

## International Journal of Innovative Research in Science, Engineering and Technology

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# A Survey on Occurance, Causes, Symptoms, Diagnosis and Treatment of Acute Flaccid Myelitis

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**ABSTRACT:** Acute flaccid myelitis is a disease which found to affect children mostly than adults. It's exact cause was still unknown but to some extent it was believed due to viral infection ,this infection is found to effect the spinal cord leading to paralysis .Mostly the disease is found to develop in children after a viral infection ,it is difficult to diagnose as the symptoms initially was similar to that of flu & exact treatment was not known. Research is still going on for correct treatment . And the case was increasing day by day, presently it was treated by immuno-globulins (IGg) & anti viral therapy , soon the exact treatment will come to force, hence preventing the disease is the best option, by maintaining hygienic condition.



Children affected with  
Acute Flaccid Myelitis

**KEYWORDS:** Acute flaccid myelitis, paralysis, Immunoglobulins, Anti- Viral Therapy.  
**ACUTE FLACCID MYELITIS ( A rare but devastating disease )**

### I. INTRODUCTION

Acute flaccid myelitis is a rare but Serious illness, it mainly affects the Nervous system specifically the area of spinal cord called" GRAY MATTER ", which causes the muscle & reflexes in the body to become weak.

- We have seen increase in AFM cases for every 2 years Since 2014.
- Mostly young children are found to mostly affected after a any common viral infection like polio, influenza, enterovirus etc...
- Still now also the exact cause of AFM is unclear, it is still a dilemma
- But it was noticed that 90 %of cases was followed by a mild viral infection.
- Underlying mechanism was found to damage to the 'grey matter 'of spinal cord.
- Most of the patient will experience respiratory illness, fever, cough & cold before their limbs are affected.

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- Other causes of AFM include environmental toxins & genetic disorders.

★ WHO ARE MOSTLY AFFECTED BY AFM?

Any one of any age can be affected by AFM but most commonly it was seen in children.

## II. CAUSES

Still the exact cause of AFM is unknown, but we think viruses, likely "enteroviruses" play a role in AFM. And only a small number of people develop AFM after viral infection while others recover.

All the stool specimens collected from the AFM Patients show "NEGATIVE TEST FOR POLIO VIRUS."

- Some of the factors which are considered to cause are as follows :-
  1. Direct infection of a virus on motor neurons
  2. Indirect infection where a virus may lead to an inflammatory or immune response directed towards motor neurons.
  3. Host genetic factor in which some children are more susceptible than others.

INCREASE IN CASES BETWEEN AUGUST AND OCTOBER

Most patients had onset of AFM in August & October, as many viruses circulate between August & October, including enterovirus & leads to AFM. CDC is working with national partners to understand the annual circulation of enteroviruses, including EV-D68, & its association with AFM.

The large number of AFM in the year 2014 coincided with a national outbreak of severe respiratory illness caused by EV-D68. CDC tested various samples for detection of cause from affected individuals, they found Coxsackie virus A16, EV-A71 & EV-D68 in spinal fluid of 4 out of 570 confirmed cases of AFM since 2014. While in other patients there is no pathogen has been detected in their spinal fluid examination. And all the stool tests from AFM patients reported negative for polio virus.



Structure of EV-D68

## III. SYMPTOMS

Sudden "arm or leg weakness and loss of muscle tone & reflexes" is the most common symptom seen in AFM.

**Some people will also show:**

- Facial drop or weakness
- Difficulty in moving eye.
- Drooping eyelids
- Difficulty in swallowing
- Slurred speech.
- Pain in arms or legs.

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Facial droop or weakness



Difficulty moving the eyes or drooping eyelids

In rare cases people may also experience:

- Numbness or tingling sensation
- Unable to pass urine (pee)

THE MOST SEVERE SYMPTOMS OF AFM INCLUDE:



Respiratory failure - This happens when the muscle involved in breathing become weak and can require ventilator.



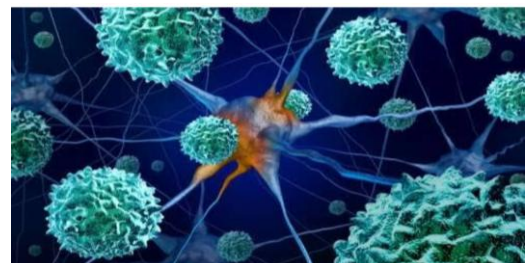
Serious neurologic impairment like seizures etc.,

## IV. PREVENTION

Since we don't know the exact cause of the disease or triggers of the condition, there is no specific action to take to prevent AFM . However, most children are found to have respiratory illness or fever consistent with viral infection before they developed AFM .

YOU CAN DECREASE THE RISK OF GETTING VIRAL INFECTION BY FOLLOWING WAYS :

- Washing hands often with soap & water
- Avoid touching face with unwashed hands
- Avoid close contact with patients who has fever, cold or any other respiratory illness.



neurologic condition  
representing enterovirus

YOU CAN DECREASE THE SPREAD OF VIRAL INFECTION BY :

- Cleaning & disinfecting frequently touched surface including toys & door knobs
- Covering cough & sneeze with tissue or kerchief rather than with hands
- Keeping sick children at home

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## V. LABORATORY TEST

CSF ( Cerebrospinal fluid ) examination is performed to detect the presence of any pathogen, like viruses in the spinal fluid .

## VI. DIAGNOSTIC TEST

AFM is diagnosed by examining a patient's nervous system in combination with reviewing pictures of spinal cord.

### ★ EXAMINATION OF NERVOUS SYSTEM -

A doctor examines the Nervous system and the places on the body where he /she has weakness, poor muscle tone & weakness.

❖ Do an MRI :- It is performed to look at the patient brain & spinal cord.

❖ Nerve conduction : To detect the impulse along the nerve fibre.

AFM can be difficult to diagnose because it shares many of the same symptoms as other neurological disease like , "Transverse myelitis"& Guillian - Barre syndrome ,hence with the help of laboratory test & diagnostic test AFM can be distinguished among this two disease.

## VII. TREATMENT

There is no specific treatment for AFM, physical & occupational therapy to restore movement is seen as being very important .

- ★ Mostly the patients are treated with "Immunoglobulins", anti - viral drugs and steroids .
- ★ "Physiotherapy" is given to the patients in order to recovery from paralytic condition.
- ★ Ventilation is necessary in emergency condition , where the child can't able to breathe properly .



## VIII. CONCLUSION

Hence based on our survey, it was found that the percentage of disease affecting the children is increasing every year. But still the exact cause of this serious illness is unknown. The research is still on process and the children are Found to be the most affected ones when compare to adults. It was assumed that it was due to some viral infection, as upon CSF examination of the infected children about 20% out of 90 shows EV-D68 +ve . It is difficult to diagnose since if symptoms is similar to that of common flu , cold & other viral infection, common symptoms is sudden loss of muscle bone & weakness. It is diagnosed by examining patients nervous system along with MRI, brain & spinal cord imaging, CT , nerve conduction. Preventing the disease is the best way to keep the children away from this devastating disease AFM. Treatment is still unknown , but patient in present were treated with Immunoglobulins, Anti-viral therapy & Corticosteroids.

## REFERENCES

1. New CDC vital signs report focuses
2. on 2018 AFM outbreak .
3. A novel outbreak of EV - D68
4. strains associated with AFM case in US (2012-14)
5. Acute neurological illness of unknown etiology in children Colorado , Aug - Sep 2014
6. Notes from the field : cluster of AFM in five pediatric patient - Maricopa county ,Arizona 2016,MMWR ,July 21 - 2017



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7. AFM a clinical review of US cases (2012-15) annals of neurology , June 14 2017
8. AFM : Etiologic challenges , diagnostic & management consideration ,current treatment option in neurology.
9. Acute flaccid myelitis : keys to diagnosis , questions about treatment & future direction ,JAMA pediatric Nov 30 ,2018
10. <https://medlineplus.gov/AFM>
11. <https://www.cdc.gov/about/AFM>
12. <https://en.Acute flaccid myelitis Wikipedia ...>