CPSP
CANADIAN PAEDIATRIC SURVEILLANCE PROGRAM

One-time survey results

Paediatric antiviral drug use and potential adverse reactions

December 2009

In June 2009, the World Health Organization declared a worldwide pandemic in regard to a novel strain of influenza virus, the influenza A (H1N1) virus. This novel infection was considered a serious and life-threatening disease and had been associated with several fatalities. In July 2009, the federal Minister of Health issued an Interim Order, permitting the expanded use of the antiviral drug, oseltamivir, for the treatment of influenza A (H1N1) infection in children less than one year of age. That decision was based on the results of pre-clinical toxicology studies in animals and the paucity of data available in children. The Interim Order called for enhanced pharmacovigilance activities in order to detect safety signals early. Surveying front-line health care providers was a component of such enhanced pharmacovigilance.

The CPSP, in collaboration with the Marketed Health Products Directorate (Health Canada), conducted a survey to assess the occurrence of serious and life-threatening adverse reactions (ARs) with the paediatric use of two antiviral drugs, oseltamivir (Tamiflu®) and zanamivir (Relenza®). Although the Interim Order applied only to oseltamivir, Health Canada and the CPSP decided to include both antiviral drugs in the survey, as both are used for prophylaxis and/or treatment of influenza infection in children.

The survey was sent to all 2,532 CPSP participants in the first week of December 2009. Paediatricians were asked to respond to questions regarding antiviral drug prescriptions and suspected ARs for the previous one-month period. Responses received by Health Canada up to January 29, 2010, were reviewed. The response rate was 27%.

Prescriptions for at least one antiviral drug were reported by 74% (524/707) of the paediatricians who responded to the CPSP survey. When the drug prescribed was mentioned, the majority of prescriptions were for oseltamivir: 498 vs. 20 prescriptions for zanamivir. Oseltamivir was prescribed to children less than one year of age by 53% of physicians who reported prescribing antiviral drugs. There were 21 reports of serious ARs associated with the use of oseltamivir.

They were associated with the following systems:

- Gastrointestinal: Nausea, vomiting and diarrhea, hepatitis and pancreatitis
- Neuropsychiatric: Confusion, delirium, psychosis
- Renal: Acute renal failure
- Hematologic: Idiopathic thrombocytopenic purpura
- Dermatologic: Diffuse abrupt onset rash with conjunctival injection.

There were two reports of serious ARs associated with the use of zanamivir. One report listed “query pancreatitis;” the other report did not mention the specific reaction.

In conclusion, more than half of respondents confirmed they prescribed oseltamivir to children less than one year of age, and the survey documented 21 reports of associated serious ARs. Causality assessment (i.e., evaluation of the likelihood that the reaction is causally linked to the drug) was not the primary objective of the survey, and the data submitted did not allow for such assessment. Therefore, no causal inference can be made.

This one-time survey question enabled the CPSP to work in close collaboration with Health Canada and the Public Health Agency of Canada on an enhanced surveillance monitoring project to generate real-time preliminary data related to emerging health concerns in children.

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