

Review on Tomato Flu

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Abstract— *Infectious disease tomato flu affected many places of India. Many controversial information raised about it. Also considered as hand foot and mouth disease. It still remains in a state of unknown. Most commonly children are getting affected by tomato flu but adults are also found to be infected. Symptoms found in tomato flu are similar to many of the diseases like monkeypox, chikungunya, and dengue. One of the predominant symptoms is occurrence of blisters on the skin. Affected patients are isolated for about a week. All needed modes of treatment are provided by health care professionals. Diagnosis, mitigation, prevention, cure and treatment of tomato flu has to be carried out effectively to safeguard hundreds of children's and adults.*

Keywords— *Tomato flu; viral infection; red blisters; hand foot and mouth disease; enterovirus.*

I. INTRODUCTION

A viral illness known as tomato flu or tomato fever is a new threat, has emerged in India in the state of Kerala in children younger than 5 years. It is also considered as a variant of endemic hand foot and mouth disease.¹ The virus belonging to the genus enterovirus are responsible for the cause of hand foot and mouth disease.² Tomato flu also found to be cause for the after effect of dengue fever and chikungunya fever. Blister formation seen on the skin is same like monkeypox. So, the cases are confirmed by crossing out other predictable illness. The rare viral infection is in an endemic state and is observed non-life threatening. This type of pandemic disease was observed previously in Kozhikode in the year 2001.³

The vigilant management is desirable to prevent further outbreaks as it is highly contagious in nature. Tomato flu gained its name on the basis of the eruption of red and painful blisters or welts throughout the body mostly in oral cavity, hands and feet that gradually enlarges. These blisters formed resembles those seen in the monkeypox virus infected individuals. Apart from the red eruptions, many other symptoms like ulcers in the mouth, inflammation and itching in the body, fever, muscle pain, joint pain and many more are identified. The affected person should remain in isolation to prevent further transmission as the so-called tomato flu is predicted to be transmitted via close contact with the affected patients. Immunoglobulins, anti-viral drugs are used for the adjuvant therapy in hand foot and mouth disease.⁴

II. CONTROVERSIES OF TOMATO FLU

Instead of a viral illness, it can be a complication of dengue or chikungunya fever in children. Another study has also reported that it could be a new variant of the viral hand, foot, and mouth disease. Pathogenesis of tomato flu is still unclear. Due to the absence of substantial scientific literature, the exact cause of the outbreak is still under the microscope.⁵⁻⁷

III. EPIDEMIOLOGY

The reports from the Indian state of Kerala have highlighted cases of “tomato flu” in young children, described as a febrile rash illness with round, red skin lesions looking

similar to tomatoes. The tomato flu observed in the children of Kerala was predicted to be caused by Coxsackie A16, one of the commonest Enterovirus which causes hand foot and mouth disease in India, along with Coxsackie A6 and other strains. Case report revealed that children with fleshy vesicular appearance was tested positive for Enterovirus and its sequencing was found similarly as Coxsackie A 16.^{8,9}

The disease epidemic observed in a four-year-old child of Kollam district, Aryankavu village near the Kerala-Tamil Nadu border is the first case of tomato flu which was reported on May 6, 2022. More than 100 cases were observed in children below the age group of 5 and adults with weaker immunity have been reported in India and the number of cases is expected to go up progressively. In addition to above severity, in Orissa approximately more than 26 hand foot and mouth disease positive cases were identified which is assumed to be Tomato flu.¹⁰⁻¹²

Kerala is the first state in India affected with tomato flu. Kollam, Anchal, Aryankavu and Neduvathur are the places of Kerala in which the patients are mostly affected. This endemic viral illness triggered an alert to the neighbouring states of Tamil Nadu, Karnataka, Odisha and Bhuvaneshwar.¹³

IV. SYMPTOMS

The symptoms of tomato flu are similar to those of COVID-19, but the virus is not related to SARS-CoV-2. The clinical features also found similar to those of viral infections, chikungunya, dengue, as well as hand foot and mouth disease.¹⁴ The blisters formed are similar to those of monkeypox. Though the symptoms look same like the above-mentioned conditions, it can be well differentiated from others.

The most predominantly detected indications are appearance of reddish eruptions on the skin, high fever, loss of appetite, malaise, fatigue, tiredness, intense muscle and body pain, sore throat, inflammation in the joints, rashes on the skin which ultimately leads to skin irritation, mouth ulcers, nausea, vomiting, diarrhoea, dehydration.¹⁵⁻¹⁸

V. TRANSMISSION

Tomato flu is contagious in nature. Infectious agent can remain in a body for several weeks after the infection. Transmission is found to arise through close contact with

infected person and their possessions. Currently children are mostly affected by tomato flu but it may also spread to adults leading to serious consequences if not prevented and controlled with appropriate measures.

VI. PREVENTIVE MEASURES

The prudent management is desirable to stop and control further outbreaks. Precautionary measures are being taken by the health department to monitor the disease surveillance to prevent the spread of the viral infection. Some of the mandatory steps to be followed for prevention of tomato flu transmission are isolation of infected or suspected person for a week, rehydration of body with adequate fluids, prevention of use of infected persons clothes, toys or other items by other healthy persons, sanitization and good hygiene, social awareness along with counselling, vaccination and the drug repositioning are the some of the important and effective method to ensure safety in human beings.

Since children are the most affected age groups particularly the one who is immunocompromised, health officials warn against at-home treatment and urge parents to bring the patients to the hospital. Like in all other outbreaks, it is crucial to increase the hospital bed numbers in the affected areas along with doctors, medical staff and other health care professionals. Regular health camps should be held to screen the children and suspected patients. The state government can create a contact tracing app for controlling the situation.¹⁹

VII. TREATMENTS

Due to the lack of disease-specific medication, treatments given to tomato flu are similar to those given in case of chikungunya, dengue, monkeypox and other viral infections. Some of the prime and significant managements, for instance rehydration of the body with plenty of fluids, isolation of patient, hot water sponge for the relief of rashes and irritation is crucial. Supportive therapy with analgesics and antipyretics for fever and body ache and other symptomatic treatments such as allergy, itching and ulcers are mandatory. No specific antiviral drugs are available for treatment.²⁰

VIII. CONCLUSION

Long term follow up and continuous monitoring is essential for better understanding about the infection and is needed for better treatment to battle against this disease. Though the viral infection is non-life threatening, yet the appropriate supportive therapy may help to mitigate the ill effects. A collaboration between the government officials, health care professionals and community are very crucial in the effective management of infections in addition to the pandemic COVID 19.

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