



Stool Cultures for AFP Surveillance (Don't "pooh-pooh" the idea)

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With the continuing risk of poliovirus importation into Canada, active surveillance of acute flaccid paralysis (AFP) in children less than 15 years old continues to be the focus of surveillance activities for potential cases of paralytic poliomyelitis. The surveillance program hinges on three components — *detection*, *investigation* and *reporting* of AFP cases — each of which is individually very important to its success.

Results from the CPSP's AFP surveillance program for 1999 show considerable improvement in reporting, up 42% compared to 1998. This encouraging result points to growing interest and participation — case *detection* and *reporting* — among paediatricians. The CPSP is strongly committed to AFP surveillance to contribute to the documentation of global polio eradication necessary to be able to discontinue systemic polio vaccination in the foreseeable future. In 1999, with 61 confirmed cases, our AFP study met the internationally targeted rate of one case per 100,000 in children under 15 years of age expected to occur in the absence of wild polio.

Overall results for polio-specific *investigation* have been less encouraging. While on the one hand more reporting physicians are requesting virology investigations, on the other hand, final laboratory results remain suboptimal. Of the 61 AFP confirmed cases in 1999, only 25 (40.9%) cases had an adequate stool culture (i.e., stool specimen collected within two weeks of the onset of paralysis). Out of the 25 cases, only 16 cases were negative for poliovirus and other enteroviruses, while 9 cases had unknown results. These figures remain significantly lower than the World Health Organization's targeted rate of 80%.

The frequency of stool investigation for AFP cases falls far below expectation, particularly when compared with the World Health Organization (WHO) report on global eradication.¹ The reported frequency of 40.9% through the CPSP is 40% less than that reported for both the American Region (68%) in 1999 and the global frequency (67%). Further, five of the six WHO regions report frequencies from 68% to 86% (31% in the African Region). All of the WHO frequencies are based on two stool specimens (as required prior to the elimination of wild virus transmission) and therefore make the low frequency in Canada based on one specimen even more dismal.

RESOURCES



As well as providing information on the progress made to date, this update therefore serves as a reminder to all reporting paediatricians, paediatric infectious disease specialists, neurologists and laboratory directors that in addition to neurological investigations, evidence of adequate polio-specific laboratory investigations (even with negative results) is vital to the evaluation of AFP cases. Prompt collection and laboratory processing of stool and serum specimens is paramount, particularly as a differential diagnosis of poliomyelitis will often not be considered during the initial stages of case management.

A protocol for the investigation of AFP and suspected cases of paralytic poliomyelitis has been published² (and may be accessed electronically via the Internet at http://www.hc-sc.gc.ca/hpb/lcdc/bid/di/polio_e.html).

The protocol emphasizes that **the single most important laboratory investigation for the diagnosis of paralytic poliomyelitis is a stool specimen collected within two weeks of the onset of paralysis for isolation of wild or vaccine strain poliovirus**. Whenever possible, polio-specific serological tests should be considered; a probable or confirmed diagnosis of paralytic poliomyelitis can be made with evidence of a fourfold or greater rise in poliovirus antibody titre in paired sera and/or the presence of poliovirus-specific IgM antibody.

The CPSP appreciates the interest of all paediatricians in AFP surveillance and the contribution of case reports. Reporting paediatricians who have questions about the eligibility of cases or the reporting mechanism may contact the CPSP Coordinator (Ms. Andrea Medaglia: tel. 613-526-9397, ext. 239, fax 613-526-3332), or Study Investigator (Dr. Paul Varughese: tel. 613-957-1344, fax 613-998-6413 or 952-7948).

References

1. World Health Organization. Progress Towards Global Eradication of Poliomyelitis, 1997. *MMWR* 1998;47:414-19.
2. Working Group on Polio Eradication, Bentsi-Enchill A. Protocol for the investigation of acute flaccid paralysis and suspected paralytic poliomyelitis. *Paediatr Child Health* 1997;2:409-12.

Editorial note: This article was first printed and distributed to CPSP participants in 1998.