What the teacher needs to know

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Perspective on the paper by de Louvois *et al* (see page 959)

To many paediatricians and parents the realisation that a child has escaped major physical disability following a range of insults in infancy is greeted with a huge sense of relief. However, there is accumulating evidence that subtle effects of a wide range of insults to the developing brain, such as prematurity, intrapartum hypoxia and, as described in the accompanying paper by de Louvois *et al*, meningitis, have consequences well beyond the immediate recovery period. This recognition brings with it broad implications for educational services, including the need for teachers to be aware that a range of illnesses, from which a child may recover well, have important educational sequelae which require careful longitudinal assessment and intervention.

The focus of the accompanying paper is a national cohort of children who had been identified with meningitis from any cause in infancy during 1985–87. These children had been evaluated at 5 years of age and in 16% moderate or severe disability was identified, compared to 1.5% in a population of children who had not had meningitis.¹ Generally, early school age assessments are considered a “gold-standard” as important issues should be identifiable by then. The current paper clearly indicates that this is not so, as children without identified early disability who have had meningitis are less likely to be entered for national examinations, are less likely to pass those examinations and have a high rate of special educational needs. The message is thus very clear: children who contract meningitis during infancy may recover and there may be no physical sequelae, but the meningitis does have an effect on cognitive development in a high proportion of children with implications for educational attainment and need for careful assessment and support.

In this there are parallels with other, particularly perinatal, illnesses. Neonatal encephalopathy following intrapartum hypoxia is one such example. Generally, those children without cerebral palsy have been considered to have “normal” outcomes, but Robertson and Finer carried out several studies in the late 1970s and early 1980s which indicated that there was

significant subtle morbidity among these survivors with impact on their readiness to go to school.^{2–3} Of interest is their choice of comparison children: a randomly selected group performed as expected, but a group of non-encephalopathic NICU admissions had cognitive scores similar to those with the mildest encephalopathy. Other groups of children identified by perinatal illness (eg, surgery⁴) also have poorer cognitive performance compared to children without perinatal problems. We have demonstrated a very significant effect on school performance among children with moderate neonatal encephalopathy, showing a “dose-dependent” effect of hypoxia, which also has very important implications for careful educational assessment and intervention.⁵

The effect of perinatal illness on long-term cognitive development is particularly apparent in children born very preterm. Even in the absence of neuro-sensory disability, very preterm children are at risk for cognitive impairments, learning difficulties and a range of subtle neuropsychological deficits later in life.⁶ Population-based studies show that very preterm children – even those who appear otherwise healthy and free of disability – have significantly poorer cognitive and educational outcomes than matched classmates.⁷ There appears to be a dose-dependent effect of gestation below 33 weeks, with a linear decrement in IQ scores in middle childhood,⁸ and many studies have demonstrated poorer outcomes for boys than girls. Additional attentional problems, executive dysfunctions and impaired visuo-motor skills contribute to the range of higher prevalence/lower severity impairments,⁹ and may account for the increased academic failure and greater resource dependency observed in this population,¹⁰ even in those attending mainstream schools.

The long-term effects of serious illness during the perinatal period and in infancy may only become evident during formal schooling when the increasingly complex demands of the academic environment serve to exacerbate existing conditions or highlight emerging sequelae. Given the prevalence of these “hidden disabilities”, it is imperative that teachers are aware of

the multiple problems faced by these children. However, many parents are reticent to inform teachers that their child had significant early illness, be it meningitis or very preterm delivery, because this may single out their child for different treatment. Early identification of these problems by careful assessment and intervention and subsequent longitudinal monitoring throughout the period of formal education may be the best route to minimise their impact on the life chances for this group of children. It is also clear that studies to improve short-term outcome in conditions such as meningitis cannot simply end with the reporting of serious disability but must continue to follow children to determine whether there is an additional effect on these important outcomes.

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