

Tomato Flu- A New Virus Trending in Children

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ABSTRACT

The new tomato flu virus has caused a new wave of concern, particularly in young people, as people try to live with Coronavirus Disease-2019 (COVID-19) infections and the undetected existence of monkeypox infections. The flu virus derives its name from the red blisters that resemble tomatoes and spread throughout the body of an affected person. Children between the ages of one and five and elderly people with compromised immune systems are frequently affected. Mouth ulcers, blisters, rashes, coughing, fever, sneezing, or runny nose, skin irritation, discolouration of the hands and legs, exhaustion, abdominal pains, nausea, vomiting, or diarrhoea, bodyaches, and joint pain are the main warning signs and symptoms of tomato flu. To treat tomato flu, supportive measures and fever-reducing drugs like acetaminophen or ibuprofen may also be administered. Antiviral medicines and immunisations are currently still unable to cure or prevent tomato flu. In order to properly address the epidemic, research should be focused in the future on the readiness of effective treatments and immunisations.

Keywords: Antiviral medicine, Blisters, Epidemic, Fever, Immunisations, Rash

INTRODUCTION

Everyone has been residing in enclosed indoor quarters safe from illnesses since March 2020 [1]. People are becoming more aware of emerging endemics as a result of the relaxation of limitations and return to normalcy in life. Children's exposure to the outside world and illnesses has risen as a result of the reopening of schools. As tomato flu is highly contagious, so the cases are rising. While people are attempting to live with COVID-19 infections and the undetectable presence of monkeypox infections, the new tomato flu virus has sparked a fresh wave of anxiety, particularly in young people [2,3].

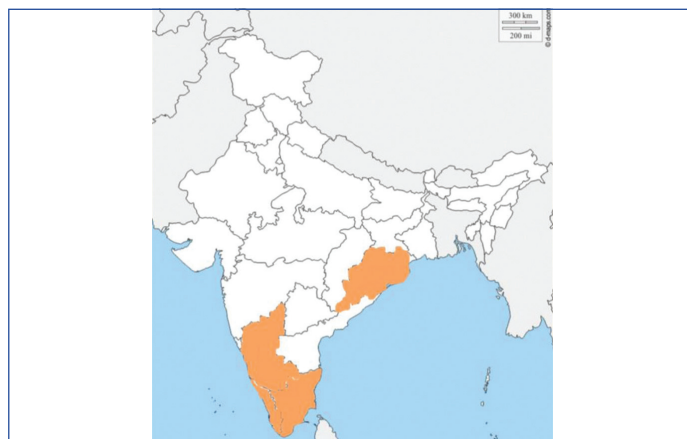
Since viral infections are widespread in children this age and propagation is most probable through close contact, children are more likely to be exposed to tomato flu. Young children can be infected by this virus by touching dirty surfaces, using diapers, and putting objects directly in their mouths [4]. Given its resemblance to Hand-Foot-and-Mouth Disease (HFMD), tomato flu transmission can have serious consequences by spreading to adults if outbreaks in children are not controlled and prevented.

A newborn may get the virus from a mother who contracts it just before giving birth [5]. A newborn's risk of infection increases if the mother was suffering from enterovirus illness at the time of delivery. Most neonates infected with enteroviruses only experience a mild illness, but in rare instances, the infection may become serious and involve vital organs like the heart or liver and result in death [6,7]. The purposes of the review are to increase awareness of the disease among first-contact healthcare providers, thus enable early detection and facilitate rapid and efficient treatment.

Indian Scenario of Tomato Flu

The first tomato flu case was recorded on May 6, 2022, in the Kollam district of Kerala; by July 26, 2022, the local government hospitals had identified the illness in more than 82 children under the age of five. The other areas of Kerala that are affected are Anchal, Aryankavu, and Neduvathur [8,9]. The neighbouring states of Tamil Nadu and Karnataka were alerted to this endemic viral disease. The Regional Medical Research Centre in Bhubaneswar also revealed that 26 youngsters (aged 1-9 years) in the state of Odisha had the illness. Other than Kerala, Tamil Nadu, and Odisha, no other parts of India have experienced the virus's effects as of yet. To monitor the viral

infections spread and stop it from spreading to other regions of India, the Kerala Health Department is taking precautions [4,8,9]. Tomato flu-affected states are shown in (orange coloured) [Table/Fig-1].



[Table/Fig-1]: Tomato flu-affected areas in India.

According to a report in UK, two children were suspected to be infected with tomato flu virus after their return from a trip to Kerala, India. But later on, it was diagnosed differently [10]. Previously, Coxsackie Virus A16 (CV-A16) (tomato flu was reported to cause fatal cases of HFMD in mainland China, France, Japan, Taiwan, and the United States. In 2010, 92 cases of HFMD with neurological dysfunction were reported in Shenyang, China. Nineteen cases were reported to be due to CV-A16 infection, of which two had brainstem encephalitis and one had acute flaccid paralysis [11].

Similarities Between Other Illnesses and Tomato Flu

The basic symptoms of tomato flu in children are thought to be identical to those of chikungunya or dengue, and the blisters may resemble chickenpox or even monkeypox [12,13]. To rule out viral illnesses like dengue or chikungunya, a thorough clinical examination and laboratory tests should be performed. Chickenpox can be distinguished from tomato flu by the fact that it does not result in blisters beneath the palm and feet [14].

The primary distinction between monkeypox and tomato flu, a kind of HFMD, is that monkeypox is uncommon in children while HFMD

primarily affects those under the age of seven. HFMD rashes mainly affect the palms, soles, and mouth. Although the buttocks and thighs might also develop these rashes, having rashes all over the body is unusual. They often aren't serious and go away on their own [15]. Monkeypox, on the other hand, causes consecutively spreading rashes from head to toe. It is typical for the face, genital region, palms, and soles to be affected. The rashes appear one to three days after the onset of the fever and can persist for two to four weeks [16,17].

TOMATO FLU

Signs and Symptoms

Mouth ulcers, blisters, and rashes can occur in tomato flu [Table/Fig-2,3]. The blisters initially appear as tiny red blisters that resemble tomatoes as they grow in size [9, 18]. The primary signs and symptoms of tomato flu in children include fever, rashes, and joint discomfort, which are also characteristics of other viral illnesses. Along with weariness, nausea, vomiting, diarrhoea, a fever, dehydration, joint swelling, bodyaches, and other influenza-like symptoms are all among the symptoms [18,19]. Mild fever, low appetite, lethargy, and frequently a sore throat are the first symptoms. Small red spots start to appear one or two days after the fever starts and they quickly develop into blisters and then ulcers. The tongue, gums, and inside of the cheeks, palms, and soles are the typical sites for the sores. It usually resolves within 7-10 days [4].

- **Coughing, fever, sneezing, or runny nose:** These signs of coronavirus infection are also rather typical in cases of tomato flu.
- **Skin irritability:** This is one of the most typical signs of tomato flu.
- **Discolouration:** Legs and hands are discoloured and become marginally unrecognisable.
- **Tiredness and fatigue:** They can also pose a health concern.
- **Bodyaches and joint pain:** A Tomato virus afflicted child can have trouble due to bodyaches and joint pain [19].

The characteristic rashes are shown in [Table Fig-3,4] [20,21].



[Table/Fig-2]: Rashes in tomato flu-affected patients [20].



[Table/Fig-3,4]: Blisters and rashes in tomato flu-affected patients [21]. (Images from left to right)

Diagnosis

When dengue, chikungunya, varicella-zoster, zika, and herpes are ruled out as viral infections in children who exhibit these symptoms,

molecular and serological testing is performed to confirm tomato flu virus infection [14,22-25].

Treatment [26]

Supportive management: Intake of more fluids to maintain hydration, rest, and hot water sponge baths to relieve irritation from rashes is given.

Specific management: Specific management is not available but children may be given antipyretic and analgesic medications such as ibuprofen or acetaminophen and other symptomatic treatments are required.

Role of antimicrobials and vaccines: Tomato flu cannot be treated or prevented with antiviral medications or vaccinations. To better understand the need for prospective treatments, additional follow-up and monitoring for significant outcomes and sequelae are required.

Preventive Measures

Here are some precautions against the tomato flu [4,26]:

- Body should be kept properly hydrated by drinking extra boiled water, juices, and other liquids.
- Patients should avoid transmission by circumventing touching blisters; maintaining good personal hygiene; and keeping a physical distance from suspicious instances. Adequate rest is needed to prevent the tomato flu's long-lasting symptoms.
- The tomato flu is remarkably contagious, just like other influenza types. Therefore, it is crucial to properly isolate any confirmed or suspected cases of the tomato flu virus and implement additional preventative measures in order to stop the virus's spread. Isolation should be used for 5-7 days after the onset of symptoms to prevent the virus from transmitting to other children or adults.
- The best way to prevent infection is to maintain proper hygiene, sanitise the surroundings, and restrict a sick child from sharing toys, clothes, food, or other items with other children who are not ill.

CONCLUSION(S)

There is a rise in the flu and other viral infections as a result of the weather change. The highly contagious tomato flu virus is transmitted to young infants by contact with contaminated surfaces, diaper use, or direct oral contact. The tomato flu can result in blisters, rashes, mouth ulcers, etc. Laboratory testing is done to see if a child has a tomato virus infection. In the course of treatment, supportive measures as well as medications such as acetaminophen or ibuprofen are used to lower the temperature. The greatest methods for preventing infection are practicing good hygiene, sterilising the surroundings, and preventing a sick child from sharing toys, clothes, food, or other items with other kids who are healthy. Tomato flu is still not curable or preventable with antiviral drugs or vaccinations. Future research should concentrate on the readiness of efficient therapies and vaccinations in order to appropriately handle the epidemic.

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