormalities of tone can be noted.

It is not surprising that there is insufficient data on the epidemiology of cerebral palsy in the developing world. A population-based study of neurological disorders in rural central Ethiopia had questionnaire responses from over 60 000 people. The incidence of cerebral palsy was 40/100 000 in the population under 14 years of age, less than the rate in the UK. It is possible that some cases were misclassified as ‘mental retardation’ or ‘hemiparesis of early childhood onset’. It is also likely that the mortality rate is high in these children. (A study from Bangladesh showed a mortality rate of nearly 9 per cent in children with cerebral palsy with an average age of 3 years and 3 months who were followed for 3 years.) In Kenya there was insufficient data to make any estimate of cerebral palsy prevalence rates.

The epidemiology of diseases like cerebral palsy is not a dry academic pursuit. Blair identified three key reasons to study trends in cerebral palsy: projections of future service requirements; evaluation of the quality of obstetric and perinatal care; and elucidating aetiology with a view to prevention. This Editorial will only discuss service development though the other issues are of enormous importance.

Children with cerebral palsy have associated difficulties in many systems. These have been well reviewed by Singhi and are summarized in Table 1. Guidelines on what constitutes good practice in assessing for these problems are published. Orthopaedic input includes surveillance of hips for subluxation and dislocation,
for scoliosis, and the management of other joint contractures. Surgical amelioration of spasticity is now possible with botulinum toxin, intrathecal baclofen, and dorsal root rhizotomy.

Clearly these technologies will not be available for most children with cerebral palsy for many years to come. However there are simpler options available. The importance of adequate nutrition is underlined in a paper from the Philippines. Bhatia and Joseph have emphasized the need for a comprehensive assessment in a child with cerebral palsy. In their review of 100 children in rural India, 82 per cent had one or more associated disabilities with visual defects being the most common (54 per cent). In 43 per cent of children at least one associated disability had not been recognized at referral.

Clarity on the burden of cerebral palsy and other disabilities in a community enables a rational assessment of the need for assessment and rehabilitation services. An evidence base for the western strategy of a professional multidisciplinary team supporting the family is difficult to gather. Community-based rehabilitation for and with people with disabilities has been proposed as a way forward by the United Nation agencies, but this needs to acknowledge the unique cultural, religious, social, and economic conditions of a locality to be effective. Mothers report that they most need practical support and advice on managing behavioural difficulties such as sleep problems, hyperactivity, temper tantrums, and toilet training. Families have to be central to successful service development.

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References
5. Wang ST, Wang CJ, Huang CC, Lin CH. Neurodevelopment of surviving infants at age two years, with a birth weight less than 2000 g and cared for in neonatal intensive care units (NICU)—results from a population-based longitudinal study in Taiwan. Puli Hthl 1998; 112: 331–36.
In this Issue

200 000 IU of Vitamin A for 2 days is confirmed as the regime of choice in severe measles

Rennie and Ron D’Souza (National Centre for Epidemiology and Population Health, The Australian National University, Canberra, Australia) have completed a systematic review of randomized controlled trials on the question of vitamin A dosage in measles. Outcome measures included mortality and pneumonia-specific mortality. The evidence supports the WHO and UNICEF recommendation of 200 000 IU on 2 days.

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Ocular toxocariasis is an important cause of a number of eye presentations in India

Workers at the All India Institute of Medical Sciences (Bijay Mirdha and Sudershan Khokar), investigated cases with presentations where toxocariasis was part of the differential diagnosis and tested for the presence of anti-Toxocara antibodies. Antibodies were present in 17 per cent of cases under the age of 15 years with none in the control group. The workers advocate laboratory testing of all clinically suspected cases.

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The rate of decline of CD4 cell values is the most reliable indicator of the progression of asymptomatic HIV disease

In a prospective study by D. Chattopadhya (AIDS Reference Laboratory, National Institute of Communicable Diseases, Delhi, India) and colleagues, predictors of HIV disease progression in the asymptomatic phase were sought. The rate of CD4 cell values was the most reliable indicator. However, other parameters such as DTH response, β-2 microglobulin and serum cytokine profile may also provide valuable predictive information.

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MMR adverse reaction rate identified in Saudi Arabia school campaign

In an observational study, Al-Mazrou and colleagues from the Ministry of Health, Riyadh, Kingdom of Saudi Arabia monitored the incidence of aseptic meningitis during a school campaign of over 2 million doses of vaccine. The incidence was one case per 295 000 doses given.

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Urinary tract infection remains a common event in severe protein energy malnutrition

In a prospective observational study, Adamu Rabasa and Dennis Shattima (Department of Paediatrics, University of Maiduguri, Nigeria) study the incidence of urinary tract infection identified by supra-pubic aspiration in 194 malnourished children. An incidence of 11.4 per cent was recorded. The most common bacteria was Escherichia coli. The authors recommend regular surveillance for urinary tract infections and monitoring of local antibiotic sensitivities.

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