

INFLUENZA VACCINE (Commentary)

What is the most up to date advice with regard to the expected 2009-2010 epidemic?

Symptoms can sometimes be more severe in women who become infected while pregnant, but there is no evidence that this is any more true of the current pandemic strain than it was during previous pandemics, and the evidence from *earlier* pandemics is that infection during pregnancy does not damage the baby, or cause transplacental infection during delivery (as occurs in some other viral infections). Neither does breast feeding put the baby at risk as long as the mother takes care to wash her hands, wears a face mask while feeding, and leaves all other aspects of care to a non-infected relative until she is no longer at risk of spreading her virus to others. Patients can be infectious a day before they become aware of any symptoms, but they are usually only at risk of infecting others for seven days after that (although infectivity may last a little longer in young children). Particular care needs to be taken to guard against cross-infection in a hospital setting.

Vaccination: The exact strain of virus causing an epidemic of flu every winter varies from year to year. It is an influenza A virus that currently causes most cases each winter, and the trivalent inactivated vaccine issued routinely each winter has, for several years now, been selected to provide protection from two of the currently most prevalent type A strains and one type B strain. However a new and novel type A strain started to spread widely round the world in the early part of 2009, and a vaccine that is effective against this new strain ("swine flu") is only likely to become available shortly before this year's winter epidemic materialises.

Two companies were, however, given a license to market products designed to offer protection against this latest strain by the European Medicines Agency at the end of September 2009 for children more than 6 months old, as well as adults. One vaccine is Pandemrix[®], marketed by GlaxoSmithKline (GSK), and the other is Focetria[®], marketed by Novartis. The companies are advocating a two-dose strategy, with the two doses given 3 weeks apart. It will, however, be a little time before sizable stocks become available and, because the products have been licensed much quicker than usual, it will be even more important than usual to undertake particularly rigorous post-marketing surveillance to confirm their complete *safety*. In parallel with this GSK is still in the middle of conducting 16 clinical trials of the *efficacy* of their product in children, adults and the elderly in Europe, Canada and the US.

Antiviral drugs: Zanamivir (Relenza[®]), which has to be taken by inhalation, seems to offer protection against most strains of the flu virus currently prevalent including the latest novel H₁N₁ ("swine flu") strain, but it is not licensed for use in children less than 7 years old. However, the oral drug Oseltamivir (Tamiflu[®]) seems to be just as effective (except against the Brisbane/59/2007 strain of the A virus) and this can be given to children less than a year old where appropriate even though it is not formally licensed for use in children this young. It also seems to be safe to take during pregnancy and lactation (because maternal blood levels are very low). Oseltamivir is a prodrug that is only effective after biotransformation in the liver, so efficacy may be slightly reduced in the first few weeks of life. Caution is said to be necessary when giving the drug if there is renal failure, but the normal plasma half life is only 1–3 hours and clearance is actually higher in childhood than adult life (which is why the recommended dose in early infancy is 2 mg/kg), so this is seldom going to be a major consideration. Indeed a **THREE** mg/kg dose is now being recommended for 6–12 month old babies in the UK. Oseltamivir can make children feel sick (Shun-Shin *et al.*, 2009) so overuse could do the manufacturer more good than the general public (Jack, 2009). Note that the liquid formulation currently most widely available in the UK is the slightly bitter 15 mg/ml *solution* and not the fruit flavoured 12 mg/kg *suspension*.

For access to more detailed guidance on management during pregnancy and early infancy click on one or more of the following:

American CDC advice on 'swine' flu risk in pregnancy.	June 2009
UK Guidance (The 'Green Book')	July 2009
UK NHS Direct Oseltamivir Fact Sheet	July 2009
American Academy of Pediatrics Guideline.	September 2009

More up-to-date information is being posted at regular intervals by the American authorities who currently have rather more experience of the new H₁N₁ strain than most other countries (other than Australia). For access to the latest information issued by the Department of health in the UK, by the Centres for Disease Control and Prevention in America, and by the American Academy of Pediatrics go to one of the following:

www.dh.gov.uk/pandemicflu
www.cdc.gov/h1n1flu/guidance/
www.aapredbook.org/flu.

Mothers should not avoid breast feeding if they develop symptoms, but they can minimise the risk of transmission by washing their hands regularly and not coughing openly: www.cdc.gov/h1n1flu/qa.htm A face mask may give extra protection if used properly www.cdc.gov/h1n1flu/masks.htm More detailed advice for professionals can be obtained by going to www.cdc.gov/h1n1flu/recommendations.htm

References

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- Pickering LK, Baker CJ, Long SS, et al., eds. *Red Book 2009. Report of the Committee on Infectious Diseases*. 28th ed. Elk Grove Village IL: American Academy of Pediatrics, 2009: pp 400-12.
- Shun-Shin M, Thompson M, Henegham C, et al. Neuroaminidase inhibitors for treatment and prophylaxis of influenza in children: systematic review and meta-analysis of randomised controlled trials. *BMJ* 2009;339:b3172. [SR]
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