



IMPACT OF THE TOMATO FLU EPIDEMIC ON INDIANS-A REVIEW

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ABSTRACT

In some areas of Kerala, a new viral illness known as tomato flu is dreaded. Around 80 state children under the age of five were already impacted as of May 11th, 2022. "The Coxsackie virus A 16 is what causes the "tomato flu." It is a member of the enterovirus family. It is regarded as one of the hand, foot, and mouth disease subtypes. Hand, foot, and mouth illness may potentially affect immunocompetent individuals, according to studies of select instances. Blisters in the shape of tomatoes that appear on various body areas are the disease's primary symptom. Tomato fever or tomato flu is the name given to the blisters, which begin as little red blisters that expand to resemble tomatoes. Additionally, the afflicted toddlers suffer from acute dehydration and skin irritation. A viral fever that self-limits, tomato flu. As a result, it typically resolves itself in 6 to 12 days. In order to rule out dengue, Zika, varicella-zoster, chikungunya, and herpes virus, they must undergo several molecular and serological testing in addition to the physical examination. The tomato flu virus is definitively identified once the likelihood of these viruses being present has been ruled out. There are no specific antiviral medications or vaccinations on the market right now to treat tomato flu. Therefore, the sole treatment for this illness is symptomatic. To wash skin or bathe a child, warm water should always be used. Eat a nutritious, well-balanced diet to strengthen your immune. It is imperative to consume enough rest and sleep properly.

KEYWORDS: - Tomato flu virus, Tomato fever, Hand-foot-and-mouth-disease (HFMD), COVID-19, Tomato pox.

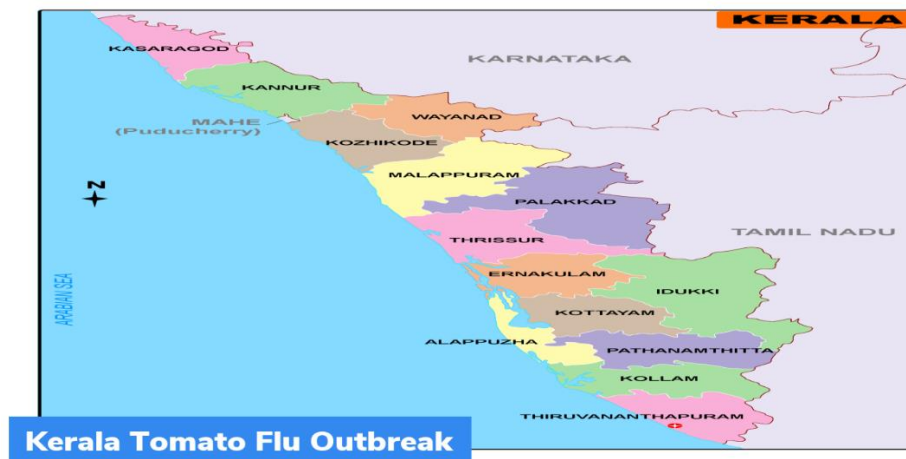
INTRODUCTION

A new viral illness known as tomato flu recently spread to several areas of Kerala. Children under the age of five make up all of the infected cases. This infection's precise origin is still a mystery. Let's look more closely at the tomato flu's signs and treatments. (8) The infection's primary symptom, tomato-shaped blisters all over the body, led to the nickname "Tomato Flu." (1) The illness initially manifests as a small, red blister that grows to mimic the shape of a tomato (2), hence the names "tomato flu" and "tomato fever." (3) On May 6, 2022, the Kollam district of Kerala reported the first case of the tomato flu; by July 26, 2022, more than 82 children under the age of five had contracted the virus. The local government hospitals have recorded cases of infection. (4) The Kerala cities of Kollam, Neduvathur, Anchal, and Aryankavu have been most severely impacted by the tomato fever. (2) The virus may also represent a novel strain of the virus that causes hand, foot, and mouth disease, a widespread infectious disease that primarily affects children and adults with weakened immune systems. In some case studies, immune-competent adults have even developed the condition. Whether tomato fever is a viral illness, a complication of Chikungunya or Dengue fever, or both, is still unknown. (2) Tomato fever incidents have historically been reported in Kerala in 2007. At the time, there were several cases of infection in the Chikungunya-affected communities of Mudakayam, Varzur, and Kanirapally in the districts of Kottayam and Pathinamtita. (6) Coxsackie A16 (CA16), EV A71, Coxsackie A6, Coxsackie B, and Echo viruses are the enteroviruses (EV) that cause the common febrile rash sickness known as hand, foot, and mouth disease (HFMD). (11) Skin rashes on the palms of the hands and soles of the feet, dehydration from mouth sores, and fever are the typical signs of HFMD. (28) High fever, rashes, and excruciating joint pain are the main symptoms seen in children with tomato flu, which are similar to those of chikungunya. (29)

The local media in Kerala was covering a mysterious sickness in youngsters known as "tomato fever" during the time of their visit. Although they had played with another youngster who had recently recovered from "tomato flu" a week before coming to the UK, they insisted they had no interaction with sick children. (30)

OUTBREAK OF KERALA TOMATO FLU

The Tomato Flu, another viral illness, has been reported in Kerala. It is a rare viral illness that causes blisters that resemble tomatoes. Around 80 state children under the age of five were already impacted as of May 11th, 2022. (22)



The southern Kerala district of Kollam has reported 1,300 cases of hand, foot, and mouth disease this year, leading some specialists to claim that tomato fever or flu is "same as" HFMD. The infectious viral infection known as tomato flu, which is frequent in young children, was originally reported in Kollam. Kerala reported 82 cases of tomato flu among children under the age of five between May 6 and July 26, according to a national government alert to states last week. . Haryana, Odisha, and Tamil Nadu have also reported cases. (26)

INDIAN TOMATO FLU OUTBREAK



New information regarding the tomato flu outbreak in India was released by medical professionals. Numerous studies and examinations established 82 cases of tomato flu or tomato fever starting on May 6, 2022, in Kerala, where the virus initially surfaced. The virus that causes tomato flu is rare and manifests itself endemic. After the effects of COVID-19, it is not at all life-threatening. Children between the ages of one and five are frequently affected by this tomato flu virus. Additionally, this virus can harm elderly people and those with compromised immune systems. (24)

It is regarded as one of the hand, foot, and mouth disease subtypes. Hand, foot, and mouth illness may potentially affect immunocompetent individuals, according to studies of select instances. (24)

BRITISH MEDICAL JOURNAL CLAIMS THAT

It is more likely that the virus is a side effect of either dengue fever or chikungunya, two viral infections spread by mosquitoes. Alternately, it could be a brand-new strain of the viral hand, foot, and mouth disease, which primarily affects children between the ages of one and five and immunocompromised adults. (23)

DESCRIBE TOMATO FLU

The mysterious viral illness known as "tomato flu" is currently sweeping the state of Kerala. The primary sign of this illness, tomato-shaped blisters on various body areas, is where the term "tomato flu" originates. Tomato fever or tomato flu is the name given to the blisters, which begin as little red blisters that expand to resemble tomatoes. Additionally, the afflicted toddlers suffer from acute dehydration and skin irritation. (8)

EPIDEMIOLOGY

The disease outbreak began in Kerala's Kollam district, where as of May 13, 2022, 82 cases of tomato flu have been reported; further cases are anticipated.

(18) The first instance of tomato flu, which was recorded on May 6, 2022, was a four-year-old child from Aryankavu, a village close to the border between Kerala and Tamil Nadu. (27)

Since then, 26 cases in Orissa have tested positive for the disease Hand, Foot, and Mouth, which is thought to be tomato flu. (16)



CAUSES & ETIOLOGY

The precise origin of the infection is still being investigated. The bacteria that causes tomato flu is still being looked into by scientists. The medical professionals suggest adopting preventative measures because it is a sickness that is spread through contact. (8)

The Coxsackie virus A 16 is what causes the "tomato flu." It is a member of the enterovirus family. The enteroviruses (EV) Coxsackie A16 (CA16), EV A71, Coxsackie A6, Coxsackie B, and Echo viruses are

responsible for the common febrile rash condition known as hand, foot, and mouth disease (HFMD), according to Dr. Suresh Kumar Panuganti, a paediatrician at Yashoda Hospitals in Hyderabad. (9)

SYMPTOMS

The primary symptoms of the disease include:

- Large blisters, the size of tomatoes that are red in colour
- Rashes
- High fever
- Dehydration
- Skin irritation
- Body aches
- Joint swelling.

Some other symptoms include: (7)

- Nausea
- Vomiting
- Abdominal cramps
- Fatigue
- Discoloration of hands, knees and buttocks
- Coughing
- Runny nose
- Common influenza like symptoms
- Sneezing

RISK FACTORS

"Children are at heightened risk of exposure to tomato flu as viral infections are widespread in this age range and spread is likely to occur through close contact," the Lancet paper, which was released on August 17, stated. Young children can catch this virus via touching dirty surfaces, using diapers, and putting objects directly in their mouths.(9)" Given the parallels to hand, foot, and mouth illness, the research added, "... If the outbreak of tomato flu in children is not controlled and stopped, transmission might result in catastrophic repercussions by spreading to adults as well." (15) It is a very contagious virus that can be transmitted through respiratory secretions from the mouth and nose as well as through food and unwashed hands via the faecal oral route. Children under the age of five are particularly vulnerable to and at danger from this virus, according to Dr. Kataria. (15)

HOW IS TOMATO FLU IDENTIFIED?

According to experts, molecular and serological tests are used to diagnose dengue, chikungunya, Zika virus, varicella-zoster virus, and herpes in youngsters who have symptoms. After the diagnosis of tomato flu is made, symptomatic care is needed because there is no cure. If the tomato flu outbreak in children is not contained and avoided, transmission might have catastrophic repercussions by spreading to adults as well, according to the Lancet Journal. It is noteworthy that children under the age of five are particularly susceptible to infection. But in the ongoing outbreak In Odisha, tomato flu has also affected children as young as nine years old. Adults who are immunocompromised are likewise more vulnerable risk of contracting this viral illness. (15)

TOMATO FLU MANAGEMENT

A viral fever that self-limits, tomato flu. As a result, it typically resolves itself in 6 to 12 days. (16) The disease is clinically diagnosed through a history and physical examination, particularly in areas where outbreaks are occurring.

MEDICATIONS FOR THE TOMATO FLU

Medical researchers have been working hard to find a cure for this illness as a result of this new virus. Because human life is crucial to the development of the state and the nation. As a result, both the Kerala state government and the government of India have maintained an eye on this illness. As soon as possible, we'll go over the Tomato Flu Precautions with you so you can better prepare for this infection. (12) The care of dengue, chikungunya, and hand, foot and mouth illness is quite similar to that of the tomato flu virus. Patients are typically counseled to consume adequate amounts of fluids with proper rest. Additionally, obtaining plenty of rest is essential for treating severe body aches. To stop the tomato flu virus's chain of transmission, patients are typically quarantined. (11) In addition to these, doctors frequently advise supportive care, such as Paracetamol, for the treatment of fever and body aches. (11) There isn't currently a precise remedy for tomato flu. Therefore, the sole treatment for this illness is symptomatic. (7) The signs often go away in seven to 10 days. (13)

OUTBREAK PREPAREDNESS

Parents are advised to see a doctor as soon as possible if their child exhibits any symptoms of HFMD. They must also keep an eye out for any changes in their child's routine behaviour, such as a refusal to eat or drink, frequent vomiting, or excessive sleepiness.

- Using a diluted solution of chlorine-containing bleach, contaminated objects and surfaces should be thoroughly cleansed and disinfected.
- All children and adults should wash their hands frequently and thoroughly, especially after changing diapers or using the restroom.

- A case definition will be created to help in the early detection of severe instances as well as the reporting, monitoring, and treatment of such patients. (18)
- Every level of healthcare facilities must establish an HFMD reporting protocol and conduct daily HFMD reporting.
- Construction of new or expanded paediatric intensive care units (ICUs). -Programs for ICU staff development should be established.
- Setting up a specialist medical team and offering 24-hour on-call assistance.
- It is important to enhance surveillance and evaluation of severe cases based on clinical indicators.
- To lower mortality, clinical surveillance for early detection of severe cases and immediate care should be offered.
- Consultation rooms for febrile rash cases should be set up in fever outpatient clinics or paediatric wards to prevent cross-transmission among other unwell children. Sterilization of medical equipment is required for each patient. (18)

TRIALING MEDICINES AND VACCINES

As a recently emerging infectious disease, tomato flu, medications and vaccines for its treatment have not yet been created or put through clinical trials.

STEPS TAKEN BY THE GOVERNMENT

The neighbouring state of Tamil Nadu has enhanced border surveillance in response to cases of tomato flu being found in Kerala. The Kerala government launched initiatives in each Anganwadi and medical facility to treat the affected people. (19) Coimbatore's Anganwadi centres are reportedly undertaking disease screenings, and 24 mobile teams with medical personnel have been sent out. (20) To keep an eye out for anyone showing signs of fever and rashes, three teams of tax inspectors, health inspectors, and police have been sent out in shifts. (20) Because Kerala accounts for the majority of the occurrences, the surrounding areas are closely monitored. All hospitals in the neighbouring states have received orders to report any patients exhibiting tomato flu symptoms. (21)

WHEN SHOULD YOU VISIT A MEDICAL PROFESSIONAL?

It is possible to self-cure tomato flu. If your child exhibits any of the aforementioned signs or symptoms, you should contact a medical professional right once. Isolate your youngster from other family members and consult your doctor if you suspect an infection. Although the tomato flu is a contagious illness that is spreading quickly, it is not fatal or life-threatening. The right symptomatic treatment and preventative actions are advantageous. As they have negative consequences on your child's body, some of the symptoms,

like acute diarrhoea, vomiting, and dehydration, demand rapid attention. Therefore, if your child contracts this contagious ailment, don't panic and handle it carefully. (8)

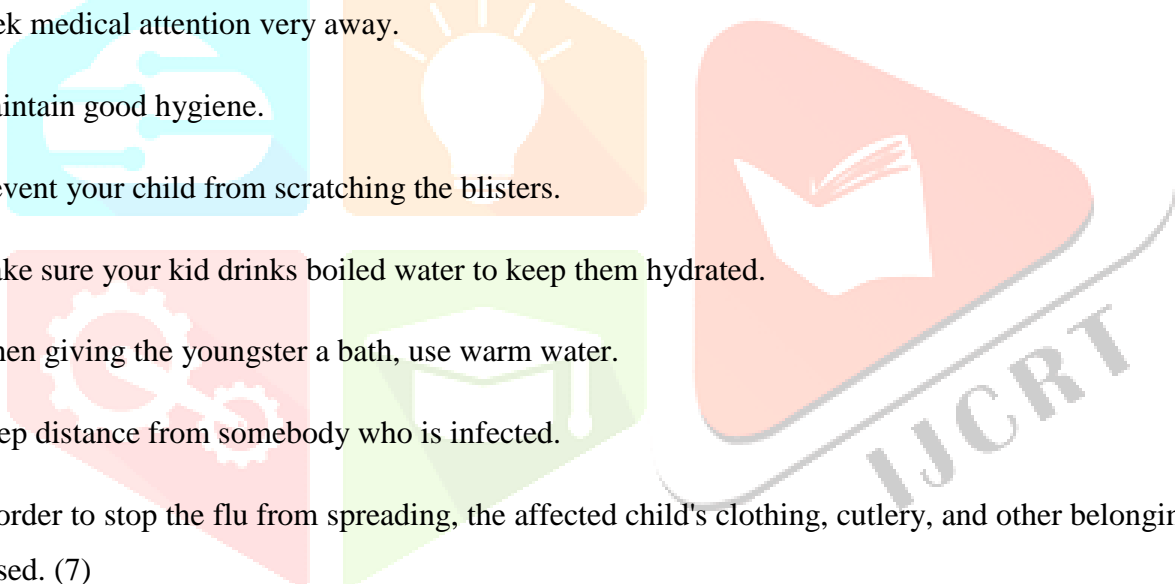
DOES COVID-19 HAVE ANY CONNECTION TO TOMATO FLU?

Tomato Flu is unrelated to COVID-19, despite sharing certain symptoms with it. These signs are typically present in other viral infections as well. Since the authorities have been asked to remain vigilant, there is no need to panic. (7)

AVOIDANCE OF TOMATO FLU

Stopping the spread of infection is the most effective strategy to treat the illness. As we all know, the best course of action in the event of an unexpected illness epidemic is prevention. To stop the spread of sickness, we should keep our distance from one another. (8)

WHAT TO DO IF YOU'RE CHILD CONTRACTS AN INFECTION?

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1. Seek medical attention very away.
 2. Maintain good hygiene.
 3. Prevent your child from scratching the blisters.
 4. Make sure your kid drinks boiled water to keep them hydrated.
 5. When giving the youngster a bath, use warm water.
 6. Keep distance from somebody who is infected.
 7. In order to stop the flu from spreading, the affected child's clothing, cutlery, and other belongings must be cleansed. (7)

CONCLUSION

The viral illness known as "tomato flu" is affecting children between the ages of 1 and 9. The corona virus, monkey pox, chikungunya, dengue, and tomato flu are unrelated. If symptoms of tomato flu occur, follow the doctor's instructions and take any medication that is provided in order to recover quickly. Educating the people about the disease is the most crucial action performed to stop its spread.

India's first instance of tomato fever was reported in the month of May 2022, and it thereafter spread to other regions of the nation from Kerala. Other states that are affected include Haryana, Tamil Nadu, and Odisha. Children between the ages of one and five are frequently affected by this tomato flu virus. Following the unexpected discovery of 82 instances of tomato flu in Kerala, studies were conducted into the tomato flu outbreak in India. It is regarded as one of the hand, foot, and mouth disease subtypes. Hand, foot,

and mouth illness may potentially affect immunocompetent individuals, according to studies of select instances.

Red blisters, rashes, skin irritation, dehydration, fever, and body aches are a few of the typical symptoms. The tomato-shaped blisters that develop on various body areas are the disease's primary symptom. The blisters begin as little, reddish blisters.

No specific vaccines or medications are available to treat the tomato flu virus. However, a doctor might advise aspirin or Paracetamol to reduce a fever, body aches, and general discomfort. A 5- to 7-day isolation time is advised due to the high contagiousness of tomato flu. Other measures to stop the virus's spread include washing your hands frequently and avoiding sharing food or clothes with others who are sick. When someone has tomato flu, it's advised to keep kids indoors as much as possible, make sure they wear gloves and masks when they go outside, and to keep them away from other people. Keep the area clean and hygienic by taking precautions to avoid any virus infections.

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