Vaccination to prevent varicella and shingles

In a recent review in this journal, J Breuer discussed the use of the Oka live varicella vaccine currently not licensed but obtainable on a named patient basis in the UK, particularly for children with leukaemia or solid organ transplants. In the discussion on the universal vaccination strategy in the USA the incidence of serious adverse events was detailed.

It should be stressed to clinicians that routine immunisation of all healthy children carries the potential risk that unrecognised immunocompromised children could inadvertently be vaccinated. It is worth bringing attention to the case of a child whose AIDS defining illness was disseminated vaccine strain varicella, and a child with severe combined immunodeficiency who developed hepatitis as a result of vaccination with this strain.

The child with HIV was vaccinated at a time when his CD4 count was only 8 cells/mm³. Current American Academy of Pediatrics guidelines recommend that the use of varicella vaccine be considered in asymptomatic or mildly symptomatic human immunodeficiency virus infected children with CD4 counts of 25% or greater.

In view of evidence for frequent reactivation of the vaccine strain even in healthy vaccinees, those whose immune system is set to deteriorate may be at risk of significant vaccine related infection. Killed varicella vaccines are less immunogenic but offer increased levels of safety. While research is carried out to improve their immunogenicity, I would like to suggest the approach of giving repeated vaccinations until protective antibody values are achieved and longer term monitoring with booster vaccinations as necessary.

Another issue is the difficulty of confirming that the vaccine strain virus was responsible. Both of the above cases identified varicella zoster virus from vesicular fluid by direct immunofluorescence but required molecular techniques to confirm that the wild-type virus was not responsible for the illness. Therefore, whenever a “vaccine failure” occurs, it may be difficult to determine whether the wild-type or vaccine strain is responsible.

The current guideline for immunosuppressed patients is to avoid contact with those recently immunised with oral live varicella vaccine. Until data have been collected on viral shedding from those recently immunised with the Oka vaccine, or during periods of viral re-activation, it is uncertain whether contact should also be avoided.

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Author’s reply

The potential risk of complications following routine immunisation of previously unrecognised immunocompromised children applies to many live attenuated vaccines, including poliovirus, measles, and mumps. Unlike oral polio, where viral shedding is common and, indeed, considered valuable to achieving vaccine coverage, the Oka virus is rarely transmitted to secondary cases, and considerably less frequently than is seen for the wild type virus. Moreover, the current advice from the ACIP is to vaccinate family contacts of immunosuppressed children to prevent them transmitting the much more virulent wild-type virus. Should a vaccine related infection occur, the virus is sensitive to aciclovir and thus easily treated.

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18, 19 June 2002, Conference Centre, Sheffield Hallam University, Sheffield, UK
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