Atoms

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THE POWER OF PUBLICITY

On October 9, 2004 the *BMJ* published an article that examined the cardiac surgical mortality in 11 English paediatric centres.[1] Over three time periods (1991 to 1995; 1996 to 1999; 1999 to 2002) the mortality in Bristol declined from 29% to 5%, to 3%. During the last two time periods the mortality rate was consistent with that of the other centres. These are stunning results. What are the lessons learned? First, it was the initial reports of high mortality rates after surgery in Bristol in the lay press that focused national attention on the problem. This was followed by a government inquiry and a Department of Health report (Learning from Bristol: the Department of Health's response to the Report of the public inquiry into children's heart surgery at the Bristol Royal Infirmary 1984–1995). It is not in the interest of medicine to rely on the press to report variation in quality of care. However, if medicine does not pursue this activity more aggressively, this type of information will find itself into the popular press. Second, so called benchmarking—comparing one centre to another on important health outcomes—is critical if we are to improve quality of care. It was interesting that the *BMJ* published the study with the centres identified rather than anonymously, which may have been the case in the US. Third, improving quality can be expensive. The NHS has invested significant resources to improve the paediatric cardiac surgery service in Bristol. As mentioned in the recently released National Service Framework for Children, Young People, and Maternity Services, care for children should be evidence based, and systems must be in place that can deliver continuously high quality care. This effort starts by measuring what we do.

Reference

1 **Aylin P**, Bottle A, Jarman B, Elliott P. Paediatric cardiac surgical mortality in England after Bristol: descriptive analysis of hospital episode statistics 1991–2002. *BMJ* 2004;**329**:825.

PCR – IMPROVING THE HEALTH OF CHILDREN

The frustrating delay in obtaining "culture results" often impacts on our ability to provide specific and appropriate antimicrobial therapy for patients. The increasing availability of polymerase chain reaction (PCR) is revolutionising how we treat numerous medical conditions. Herpes encephalitis is one good example. In years past we were dependent on brain biopsy, electroencephalograms (EEGs), culture (not a very good test), and our own intuition (admittedly based upon clinical presentation and epidemiology of disease). The availability of PCR for this condition has dramatically altered our ability to provide specific therapy in appropriate circumstances. Saglani and colleagues from Great Ormond Street, detail the use of broad range PCR, based on bacterial ribosomal DNA, for the detection of numerous bacterial species in a single assay. Not surprisingly they found that PCR was far more sensitive in detecting bacteria than culture of pleural fluid. PCR detected organisms in 14 of 32 samples in which culture was negative. As this test becomes more widely available, it is likely to alter how we treat children with empyema. Hopefully, earlier and more specific antimicrobial therapy will improve patient outcomes.

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LGA INFANTS, HYPOGLYCAEMIA, AND DEVELOPMENTAL OUTCOME

Much of our role as paediatricians relates to reassurance. A child has a dramatic medical event—for example, a febrile seizure—and after the initial shock parents want to know what this means for their child. In this issue, investigators from the Netherlands detail the neurodevelopmental outcome of children who were large for gestational age (LGA) as term infants, some of whom became hypoglycaemic. They compared the developmental outcome at age 4 of 60 hypoglycaemic LGA infants and 15 LGA infants who were normoglycaemic. The children underwent formal assessment of intelligence, and the parents completed the Child Behaviour Check List—a screening instrument with eight subscales—that alerts clinicians that a child may have a behavioural disorder. The results are quite reassuring, after controlling for various potential confounding variables, including the extent of hypoglycaemia and administration of intravenous glucose, no differences emerged between the two groups – yet another opportunity to reassure parents.

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REDUCING ADMISSION FOR ASTHMA, BUT NO IMPACT ON INPATIENT STAY

As the prevalence of asthma has risen, renewed interest in how to prevent admission to hospital has emerged. Drs Cheuk, Chau, and Lee from Hong Kong conducted a meta-analysis that included five placebo controlled randomised trials and 182 children, and focused on treatment with magnesium sulphate to prevent hospitalisation. This is a well-done meta-analysis, meeting many of the standards that have been developed for such studies. For example, the search strategy, which included identifying unpublished studies, is carefully detailed. The authors appraised the quality of each of the randomised trials using a standardised measure—the Jadad score. The authors tested for heterogeneity for the various outcomes considered, and then appropriately controlled for this effect in the pooled results when necessary. Lastly, although the authors considered subgroup and sensitivity analysis, because of the small number of studies, this was not possible. What did they find? The use of magnesium sulphate in the acute care setting significantly reduces the risk for hospitalisation; the number needed to treat is relatively small—four. What I find so striking about these results is that they are consistent with studies of corticosteroids and levalbuterol—both reduce hospitalisation rates when used in the emergency room setting. What has been far more difficult to demonstrate, however, is that any of these treatments significantly impact on length of stay once children are admitted to hospital. Although there are numerous explanations as to why these medicines are effective in preventing hospitalisation, but not in reducing length of stay, I still find these results fascinating. We need to continue to experiment with new approaches to inpatient therapy.

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