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Vaccine vanquishes varicella

Varicella (chickenpox) could become a thing of the past, at least in the USA.

Before child vaccination began in 1995, the varicella virus infected more than 4 million Americans every year, most of them youngsters. More than 11 000 patients developed serious conditions requiring hospitalisation; annually, some 100 died.

But figures published in February (*JAMA* 2002; 287: 606–11) show that, thanks to vaccination, the incidence of the disease has declined by up to 84% in some places.

Jane Seward and associates at the Centers for Disease Control (Atlanta, GA, USA) sampled three areas of the USA where vaccination coverage had been moderately good (up to 83.8%): Antelope Valley, California, Travis County, Texas, and West Philadelphia, Pennsylvania. "These areas represent a reasonable

cross-section of America", said Seward.

Since varicella is not a reportable disease in most US states, the researchers had to do active surveillance, enlisting the help of schools, universities, hospitals, health clinics, kindergartens, physicians, shelters, households, and even prisons to provide information on the number of varicella cases.

The team found that, from 1995 to 2000, the incidence of varicella dropped in the three areas by between 71% and 84%. The greatest decline was seen in children aged 1–4, but there were also significant reductions in the number of adult cases. Taking all three areas together, varicella-linked

hospitalisations were down from a range of 2.7–4.2 per 100 000 of the population in 1995 to 1.5 per 100 000 in 2000. "Continued implementation of the existing vaccine policies should lead to further reductions", said Seward. "Vaccination is safe and effective, and disease declines if children are vaccinated. It's a much safer option than contracting the disease."

The US vaccine has not been made commercially available in Europe. Though a European vaccine exists, no EU country has yet included it in its vaccination list. "Each country has different regulations", says Carmen Amela, epidemiologist at the National Epidemiology Centre, Madrid, Spain. "In Belgium and Germany you can request vaccination, in Spain it's given to children at high risk, and in the UK and the Netherlands it has not yet been approved for use. People are waiting for more results."

Adrian Burton



A child with chickenpox.

Australian find suggests worldwide reach for metapneumovirus

A respiratory virus discovered last year in the Netherlands has been isolated for the first time in Australian children, with researchers now suggesting it is likely to be relatively common worldwide.

The human metapneumovirus (hMPV), a paramyxovirus most closely related to avian pneumovirus, was first reported by Dutch researchers in 28 children with symptoms ranging from upper respiratory tract infection to severe bronchiolitis and pneumonia (*Nat Med* 2001; 7: 719–24).

Albert Osterhaus, from the Erasmus Medical Centre in Rotterdam, reported that serological studies showed that virtually all children in the Netherlands had been exposed to hMPV by the age of 5, and that it had been circulating in human beings for at least 50 years.

The virus was not identified earlier because of its poor replication in standard culture assays and because it appears to take up to 10 days after inoculation to cause cytopathic

changes, he suggested.

At the time the Dutch results were published, Michael Nissen, Theo Sloots, and their team at the Royal Children's Hospital in Brisbane, Australia, were seeking a molecular diagnosis in the 25–33% of children with unexplained illness consistent with viral pneumonia or bronchiolitis.

Using a random sample of nasopharyngeal aspirate specimens, they screened for hMPV by PCR based on the known sequence of the virus after excluding nine common viruses (respiratory syncytial virus [RSV], influenza A and B, parainfluenza 1, 2, and 3, rhinovirus, coronavirus, and adenovirus) and atypical bacteria.

Of the 200 samples screened, three were identified as homologous with hMPV, and viral growth was subsequently confirmed in cultures from two samples (*Med J Aust* 2002; 176: 188).

The findings of this preliminary study led Nissen to predict that

"hMPV is also relatively common in the Australian community", a view reinforced by extension of the screening study to 525 samples, of which 40 tested positive for hMPV in 38 children with an average age of 2.4 years.

Studies of antibody responses in selected, positive samples showed antibody titres at 3 to 6 months after infection, "but we are not entirely sure how long lasting the immunity is", reports Nissen.

The virus has been identified in several European countries and North America as well as Australia. "Given some additional preliminary data from other countries as well, we think indeed that the virus occurs worldwide", says Osterhaus.

The Australian and Dutch teams agree that the findings could have implications for infection control. Nissen warns that: "It may be important to isolate children with the virus, as occurs with RSV".

Megan Howe