ACUTE FLACCID MYELITIS

What is it?

Acute flaccid myelitis (AFM) is a serious condition affecting the motor neurons in the spinal cord; more specifically the gray matter of the spinal cord controlling the body's muscles and reflexes. AFM is characterized by rapid-onset flaccid weakness in one or more limbs. In most cases, this 'polio-like' illness affects children and presents after an unremarkable upper respiratory or gastrointestinal illness. More than 90% of AFM patients experienced a mild respiratory illness or fever consistent with a viral infection before they developed AFM. Documented clinical presentations of AFM have included vague precursor illness symptoms 1-2 weeks before muscle weakness onset. Neurological symptoms including limb weakness, stiff neck, headache, and pain rapidly develop and quickly progress over hours or days. Other rare symptoms can include numbness or tingling in the limbs, inability to pass urine, facial droop, difficulty moving eyes, drooping eyelids, slurred speech, or difficulty swallowing. The most severe symptom is respiratory failure. Most AFM cases have been diagnosed in previously healthy children with a median age of 4-6 years and most often during late summer to fall; August to October. A diagnosis is often unclear with initial presentation and children are often misdiagnosed before returning with more emergent symptoms. There is no current profile to predict who may be at higher risk to develop AFM and long-term effects are currently being researched. The CDC continues to investigate AFM cases since 2014.

What causes it?

The cause of AFM is not contagious but the viruses believed to cause or trigger AFM may be. Since most cases of AFM circulate with many other viruses during cold season, decreasing a child's risk of getting a viral infection may be their best protection. Current research emphasizes supportive care and recommendations focus on education and basic infection prevention.

AFM was first recognized in 2010 but gained attention in 2014 with its first large outbreak. Although the etiology of AFM is unclear, the most common link is viral. In 2014, the initial cluster of AFM cases were linked to an occurrence of enterovirus D68; a respiratory illness. Since 2014, "seasonal waves" of AFM have been cyclical, spiking every 2 years in the United States. When AFM cases again peaked in 2016, links with enterovirus A71, adenovirus, rhinovirus, and herpesvirus were also detected. Although most patients diagnosed with AFM have experienced a respiratory illness or fever, the CDC continues to investigate other causes like environmental toxins or a genetic link making one person more susceptible than another.

AFM is categorized as a subtype of acute flaccid paralysis (AFP). As an umbrella term, it can be difficult to differentiate AFM from other neurological disorders because of mimicking symptoms. AFM may resemble Guillain-Barre syndrome, acute transverse myelitis, ADEM, conversion disorder, stroke, tumor, cord compression, or limb injury. Without a definitive organism cause for AFM, clinicians are relying on careful examination as well as magnetic resonance imaging (MRI) and lab testing of cerebrospinal fluid (CSF) for diagnosis. AFM patients have consistently experienced inflammation of the gray matter in the spinal cord and elevated white blood cell counts.

What is the treatment?

Currently there is no specific therapy or intervention for the treatment or management of AFM. Intravenous immunoglobulin (IVIG) has been widely used. The use of steroids or plasma exchange has yielded mixed support. A complex surgery involving nerve transfer has been successful in some cases to help restore movement in those with paralysis.

Early and intense rehabilitation including speech, physical, and occupational therapy has also been effective with restoring function in the nervous system. Activity-Based Restorative Therapy (ABRT) uses a high intensity, repetitive approach to drive the central nervous system's ability to spontaneously regenerate after spinal cord injury. Follow-up cases range from restoration of full function to complete dependence on caregivers. The majority of patients experience persistent residual motor deficits.

Kennedy Krieger Institute

The **Specialized Health Needs Interagency Collaboration (SHNIC)** program is a collaborative partnership between the Kennedy Krieger Institute and the Maryland State Department of Education.

School health plays an important role in early awareness and advocacy of AFM. School nurses should be vigilant for possible cases by identifying AFM symptoms. Gathering a history of any recent respiratory or GI illness, regardless of fever will be helpful when referring for further assessment. A diagnosis of AFM should be considered when a child complains of extremity weakness, especially with a history of febrile respiratory illness. Assess for recent symptoms that could include pain in extremities, neck, or shoulders; changes in bowel (particularly constipation) or bladder; changes in appetite; difficulty moving eyes or drooping eyelids; difficulty swallowing or slurred speech; or sudden arm or leg weakness .

Suggested school accommodations

It is important for all school staff to understand the child's present level when returning to school following a diagnosis of AFM. Supporting students with these conditions in the school require educators and parents/guardian to work as a team. Some accommodations to consider for a 504/IEP could include:

- PT/OT/SLP evaluation
- Use of assistive technology
- Consider classroom location
- Monitor for anxiety and fatigue
- Extra time
- Preferential seating
- Modified school day
- Plan for absences and make-up work
- Peer support
- Staff education and training as appropriate
- Emergency Evacuation Plan (EEP)

Specific health issues for Individualized Healthcare Plan

- Diagnosis and complete history
- Current medication list, including PRN medications
- Respiratory orders if applicable (including equipment needs for tracheostomy, ventilator, suctioning)
- Nutrition orders if applicable (including use of feeding tube and/or tube replacement policy)
- Toileting schedule
- Catheterization orders, if applicable (including catheter size, equipment needs)
- Orthotics/splints, consistent skin checks
- Pressure relief techniques, positioning restrictions, transfer technique
- Temperature regulation considerations in school setting and transportation
- Equipment troubleshooting (including use of a power wheelchair, battery life, etc.)
- Communicate with school staff, parents/guardian, and provider any changes or concerns about the disease
- Emergency Care Plan(s) related to medical needs in the school setting and staff education/training as appropriate for each

Resources & Manuals

Centers for Disease Control and Prevention– Acute Flaccid Myelitis
https://www.cdc.gov/acute-flaccid-myelitis/index.html

Kennedy Krieger Institute– Acute Flaccid Myelitis
https://www.kennedykrieger.org/patient-care/conditions/acute-flaccid-myelitis-afm

Siegel Rare Autoimmune Association
https://wearesrna.org/

Betsy, T. (2019). Acute flaccid myelitis: An ongoing investigation. *AJN, 119*(2), 60-62.

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