
Acute flaccid paralysis

November 2004

As part of a Public Health Agency of Canada study to explore practices relating to the investigation of acute flaccid paralysis (AFP) cases in Canada, a one-time survey was included in the November 1, 2004, CPSP mailing to 2,378 paediatricians participating in the program. The survey aimed to establish background rates of paediatrician clinical encounters with acute flaccid paralysis cases and to explore their most recent experiences with follow-up laboratory investigations for stool testing.

A total of 628 paediatricians responded by mail and an additional 13 respondents participated in an online version of the survey posted on the CPS web page. The overall response rate was 27% (641/2,378).

Of those who participated in the survey, 463/641 (72%) reported that they would collect stool cultures within 14 days of onset of paralysis, which is the WHO recommended time frame for collection of viable stool specimens for isolation of polioviruses.

As expected, AFP is a rare condition and only 51/641 (8%) participating paediatricians reported having seen a case in the previous two years. Of these, 21/51 (41%) paediatricians reported ordering stool cultures for isolation of polioviruses. Thirteen (62%) of the 21 who ordered stool cultures reported receiving results from the laboratory, while the remaining six (28%) reported unknown or unsatisfactory results.

Of the 26 who did not order stool cultures (26/51), the main reasons specified fell into the following categories: patient referred to a specialist/paediatric neurologist (8/26); clinical presentation or other tests preferred over stool testing (7/26); patient presented too late for stool testing (1/26); not specified (10/26).

Discussion and next steps

The results from this survey are consistent with AFP surveillance data. From 1993 to 2003, surveillance data indicate that while less than 50% of AFP cases had stool collected for isolation of polioviruses, over 90% had one or more neurological investigation conducted. Given that over 90% of AFP cases in Canada are diagnosed as either Guillain-Barré syndrome or transverse myelitis, clinical signs and symptoms consistent with these conditions may favour neurological investigation and thereby pre-empt polio-specific investigations. Though only three AFP cases were diagnosed as having had an acute infectious process (due to non-polio enterovirus infections) during the last decade, all of three had polio-specific stool and/or serologic investigations completed.

Findings from the one-time survey together with the analysis of ten years of surveillance data indicate that while the majority of paediatricians are aware of the recommended time frame for polio specific stool collection, the WHO surveillance target of stool collection for $\geq 80\%$ of AFP cases is not being met and deficiencies exist in laboratory follow-up and feedback of results.

The polio eradication project has been one of the greatest public health challenges in history. Despite global efforts, the disease remains endemic in six countries in Africa and Asia and threatens to re-establish transmission in several neighbouring countries. Countries and continents certified as polio-free remain at risk of wild virus importation from endemic areas. Increasing globalization underscores this

risk. Therefore, reliable and effective surveillance systems continue to be vital for detecting possible importation of wild and vaccine-derived poliovirus.

While Canada remains committed to global polio eradication efforts through active surveillance of AFP, surveillance data indicate that key targets of surveillance system performance are not being met. Feasibility and appropriateness of alternate surveillance indicators should be explored for Canada where specialized diagnostic investigations are more readily available. To this end, a more detailed survey of paediatric neurologists is planned to fully explore and quantify reasons why viral stool cultures are not regularly requested. The goal of this follow-up survey is to summarize current practices in AFP surveillance in Canada and to consider the potential for alternate criteria for AFP surveillance indicators.

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