

Sequencing Analysis of the Viruses Responsible for Two Recent Clustering Outbreaks of Type B Influenza in Ilan Area

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In early November 2006, there were two outbreaks of epidemic influenza infections in Ilan County and centered at two schools: one junior high school in Chiaohsi Township, and another preliminary school in Yuanshan Township. The high infection rate among students in these two schools together with the apparent clustering nature of the outbreaks has made the local health authority become quite alarmed and made an extra effort in collecting many specimens from the infected, which were then sent over to Taiwan CDC Laboratory in Nangang District, Taipei City. Working at the laboratory, we were instructed to verify the type of the specimen (Type B, decided by the local hospitals attending the sick students) and also find out their subtype classification and other characteristics. With those collected specimens, apart from doing a standard procedure of real-time RT-PCR for clinical diagnosis, we have also conducted a cell culture trial of the virus isolate, followed by examining the antigenicity of the virus, and sequencing certain gene fragments of its surface antigen HA and NA, in order to figure out exactly what sort of flu virus was responsible for the two large clustering outbreaks. The rationale behind this study was that we believed the

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strains causing such a large scale outbreaks might well have a considerable potential to become a major villain of the in-coming flu season this year (2006-07). Results from our laboratory on the characteristics of the viral HA, the gene sequences, and the expression of the viral antigenicity indicated that the strain was very similar to the 2006-07 influenza vaccine strain B/Malaysia/2506/2004, which meant that this year's vaccine should be able to provide considerable protection against such viral strains. Therefore, at this point in time, having the flu vaccination may well be one of the best choices so far to prevent from getting the flu, and for those who already received the vaccination, this news would certainly bring some relief to them.

Key words: influenza virus, clustering outbreak, real-time RT-PCR, sequence analysis