

PAEDIATRIC ACTIVE ENHANCED DISEASE SURVEILLANCE (PAEDS)

Study Protocol – Acute Flaccid Paralysis (AFP)

BACKGROUND

Acute Flaccid Paralysis is defined as the acute onset of *flaccid paralysis in one or more limbs* or the acute onset of *bulbar paralysis*. It may be caused by anterior horn cell infection with wild or vaccine polio virus or with other viruses eg Enterovirus 71. Guillain-Barre Syndrome, transverse myelitis and traumatic paralysis are other causes.

The classification criteria for AFP as defined by the World Health Organisation (WHO) are as follows: ¹

- i. Poliomyelitis: an AFP case with wild polio virus isolated
- ii. Non-polio AFP: and AFP case with adequate stool specimens testing negative, or with no residual paralysis except if wild virus is isolated.
- iii. Polio-compatible: an AFP case with residual paralysis, who died or was lost to follow-up and for whom stool specimens were either not taken, or were inadequate.

Polio is a vaccine preventable disease. In order for a country to be declared polio free it needs to meet a number of requirements including polio vaccine coverage of more than 80%, adequate surveillance and investigation of suspected polio cases and no confirmed cases for 3 years ¹. WHO considers adequate surveillance to be the detection and investigation of all cases of Acute Flaccid Paralysis.

In order to confirm that surveillance is adequate to detect cases of wild poliovirus WHO has set a target of one case of AFP per 100,000 children under 15 years of age and that 2 stool specimens (collected 24 hours apart and within 2 weeks of onset of paralysis) per case should be tested for poliovirus by culture. These specimens are forwarded to the Victorian Infectious Diseases Laboratory (VIDRL) for exclusion of poliovirus as a cause of AFP. Since 1995 Australia has achieved this target in 2000, 2001 and 2004 in regard to notifications of AFP cases but has frequently failed to meet the target in respect of adequate stool collection for poliovirus culture.^{2,3} The PAEDS network should be well-placed to ensure timely identification and stool collection in the participating hospitals and demonstrate feasibility of wider application of this approach in monitoring AFP.

STUDY OBJECTIVES

1. To determine the incidence of AFP.
2. To determine whether AFP is caused by Polio virus infection and if so whether it is wild or vaccine strain Polio.
3. To determine other causes of AFP.
4. To determine the clinical picture of AFP, including outcome of non-polio AFP.

CASE DEFINITION AND REPORTING INSTRUCTIONS

Any child less than 15 years of age with:

Acute Flaccid Paralysis ie onset of flaccid paralysis in one or more limbs or
Acute onset of bulbar paralysis.

Causes of AFP

Peripheral neuropathy

Guillain-Barre syndrome
Acute axonal neuropathy
Neuropathies of infectious diseases

Anterior horn cell disease

Acute poliomyelitis
Vaccine associated poliomyelitis
Other neurotropic viruses

Muscle disorders

Polymyositis, dermatomyositis
Trichinosis
Periodic paralyses
Corticosteroids and blocking agents
Mitochondrial diseases (infantile type)
Post viral myositis

Acute myelopathy

Demyelinating diseases
Transverse myelitis
acute disseminated encephalomyelitis (ADEM)
Spinal cord ischaemia
Spinal cord injury
Peri-operative complication
Systemic disease
Acute porphyria
Critical illness neuropathy/myopathy
Conversion disorder

Disorders of neuromuscular transmission

Botulism
Insecticide (organophosphate poisoning)
Tick bite paralysis
Snake bite

Other (please specify)

All case will require a PAEDS AFP questionnaire to be completed and a notification to the Poliovirus Reference Laboratory made. Two stool specimens 24 to 48 hours apart are to be collected within the first 2 weeks after onset of paralysis. The stool sample should be sent to the National Polio Reference Laboratory for viral testing.

Stool specimens are to be collected in sterile containers and each specimen should be approximately five grams. Store the specimens at 4⁰C until ready to send. If the shipment cannot be sent for 72 hours, freeze the specimens. Complete an AFP specimen laboratory request form to be included in the shipment. The specimens should be sent via you local hospital pathology referral department with the request that the shipment be packaged according to IATA PI 650 and classified as UN 3373 biological substance category B. The shipment should be sent by overnight courier, with sufficient ice bricks to keep the specimens chilled while in transit. Dry ice is not needed⁴.

CASE NOTIFICATION:

AFP cases should be notified to VIDRL as soon as the patient has been recruited. An email containing the following information should be sent to polio@mh.org.au:

First two letters of patients' first and family name
Sex
Date of birth
Date of onset of paralysis
Site of paralysis
Provisional diagnosis
Name of clinician in charge of case

PLEASE SEND SPECIMENS TO:

Poliovirus Reference Laboratory Victorian Infectious Diseases Reference Laboratory (VIDRL)

10 Wreckyn Street
North Melbourne Victoria 3051

Telephone: (03) 9342 2607
Facsimile: (03) 9342 2665
Email: polio@mh.org.au

Notify the Polio Reference Laboratory of the impending shipment.

INVESTIGATORS

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RERERENCES

1. WHO Regional Office for the Western Pacific. Report of the interim meeting of the Technical Advisory Group on the Expanded Programme on Immunisation and Poliomyelitis Eradication. Beijing, China October/November 1994.
2. Thorley BR, Brussen KA, Stambos V, Yuen LK, Helly HA. Annual report of the Australian National Poliovirus Reference Laboratory and summary of acute flaccid paralysis surveillance, 2001. *Commun Dis Intell* 2002; 26: 419-427.
3. Australian Paediatric Surveillance Unit. *Annual Report* 2004;17
4. VDURL. Referral of stool specimens for AFP cases to the National Poliovirus Referene Laboratory.