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Review on Tomato Flu: The Unexpected Virus that's Causing Concern

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Abstract :The Tomato Flu Virus is also known as 'Hand,Foot and Mouth Disease'.It is an unidentified virus,source of the contagious ailment known as tomato flu. The origin of the term "tomato virus" starts from the blisters that resembles tomatoes and spread over the body, eventually developing into a rash that resembles a tomato and also caused by the A-16.It primarily impacts on children's body.Though the exact etiology of the aliment is unknown.As of this now,there are no antiviral drugs or vaccines specifically designed to treat tomato flu. As a result, symptomatic therapy is the only option for this sickness.
Keywords: A-16, Blisters, Hand, Foot and Mouth Disease, Symptomatic therapy,Tomato flu virus.

I. INTRODUCTION

Since March 2020, Everyone has been living in encompasses indoor spaces where they are going to be safe from the viruses. Although the COVID-19 pandemic and undetectable presence of monkeypox infections are managed,In this,restrictions being less strict and life is returning into normal routine,a new wave of fear has caused especially in youth i.e is Tomato Flu[1].The viral illness is more common in children's and soo that the tomato viruse more likely exposed in the children's and distributed by intimate touch.

Reports have revealed that tomato fever is a self-limiting condition which is predominantly meant for infants and children aged one to ten years and people with weak immunity. India documented over 100 tomato fever cases in predominantly in four different states – Haryana, Odisha, Kerala and Tamil Nadu even Maharashtra also[2].

Children are more prone to contract the tomato flu since infections with viral genomes are prevalent for young children and are most likely to spread through close contact[3].By touching unclean surfaces, changing diapers, and putting items straight in their mouths, young children might become infected with this virus [4]. Tomato flu transmission can have major repercussions if outbreaks in children are not managed and avoided, as it bears similarities to Chikanguniya[5].

A mother who gets the virus just before giving birth could pass it on to her infant. If the mother has an enterovirus infection at the time of birth, the newborn is more likely to become infected. The majority of newborns infected with enteroviruses only suffer from a minor illness, but in a small number of cases, the infection can progress to a critical state, affecting vital organs such as the liver or heart, and ultimately leading to death[5].

II. EPIDEMIOLOGY

In Kollam district of Kerala, the first patient of tomato was reported on 6 May 2022. The local government had find out that the virus is identified in 82 children's under the duration upto five years.The various other places of Kerala was affected by this viruse are Neduvathur,Anchal and Aryankavu, & because of this the neighbouring states like Tamil Nadu & Karnataka were altered.Additionally this viruse is detected in Odisha state,in 26 Children's under the duration age of one- nine years[1].



Fig 1:-Geographical Distribution of tomato flu virus in india.

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According to the Department of Regional Medical Research in Bhubaneswar, the viruse had only affected at the 3 places i.e Kerala, Tamil Nadu and Odisha; no other regions of India have been affected[2]. To stop the spread of viral infection in different regions of India, the Kerala Department of Health was taking precautions about it.

In past, fatal occurrences of HFMD were linked to the Tomato flu virus Coxsackie Virus A16 in mainland of China, France, Japan, Taiwan & the US.In 2010, Shenyang, China reported 92 instances of HFMD with neurological impairment.Nineteen cases with two cases of brainstem encephalitis & one case of acute flaccid paralysis were linked to CV- A16 virus[6].

Analogy Between Other Illeness & Tomato flu:Blisters can mimic monkeypox and as well as chickenpox, and the primary signs of tomato flu in kids are believed to be similar to as a chikanguniya virus or dengue[1].A comprehensive clinical examination and laboratory tests should be conducted to rule out viral illnesses such as dengue or chikanguniya. One of the main differences between monkeypox and tomato flu, a kind of HFMD, is that the former is rare in children.

HFMD rashes primarily affect the palms, soles, and mouth. Rashes on the buttocks and thighs are possible, but getting throughout the body is unusual[6]. They are often not serious and resolve on their own.Monkeypox causes a rash that spreads from head to toes. Typically, the face, genital region, palms, and soles are affected. Rashes often emerge one to three days after fever onset and might last for two to four weeks[1].

Clinical Features:Various clinical characteristics have been noted in previous HFMD epidemics worldwide, according to the virulence of the virus causing the outbreak[6].

According to UK Article: In May 2022, a 13-month-old girl and her older 5-year-old brother had rashes on their hands and legs a week after returning from a month-long family trip to Kerala[2]. The Keralan regional media during their tour reported on a peculiar illness known as “tomato fever” that was plaguing young people[4]. Playing with children with those who was recently getting back from the “tomato flu,” the boy avoided interacting with sick children. A week after coming back to United Kingdom, the two children grew up with the vesicular rashes, although the girl’s was more obvious. Neither youngster had a fever or any further clinical signs.

Two days after the spots that appear on the boy was started to heal, the daughter developed a serious oral lesion that made her salivate a lot. Both children visited the pediatric emergency center, where PCR was used to test viral samples. Both children underwent an enterovirus (EV) test.Because the rash,looked like meaty vesicles, a national standard lab tests also tested the girl’s samples for monkeypox (UK’s Porton Down, Salisbury).The mother’s monkeypox amplification of DNA came out negative, but both children’s EV amplification of DNA came back positive. EV type was done by Coxsackie A16.On Day 6 for the child and Day 16 for the baby, the wounds were almost totally healed with no apparent scarring[7].

III. SYMPTOMS

Little red spots start to emerge on the body one to two days after the fever starts, and they gradually develop into blisters and ulcers[5,8].



Fig 2: Rashes on hand of the Patient.



Fig 3:Blisters & Rashes by Tomato Flu.

The lesions are typically found on the tongue, inside of the cheeks, gums, palms, and soles, though they can occur elsewhere on the body.There is no rapid economic growth in the body in a centripetal or centrifugal pattern. These blisters can get as big as a tomato and are painful and red. The huge blisters could be caused by an infection with a novel CV-A16 type[9].

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Additional investigation is necessary to validate this hypothesis.

Flu-like symptoms like;

1) Fever
2) Coughing
3) Sneezing
4) Nausea
5) Dehydration
6) Swollen joints
7) Anorexia (lack of appetite)
8) Body ache
9) Rhinorrhea (runny nose) ➢ Discolouration of the hands ➢ Knees and Buttocks[6].

IV. DIAGNOSIS

In order to confirm the diagnosis of "tomato flu," children exhibiting the various symptoms undergo molecular and serological testing to rule out zika virus, dengue, chikungunya, and the virus varicella and herpes[2],[9].In outbreak areas, a history and physical examination can also be used to provide a clinical diagnosis.

V. PREVENTION

Prevention is crucial in the event that an unknown virus unexpectedly spreads. If everyone correctly follows preventative measures, the repercussions of an outbreak can be easily addressed.The infectious agents can remain in children's bodies for weeks after the illness has passed, making them potential carriers[2],[6].So, Here are few precautions that will protect from the tomato flu virus:

1) Drinking extra boiled water, juices, and other liquids will help keep the body well hydrated.
2) Educating kids about the virus and how it affects the body.
3) Patients should also avoid touching blisters, practice good personal hygiene, and physically avoid suspicious situations to stop the illness from spreading.
4) The long-lasting symptoms of the flu caused by tomatoes can be avoided by getting enough sleep.
5) Like other viruses, the tomato flu spreads quite easily. To halt the virus's transmission, it is imperative to appropriately isolate any confirmed or suspected tomato flu cases and put additional protective measures in place.
6) To stop the preventing the virus from infecting youngsters or adults, isolation should be utilized for five to seven days after symptoms appear.
7) Maintaining good hygiene, cleaning the environment, and preventing a sick kids from sharing things with other kids, such as toys, clothes, food, etc. who aren't sick are the greatest ways to prevent infection.

The fight against this illness outbreak depends on raising public awareness of the situation. By teaching people how to recognize flu symptoms and how to treat them, fliers, door-to-door education, local village meetings, and the media can all help raise awareness[2],[9].

VI. TREATMENT

Treatment is necessary & can also avoid from other circumstances;

1) Supportive therapy includes rest, hot water sponge baths to reduce rashes irritation, and increased fluid intake to stay hydrated.
2) Although there's not a particular management available, children may be prescribed antipyretic and analgesic drugs such as acetaminophen or ibuprofen, as well as other symptomatic treatments[9].
3) The purpose of vaccinations and antimicrobials:-Neither antiviral drugs nor vaccines can cure or prevent tomato flu. Furthertracking and evaluation for noteworthy results and consequences are necessary to gain a better understanding of the necessity of prospective treatments[1],[2].

Steps taken by the government: Tamil Nadu has taken the initiative of surveillance along its border in reaction to the discovery of tomato flu cases in Kerala. The Kerala government has started programs to cure the afflicted individuals in all Anganwadi and health clinics. Twenty-four mobile teams of deployed health workers are performing health screenings at the Coimbatore Anganwadi locations.

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To check individuals with fevers, three income examiner groups, medical inspectors, and police officers have been sent.The surrounding areas would receive special attention because Kerala accounts for the majority of the cases. All hospitals in nearby nations should report individuals displaying symptoms of tomato flu to their outpatient departments[2].

VII. CONCLUSION

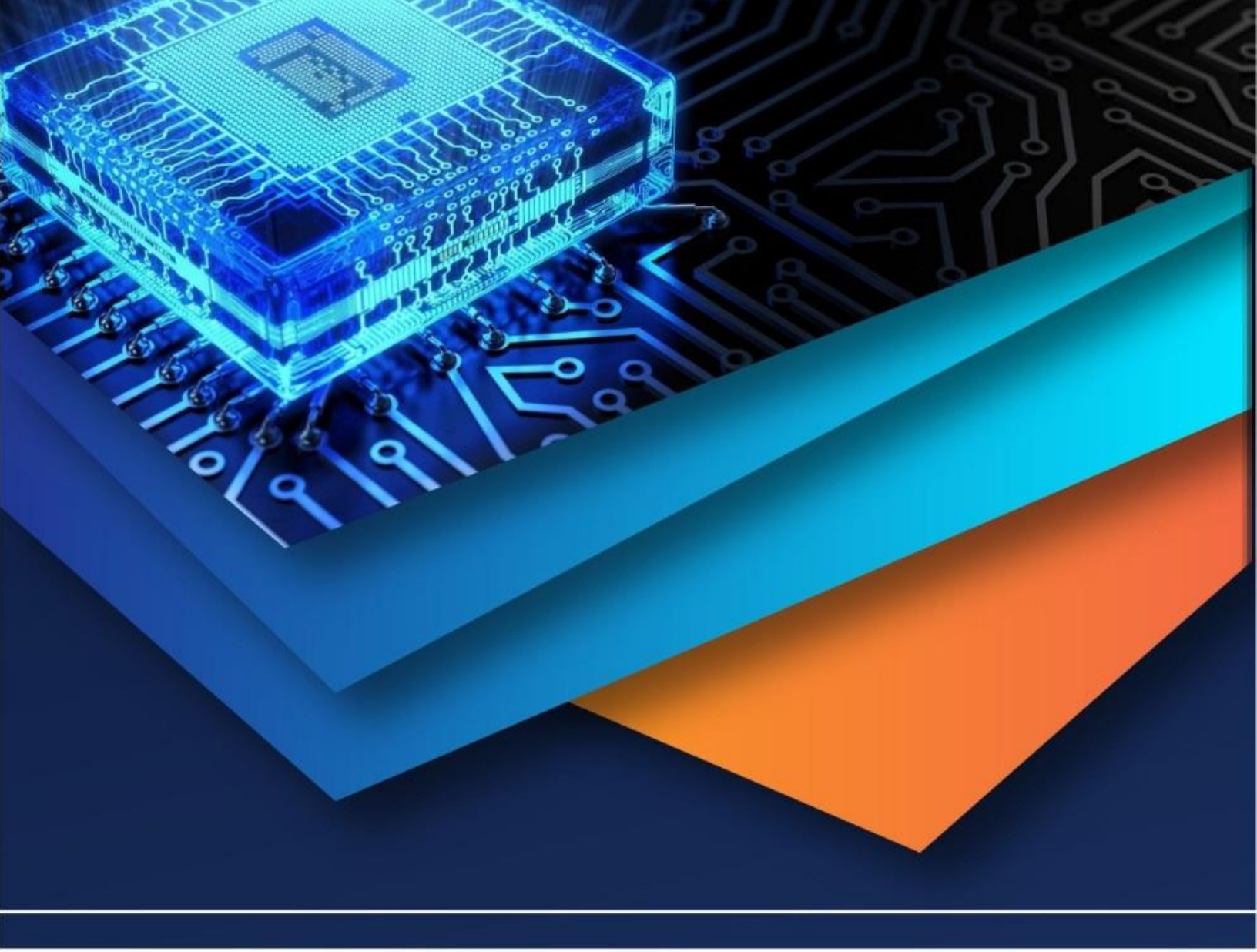
The shift in weather has led to an increase in viral infections, including the flu. Young newborns can contract the highly transmissible tomato virus through direct oral contact, diaper use, or contact with contaminated surfaces. Blisters, rashes, mouth ulcers, and other symptoms can be caused by the tomato flu. To determine whether a child has a tomato virus infection, laboratory testing is performed. In order to reduce the fever during therapy, supporting measures and drugs such as a combination of painkillers Eg:- Acetaminophen or Ibuprofen are used.

Good cleanliness, sterilising the environment, and keeping a sick child from exchanging toys, clothing, meals, or other things for the healthy children's this are the best ways to prevent infection.Neither immunizations nor antiviral medications can currently cure or prevent tomato flu. Future studies should focus on the accessibility of efficient therapy treatments and vaccines to effectively manage the pandemic.

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