

Antigenic Drift in Influenza A(H3N2) Strains

Influenza viruses are constantly changing by mutation, hence the importance of the WHO global influenza surveillance program to detect emergence of altered viruses and to ensure that they are available for vaccine production. As detectable antigenic changes occur in the circulating viruses vaccines are updated before this has a major impact on vaccine effectiveness.

This year some antigenic drift has been detected in the virus strains circulating in Australia and New Zealand and the viruses occurring most recently have been classified as A/Fujian-like. The A/Fujian-like viruses are still related to the A/Moscow-like strain included in the current vaccine and the vaccine has been demonstrated to induce antibodies to the A/Fujian-like strains, but generally to a reduced level. This suggests the possibility that there may be some reduction in the protective value of the vaccine, however, this cannot be quantitated. Although sporadic cases in immunised individuals have been observed in Australia, a major breakthrough of vaccine protection does not appear to have been recorded.

The WHO Consultation that will make recommendations on vaccine formulations for the next Southern Hemisphere winter (2004) will be conducted on 4-6 October 2003 and will be followed by the Australian Influenza Vaccine Committee meeting on 16 October 2003.

Outbreaks of influenza reported throughout Australia

During August all states in Australia (except NT) have reported large outbreaks of influenza. Most recently newspapers in Adelaide have reported that non-urgent surgery has been postponed due to demand for beds to cope with patients suffering from influenza. In Hobart there have been several hospital admissions of persons with influenza and large numbers of school absences including one high school which recently reported 179 of its 426 students absent due to illness.

Influenza surveillance programs in Victoria, Queensland and NSW all show rapidly increasing influenza incidence in the past few weeks with no evidence that we have reached a peak so far. On analysis of the isolates to date they are practically all A(H3) viruses of the A/Fujian/411/2002 type. This is a virus which is slightly different to the previously circulating A(H3) viruses which were A/Moscow/10/99-like. These A/Fujian/411/2002-like viruses caused a number of outbreaks in Japan and Korea in the 2002-3 winter. Virtually no influenza type B or A(H1) has been seen this season.

New Zealand has also seen high levels of influenza A(H3) type (A/Fujian/411/2002-like) throughout June and July 2003, however the levels have been reducing during August. The levels of influenza in NZ in 2003 are higher than in 2001-2.