

Update on H1N1 Virus

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Local situation

Up till 14 September, we had 296 confirmed cases of H1N1 (162 males and 134 females) and 109 confirmed cases of Influenza A (probable cases). 36% of those confirmed cases were found in patients suffering from chronic disease, 12% were health care workers, 4% were pregnant women, 16% were children < 5 years, 14% were hospitalized cases, 8% were cases with severe symptoms, and sentinel cases made up the remaining 10%.

International situation

As of 1 September 3,402 deaths related to the pandemic A/H1N1/2009 were reported worldwide. Epidemics of influenza-like syndromes are evolving differently across the world but A/H1N1 remains the predominant virus circulating in both the northern and southern hemispheres. In southern hemisphere countries (represented by Chile, Argentina, Australia, New Zealand and South Africa), influenza activity continues to decrease. Active transmission persists in tropical regions of America and Asia. Many countries in Central America and the Caribbean continue to report declining activity however, countries in the tropical region of South America (represented by Bolivia, Ecuador and Venezuela) and Asia (like India, Bangladesh and Cambodia) are reporting increasing levels of respiratory disease.

In the Northern Hemisphere influenza activity is variable. In the US, regional increases in influenza activity are being reported. Most of Europe is reporting low or moderate respiratory diseases activity, but parts of Eastern Europe are beginning to report increases in activity.

H1N1 Vaccine

Media is focusing presently on the pandemic vaccines. Most countries have decided to offer the vaccine to those persons at high risk of developing complications to influenza and these include pregnant women, children < 5 years, those suffering from chronic conditions and health care workers.

Preliminary data from clinical trials done by Greenberg et al. in Australia show that a single dose of nonadjuvated vaccine containing the usual 15µg of hemagglutinin (HA) antigen is immunogenic in a high proportion of healthy young and middle-aged adults (75% - 96%). US studies indicate that protection occurs within 8 to 10 days. The study found the same side effects that many people usual experience with influenza vaccines. Approximately 45% of vaccines had moderate reactions like headaches, pains in the arm and redness at the injection site.

In another study by Clark et al. at the University of Leicester, 175 British volunteers aged 18 to 50 who received either 7.5 or 15µg of an adjuvated vaccine, made by Novartis Corp were found to elicit antibody titres. The study found that either dose produced adequate immune response within 14 days.

The obvious advantage of a one-dose schedule is that, in the current time of vaccine scarcity, it doubles the number of people who may be vaccinated with a fixed amount of vaccine. Another advantage is that antibody responses develop sooner. In the present situation of widespread circulation of H1N1 virus occurring in many areas of the world, achieving protection 3 to 4 weeks earlier with one dose, rather than later on a two-dose

schedule, is advantageous. Furthermore, from a logistic standpoint, administering one dose will greatly simplify vaccination programs and should reduce costs.

Data on immunogenicity is difficult to extrapolate to children or to adults who have underlying immune suppression or high-risk conditions. Experience with traditional seasonal vaccines has shown that the immune responses in older children, pregnant women, and immuno-competent adults with chronic conditions are roughly similar to those of healthy non-pregnant adults. So on this basis, the new data suggest that the standard 15µg HA dose of H1N1 vaccine should be immunogenic for these groups. The immune responses in children are unknown. Younger children tend to have inferior responses to inactivated vaccines, as compared with healthy adults so it is likely that in children less than 9 years of age, two doses will be recommended as is done the first year they receive seasonal influenza vaccines.

The EMEA's expert committee on new medicines have started to consider the first three H1N1 swine flu vaccines from GlaxoSmithKline, Novartis and Baxter in September. If all goes as planned, the first swine flu vaccines could be licensed by the European Commission early in October.

Antivirals

CDC has last week issued revised guidance advising against giving influenza drugs as prophylaxis in healthy people, even if they may have been exposed to infected persons.

The CDC recommends treatment with Tamiflu® or Relenza® for anyone hospitalized with a flu-like illness. They also advise prompt treatment at the first sign of symptoms for those at high risk for serious complications, including pregnant women, children < 5 years and people with certain chronic conditions like asthma and heart disease.

As of the 2nd week of September Roche have confirmed that they are aware of 13 cases of Tamiflu®-resistant H1N1 cases around the world; CDC alone has counted 9 in the US. All were single cases. But there has been the first reporting by Health officials in North Carolina of what seems to be the first Tamiflu®-resistant H1N1 virus spreading from one person to another.

Latest recommendations from the WHO on school closures as of 11 September

From data already collected it has been demonstrated that schools amplify the transmission of pandemic viruses both within schools and in the wider community. However the timing of school closures is critically important to be effective in reducing transmission, and also other measures have to be included to ensure that contact between students is limited if the school is closed. One has to ensure that the students are not congregating in another setting like the cinema, shopping mall and other venues, as they will continue to spread the virus and the benefits of closing the school will diminish greatly.

While it is known that school closures can reduce the peak demand on health care systems, one also has to weigh the disruption it may cause to health care services if a number of health care workers would need to stay at home to look after their school-aged children. ☐