

WHO data confirms low level of resistance to Tamiflu

May 9 2007

New data published by the World Health Organisation (WHO) has confirmed a low frequency of resistance to Tamiflu (oseltamivir) over 3 influenza seasons (2003 – 2006).

The information, published by the Neuraminidase Inhibitor Susceptibility Network in the WHO's Weekly Epidemiological Record, has shown that resistance of around 0.3% to oseltamivir was seen during the influenza seasons in which there had been substantial Tamiflu use in Japan (35 million patients), the highest use in any market. This level of resistance is extremely low compared to rates of 65% seen in Japan with another antiviral, amantadine.

"These results confirm that the potential for the development of resistance to Tamiflu is very low, even when used extensively in the management of seasonal influenza," commented Dr. David Reddy, Pandemic Task Force Leader, Roche. "This provides reassurance to the scientific community that since the introduction of Tamiflu in 1999, the levels of resistance have remained similar to those seen in the clinical development programme. Roche and the NISN continue to maintain high vigilance to keep on top of the evolving virus. "

Information gathering and results

As with any antiviral medication, there is a theoretical risk that a virus may emerge with decreased sensitivity to a drug. The Neuraminidase

Inhibitor Susceptibility Network undertook screening for susceptibility to oseltamivir of influenza viruses randomly submitted to the national WHO Collaborating Centre for Reference and Research on Influenza and other Respiratory Diseases in Tokyo, Japan. Influenza virus isolates collected were tested by neuraminidase inhibition assay (IC₅₀ or sequence analysis) to detect mutations associated with drug-resistance.

Results were as follows:

| Influenza Season | No of Influenza A isolates tested | Resistance | No of Influenza B isolates tested | Resistance |
|------------------|-----------------------------------|------------|-----------------------------------|------------|
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|-----------|------|----------|-----|---|
| 2003/2004 | 1180 | 3 (0.3%) | 171 | 0 |
|-----------|------|----------|-----|---|

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|-----------|-----|---|-----|---------|
| 2004/2005 | 618 | 0 | 252 | 1(0.4%) |
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|-----------|-----|----------|-----|---|
| 2005/2006 | 429 | 4 (0.9%) | 163 | 0 |
|-----------|-----|----------|-----|---|

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|-------|------|-----------|-----|-----------|
| Total | 2227 | 7 (0.32%) | 586 | 1 (0.17%) |
|-------|------|-----------|-----|-----------|

These preliminary findings indicate that a low frequency of oseltamivir resistance was present in community isolates during influenza seasons in which there had been substantial oseltamivir use in Japan. Low frequencies of oseltamivir resistance in influenza A viruses (

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