be provided by Rrs4 and Xrs4. A fall in Rrs of 40% or an increase in
Xrs of 65% are indicative of significant changes in respiratory
function following BD inhalation. Further systematic studies are
required to determine the clinical significance of post-BD changes
in lung function in preschool children with lung disease.

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LUNG ALERT

Emergence of influenza B viruses with reduced sensitivity to neuraminidase inhibitors

Oseltamivir is a neuraminidase inhibitor effective in the treatment of influenza. In this
Japanese study, the sensitivity of influenza B virus to neuraminidase inhibitors was
assessed in 74 children before and after treatment with oseltamivir, and in a further 348
untreated patients, 66 of whom were adults.

They found that one patient treated with oseltamivir had a variant of influenza B virus with
reduced neuraminidase inhibitor sensitivity. Among the untreated group, seven (1.7%) had
variants with reduced sensitivity, due to a number of different mutations. Three of these were
thought to have been contracted from close contact with siblings carrying variants of influenza B
with the same mutation and the remainder contracted within the community. This is in contrast
to the influenza A virus, which has exhibited generations of drug-resistant variants in 5.5–18%
of cases, found in other studies.

The study shows that influenza B viruses are far less likely to have developed reduced
sensitivity to neuraminidase inhibitors than influenza A viruses. However, once present, the
mutant variants may be contracted both within families and the community. It is possible that
widespread use of oseltamivir may have caused the generation of these mutant variants in the
community.

Although influenza B causes smaller epidemics than influenza A, and the clinical course of
infection does not appear to be affected by the mutations, ongoing surveillance for the
development of neuraminidase inhibitor resistant influenza viruses is critical.

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