Outcome studies

Editorial

Five papers in this issue report on outcome studies, all of which follow up children who presented with illnesses in the neonatal period. The studies by Ruggieri et al.[1] and Watanabe et al.[2] are principally concerned with the outcome of a specific condition. The former examines spinal-cord injury and the latter, convulsions. Both are chiefly concerned with how the seizures progress and how the specific signs relate to neurological findings. Both mention general functional outcomes – Watanabe discusses psychomotor delay, while Ruggieri concentrates on learning and behaviour disorders – but neither explains how they were measured.

The other three papers are directly concerned with functional outcomes. Iklé et al.[3] used a traditional cognitive test, the Wechsler Intelligence Scale for Children, to assess outcome and showed that even when cognitive function appears to be well preserved, variability and difficulties with one or more subtests are more common than in the criterion referenced population. However, this variability did not necessarily imply the children's function was lower than average. Indeed, there was a significant finding of two children (of course, the *N* is small) who had very high subtest scores.

Harvey et al.[4] used executive function tests. The Peabody Picture Vocabulary Test was the cognitive test used to control for general cognition within their control group. Parental and teacher questionnaires were also used. In addition, the McCarthy Scales were administered to the study children. When these tests were first mentioned (some years back) I assumed they examined decision-making processes. This interested me because some children with disabilities who seem to have a reasonable cognitive function, in my clinical experience, find it difficult to make decisions. However, these tests extend the area of functions which the psychologist examines but do not tap into decision-making. Therefore, I always feel that their grouping under the term executive function is an odd one.

The fifth study looks at a very specific function. Houliston et al.[5] produced an elegant questionnaire to examine visual function and, in particular, cortical visual loss in children with generally intact visual pathways. They also assessed general cognitive levels, although the results again are not fully reported.

The authors very properly state their reasons for using particular tests. Houliston et al. studied children with hydrocephalus; the association with visual problems is well known. Iklé et al. were concerned with the straightforward outcome for survivors of extracorporeal membrane oxygenation and were interested to look at the detail of their standardized intelligence testing. Interestingly, Harvey et al. used their executive function test because, as they say, general cognitive scores are in the normal range and are poor predictors of later learning ability. Indeed they note the limited correlation between their tests and previous studies. However, they do not report an analysis of any general ability scores such as that carried out by Iklé et al.

The question which arises is whether the application of tests used in the latter three papers would be of interest in the other two authors' studies. The answer must clearly be yes, although one would indeed be surprised if one found in Harvey's extremely-low-birthweight sample the apparently raised perceptual test results found in the Iklé study.

Broadly, the outcome studies which look at function aim to record the effectiveness of interventions which may have been used during the perinatal period and, when these have been complete, in so far as they ever can be, to chart the natural history for the individual child following their perinatal problem. Children and their parents would like a third outcome, that is, an effective program of remediation when the deficit is identified. But identification is much easier than remediation.

The differing outcomes for the five groups of children and differing outcome measures used, demonstrate the difficulties of even meeting the first two outcome tasks I have suggested. The next complication is looking at the original problem and seeing how one can correlate outcome with earlier information. Detailed information about the situation in the perinatal period and either the extent of the hydrocephalus, the time the children were on extracorporeal membrane oxygenation, or details of the very-low-birthweight babies are needed; all of which our authors attempt to supply. However, we now need detailed imaging if we wish to relate these outcomes to previous events. Such imaging needs repeating at the time of the outcome investigations so that the actual function with the underlying pathology (in the brain) can be correlated. These are complicated and difficult activities. Congratulations, therefore, to our authors who are making such a good start.

Martin Bax

References

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