

Newsletter

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Hot Topics 1

Thrombocytopenia after immunisation

A recent paper (*Ped Infect Dis J* 2003;22: 119-22) prospectively surveyed admissions to 12 paediatric hospitals in Canada to identify children presenting with thrombocytopenia (platelet count $<50 \times 10^9/L$) within 30 days of immunisation.

Sixty-one cases were found (average 6/yr). Forty-six children had also had a recent viral infection, four had a history of previous thrombocytopenia and six had other congenital disorders. In 80% the thrombocytopenia followed measles-mumps-rubella (MMR) or a measles-containing vaccine. 13/61 presented with severe bruising or rash, 14 with nose or gingival bleeding, and three with gastrointestinal bleeding. One child had a

subdural haematoma following a fall down stairs three days after an MMR vaccination (platelet count $5 \times 10^9/L$) and died within a few hours of hospitalisation. Platelet counts returned to normal within 30 days of onset in 80%. Three children had low counts for three months, one for five months and one other developed an underlying bone marrow disorder after eight months.

Review of the literature confirmed that thrombocytopenia occurs rarely following immunisation. The risk of thrombocytopenia following MMR vaccine was estimated in a United Kingdom study as 1 in 29 000 doses. Thrombocytopenia after DTP immunisation is even less frequent and usually has a shorter interval to onset than after MMR (mean 7 days versus 16 days).

Coming Soon

NCIRS-AIP *Australian Immunisation Professionals (AIP)*

NCIRS-AIP is an electronic email discussion list that is currently being set up. This group will facilitate communication between Australian immunisation practitioners, policy makers and researchers. It is modelled on a similar group in the UK. Items proposed for inclusion are in three main categories:

1. News items/publications and meetings of interest
2. A forum for questions and feedback
3. An avenue for rapid information about media controversies.

This will be a private group, chiefly for professionals involved in immunisation in Australia, whether at the level of research, policy development, or as immunisation providers. NCIRS will welcome into the group all Australian professionals, as well as professionals in other countries who wish to learn more about immunisation in Australia, and/or wish to communicate their experience with us.

We will be in touch with you regarding this discussion group in November 2003.

Hot Topics 2

Immunisation of preterm and low birth weight babies

Updated recommendations for immunisation of preterm (PT) and low birth weight (LBW) babies have recently been published by the American Academy of Pediatrics.¹ The report summarises information on the immunogenicity, durability and safety of routinely recommended childhood vaccines given to PT and LBW babies. It emphasises that, as these babies have a special need for protection against infectious diseases, they should be vaccinated according to the recommended schedule, at the usual chronological age, provided that they are well and that there are no contraindications.

In addition to vaccines previously recommended, 7-valent pneumococcal vaccine is now also recommended for all medically stable PT babies, commencing at two months of age.

There is no evidence that PT babies have a higher incidence of adverse reactions following

immunisation. Most PT infants produce sufficient vaccine-induced immunity to prevent disease. However, some very low birth weight or very preterm babies may have a reduced response to some vaccines, such as hepatitis B, necessitating adjustment in the timing of hepatitis B vaccination or serological confirmation of immunity following immunisation.

More recently, IPV (inactivated polio vaccine) has been substituted for OPV (oral polio vaccine) in the United States. In Australia, the live OPV is currently used, so it is thus recommended that vaccination against polio be delayed until hospital discharge to avoid the risk of spreading infection to other PT babies.

(1) American Academy of Pediatrics. Clinical Report. Immunization of Preterm and Low Birth Weight Infants. *Pediatrics* 2003; 112: 193-198.

Recent journal club topic

Cognitive process and parents' decisions regarding vaccination for their children

When parents choose not to vaccinate for fear of serious reactions, a common belief is that giving them information about the benefits and risks of immunisation will assuage their concerns. However, a 1996 study published in the *Journal of Clinical Epidemiology* (1996;49:697-703) has found the opposite. Meszaros et al mailed 500 US subscribers to *Mothering Magazine* a survey asking about their immunisation beliefs.

The sample was chosen for the high rate of non-vaccinators anticipated. Of the 294 completed questionnaires 43% of the respondents were non-vaccinators and 57% were vaccinators.

Respondents were given a table with information about the risks of serious health consequences of not vaccinating versus vaccinating against pertussis - information that would make most experts conclude that the risks of the disease are worse than the vaccine. The information had the opposite effect on non-vaccinators. They became even less inclined to vaccinate, while vaccinators became more inclined to vaccinate. The authors commented that respondents focused on information which confirmed their previously held views while discounting evidence that would not, a phenomenon that is known as "attitude polarisation". These findings have implications for how health professionals respond to parental choice not to vaccinate in the individual encounter. In the public arena, experts responding via the media to vaccine safety scares need to adopt sophisticated communication strategies that acknowledge the complexity of vaccination decisions.



Recent NCIRS Publications

- ◆ Lawrence GL, MacIntyre CR, Hull BP, MacIntyre PB. Measles vaccination coverage among five-year-old children: implications for disease elimination in Australia. *Australian and New Zealand Journal of Public Health* 2003;27:413-8.
 - ◆ Hull BP, Lawrence GL, MacIntyre CR, MacIntyre PB. Estimating immunisation coverage - is the 'third dose assumption' still valid? *Communicable Diseases Intelligence* 2003;27:357-61.
 - ◆ Litt J, Burgess M. Varicella and varicella vaccination: an update. *Australian Family Physician* 2003;32:583-7.
 - ◆ Williams A, Forrest J (eds). Immunisation: communication and perception of risk. Summary of a workshop held in Melbourne, Australia, 5 May 2002. Sydney: NCIRS; 2003.
 - ◆ MacIntyre CR, Chu CP, Burgess MA. Use of hospitalisation and pharmaceutical prescribing data to compare the prevaccination burden of varicella and herpes zoster in Australia. *Epidemiology & Infection* 2003;131:675-82.
 - ◆ Horby P, Gilmour R, Wang H, MacIntyre P. Progress towards eliminating Hib in Australia: an evaluation of *Haemophilus influenzae* type b prevention in Australia, 1 July 1993 to 30 June 2000. *Communicable Diseases Intelligence* 2003;27:324-41.
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Recent journal club topic

Meningococcal C conjugate vaccine and relapse in the nephrotic syndrome

Data on vaccine response in special populations with serious underlying diseases are frequently lacking when vaccines are approved for general population use. In particular, there has been a lack of data on the benefit from various preventive strategies in the nephrotic syndrome¹ and doubt among nephrologists about the possibility of vaccines, along with other antigenic stimuli, precipitating relapse.²

Abeyagunawardena et al reported in the *Lancet* the experience of relapse in 106 children attending a tertiary referral centre for the management of the nephrotic syndrome (NS) in the 12 months before & after the implementation of a meningococcal C conjugate vaccine program (MCCVP) in the United Kingdom.³ They documented an increase in the number of NS relapses in the 12 months before versus the 12 months after the MCCVP, & drew two main conclusions. First, that there was a causal relationship between the MCCVP and relapse and second that this should result in "careful consideration" of MCCV in children with NS. However, neither of these conclusions is justified by the data presented.

First, the report in fact demonstrated not a causal relationship but a temporal association. As such it has generated a hypothesis to test not demonstrated a causal association. Second, the recommendation for "careful consideration", which amounts to a recommendation against vaccination, has failed to consider risks and benefits in this patient population. The risk of relapse must be balanced against the risk of invasive meningococcal C disease (IMCD), both in incidence and severity, while the potential benefit requires data on protective efficacy. Contemporary data on the incidence of sepsis, including IMCD, in NS are limited.¹ However, it is plausible that the risk of IMCD is increased in NS and such cases have recently been reported.⁵ Similarly, data on the immune response to any protein conjugate vaccine in various sub-groups with NS, are lacking,¹ but nephrologists in the United States nominate concerns about reduced vaccine efficacy as a major rationale for low vaccination rates,² as also found in London.³

We argue that currently available data on the balance of risks and benefits favour a continued recommendation for MCCV in children with NS. However, the available evidence should be discussed with their parents.

A list of references for this article is available on request.

For further information, or if you would like to provide feedback on the NCIRS Newsletter, please contact Karyn Phillips at karynp@chw.edu.au