Acute Flaccid Myelitis (AFM) Quicksheet

May 2022

Acute Flaccid Myelitis

In 2012, CDPH began receiving reports of patients with acute flaccid myelitis (AFM). Since then, there have been statewide and nationwide spikes in AFM cases noted in the summer and fall months of 2014, 2016 and 2018.

AFM patients are primarily children, although cases have also been reported in adults. Symptoms typically include a preceding febrile respiratory illness followed by sudden onset of limb weakness and loss of muscle tone and reflexes. In addition to limb weakness, some patients have cranial nerve involvement and present with facial droop/weakness, difficulty moving the eyes, drooping eyelids, or difficulty with swallowing or slurred speech.

Although a definitive cause for AFM has not yet been established, experts think many cases are due to viral causes, which include non-polio enteroviruses (EV-D68, EV-A71), flaviviruses (West Nile virus, Japanese encephalitis virus), herpesviruses, and adenoviruses. To better understand the potential causes, optimal treatment, and outcomes of AFM, CDPH is conducting enhanced surveillance for AFM cases. Enhanced surveillance includes viral testing at CDPH Viral and Rickettsial Diseases Laboratory (VRDL) to identify causes of AFM.

Reporting AFM cases

1. **Clinicians should report any person with onset of acute flaccid* limb weakness** to patient's local health department (LHD) regardless of laboratory testing or MRI results.

2. Clinicians should collect specimens for potential public health testing and order a spinal MRI as soon as possible. Collect serum, CSF, nasopharyngeal swab, oropharyngeal swab and two stool specimens (collected 24 hours apart). Pathogen-specific testing should also continue at hospital laboratories as determined by the patient's clinical picture.

3. Work with the LHD to:
   - complete the AFM Patient Case Summary Form;
   - submit MRI reports and images;
   - submit neurology consult notes; and
   - submit specimens to the CDPH VRDL to hold while the LHD obtains CDPH approval for laboratory testing.

Please also report:

- Any person whose death certificate lists acute flaccid myelitis as a cause of death or a condition contributing to death.
- Autopsy findings that include histopathologic evidence of inflammation involving the anterior horn of the spinal cord spanning ≥1 vertebral segment.

Contact CDPH at 510-620-3737 for assistance with reporting or request for clinical consultation.

Specimen Collection and Submittal

Collect specimens for suspect cases as **early as possible** in the course of illness, preferably on the day of limb weakness onset, to increase the chance of virus detection. Please work with your LHD to submit specimens to CDPH VRDL to hold while the LHD obtains CDPH approval for laboratory testing. Clinicians should electronically complete a General Purpose Specimen Submittal Form for each individual specimen and include printed copies when shipping to CDPH VRDL.
Please collect and submit to VRDL all 5 of the following specimens:

1. **Nasopharyngeal swab in viral transport media**, or nasopharyngeal wash or aspirate (in sterile collection tube)
2. **Oropharyngeal swab in viral transport media**

3. **CSF** (2-3cc, if available, in sterile collection tube)
4. **Serum** (acute and convalescent), collected **prior to** treatment with IVIG, (2-3 cc in red or tiger-top tube)
5. **Two stool specimens** (two quarter-sized amounts in a sterile wide-mouth container) collected 24 hours apart

Samples may be sent on dry ice or cold pack for delivery Tuesday through Friday to:
CDPH VRDL
ATTN: Specimen Receiving
850 Marina Bay Parkway
Richmond, CA 94804

For questions about specimen submittal or shipping to CDPH VRDL call: 510-307-8585.

Specimen Testing
VRDL will perform molecular testing for SARS-CoV-2, enterovirus, rhinovirus, and adenovirus. VRDL will also perform serologic testing for West Nile virus (during transmission season May-December), St. Louis encephalitis virus (SLEV) (in counties with SLEV environmental detection), and Zika, Dengue, and Chikungunya viruses (if indicated by travel history). Additional testing will also include metagenomics, host biomarker analysis, pathogen discovery and comprehensive antibody testing. Results from these tests should not inform clinical management of patient because results may not be available in real-time.

Infection control precautions for suspected or confirmed AFM cases
The CDC recommends standard, contact and droplet precautions for suspected or confirmed AFM cases.

CDC/CSTE AFM Case Definition and Classification
The 2021 CSTE AFM case definition will be used to assign a case classification after review by a team of neurologists at CDC and should not be used to decide whether to report a patient**. CDC's case classification is not meant to override a clinician's diagnosis, or the patient's treatment and rehabilitation plan.**

Clinical Criteria
- An illness with onset of acute flaccid* weakness of one or more limbs
  AND
- Absence of a clear alternative diagnosis attributable to a nationally notifiable condition

Laboratory/Imaging Criteria
Confirmatory laboratory/imaging evidence:
- MRI showing spinal cord lesion with predominant gray matter involvement** and spanning one or more vertebral segments
  AND
- Excluding persons with gray matter lesions in the spinal cord resulting from physician-diagnosed malignancy, vascular disease, or anatomic abnormalities

Presumptive laboratory/imaging evidence:
- MRI showing spinal cord lesion where gray matter involvement** is present but predominance cannot be determined
  AND
- Excluding persons with gray matter lesions in the spinal cord resulting from physician-diagnosed malignancy, vascular disease, or anatomic abnormalities

Supportive laboratory/imaging evidence:
- MRI showing a spinal cord lesion in at least some gray matter** and spanning one or more vertebral segments
  AND
- Excluding persons with gray matter lesions in the spinal cord resulting from physician-diagnosed malignancy, vascular disease, or anatomic abnormalities

Other Classification Criteria

- Autopsy findings including histopathologic evidence of inflammation largely involving the anterior horn of the spinal cord spanning one or more vertebral segments.

Case Classifications

Confirmed:

- Meets clinical criteria with confirmatory laboratory/imaging evidence
  OR
- Meets other classification criteria.

Probable:

- Meets clinical criteria with presumptive laboratory/imaging evidence.

Suspect:

- Meets clinical criteria with supportive laboratory/imaging evidence
  AND
- Available information is insufficient to classify case as probable or confirmed

Additional Resources

- AFM Infographic: Recognizing, testing, and reporting for California clinicians (CDPH PDF)
- AFM Clinical Management (CDC webpage)
- AFM Patient Case Summary Form (CDPH PDF)
- General Purpose Specimen Submittal Form (CDPH PDF)

*Low muscle tone, limp, hanging loosely, not spastic or contracted.

**Normal or negative MRI imaging within the first 72 hours of limb weakness onset does not rule out AFM. Terms in the spinal cord MRI report such as “affecting mostly gray matter”, “affecting the anterior horn or anterior horn cells”, “affecting the central cord”, “anterior myelitis” or “poliomyelitis” would all be consistent with this terminology. If still unsure that this criterion is met, then consider consulting the neurologist or radiologist directly.