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WHO Collaborating Centre for Research & Training in Viral Diagnostics

Yh May 2017

Subject: Advisory for the Prevention and Control of Chikungunya Viral Infection

In continuation of our previous advisory on the increased number of Acute Febrile Viral Illness (suspected Chikungunya) cases reported from different provinces of Pakistan, it is imperative to be vigilant in collecting maximum information about the suspected cases, confirming the disease, advising preventive measures and take certain steps to interrupt further transmission. The objective of this advisory is to sensitize health care authorities to further strengthen and improve the level of preparedness in prevention and control of Acute Febrile Viral Illness (suspected Chikungunya) Infection.

Background: Chikungunya is a mosquito-borne viral disease which occurs in tropical countries and has been reported from Africa, South Asia and South-East Asia. Chikungunya fever is caused by Chikungunya Virus (CHKV), which is transmitted through the bite of an infected *Aedes* mosquito. The disease shares some clinical signs with dengue, and can be misdiagnosed in areas where dengue is common. However, the CHKV infections are rarely fatal without significant hemorrhagic manifestations. It is caused by RNA virus that belongs to the *alphavirus* genus of the family *Togaviridae*, which is transmitted to humans by infected mosquitoes. The proximity of mosquito breeding sites to human habitation is a significant risk factor. The viruses can circulate in the same area and cause occasional co-infections in the same patient.

Incubation period: After the bite of an infected mosquito, onset of illness occurs usually between 4 to 8 days (can be 2- 12 days). Viraemia persists for 5 – 7 days from the onset of symptoms.

Clinical presentation: Symptoms of Chikungunya infected individuals are often mild and unrecognized but sometimes become severe and characterized by an abrupt onset of fever accompanied by joint and muscles pain, headache, nausea, vomiting, fatigue and rash. Serious complications are not common, but the disease can be severe even lethal in older people, immune-compromised and patients with some underlying medical conditions. Occasional cases of gastrointestinal, eyes, neurological and cardiac complications have been reported. Chikungunya infection can occur at any stage of pregnancy and can be transmitted from mother to child during perinatal period. Clinical presentation of Chikungunya usually follows 3 phases as follows:

1. **Acute phase:** The disease is characterized by severe, sometimes persistent joint pains. The areas around the joints become swollen and painful to touch. This acute phase is severe and incapacitating and lasts 3–10 days. A patient may be unable to move or walk at this time.
2. **Sub-acute phase:** Skin rashes occur in 40–50% of patients, usually appearing between 2 and 5 days after the onset of fever. Unlike the small, dot-like rash seen in dengue fever, the chikungunya rashes are big and flat (maculopapular rash).
3. **Chronic phase:** The chronic/ convalescent phase can last from weeks to months with accompanying joint pain and rheumatism. Rarely the effects can last for years.

Treatment: There is no specific treatment for the disease and mainly relies on the management of symptoms. Neither any vaccine nor any anti-viral are recommended for prevention and treatment. The following measures are recommended:

- Get plenty of rest
- Drink fluids to prevent dehydration
- Symptomatic treatment is advised preferably with Acetaminophen.

- Do not take aspirin and other non-steroidal anti-inflammatory drugs (NSAIDS) like ibuprofen, naproxen etc.
- If you are taking medicine for another medical condition, talk to your healthcare provider before taking additional medication for CHKV infections.

High Risk group: Older adults, young children (especially under 1 year), pregnant women and people with preexisting chronic diseases (diabetes, hypertension and COPD etc.) are at risk.

Case Definition:

Suspected Case: Acute onset of fever >102°F and severe arthralgia/ arthritis not explained by other medical conditions (for endemic areas, dengue cases must be ruled out).

Probable Case: Any suspected case residing or visited epidemic areas (from where similar cases are reported) within 15 days prior to development of symptoms.

Confirmed case: Suspected/ probable case confirmed by any of the following laboratory tests:

- Molecular detection using Real-time polymerase chain reaction (RT-PCR) test within one week after onset of illness
- Serological detection by IgM ELISA after 4 days of the onset of illness
- Dengue cases must be ruled out by laboratory testing before referral

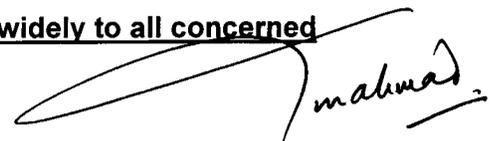
Laboratory Diagnosis: Collect 3-5 ml venous blood/serum of any suspected patient in sterile venoject tubes. Tight and seal it with full biosafety precautions. Label and pack it properly in triple packing with ice packs and transport to lab along-with complete history form. Transport the sample to the Virology Department of PHLD at National Institute of Health, Islamabad. Time period for test is critical and mentioned below:

- Molecular detection using Real-time polymerase chain reaction (RT-PCR) test within one week after onset of illness
- Serological detection by IgM ELISA after 4 days of the onset of illness.

Surveillance for human infections: Kindly evaluate the suspected case(s) or clustering of Chikungunya fever as per case definition. This communication may please also be distributed to the districts health officials and other stakeholders for information and action. Prepare a line-list for all the suspected cases with information (demographic, clinical & risk factor). Please contact the Field Epidemiology and Disease Surveillance Division (FE&DSD) NIH on Tel: 051-9255237 and Fax No. 051-9255575 for technical assistance.

Mode of transmission & preventive measures for Dengue and Chikungunya are annexed herewith

The above 'Advisory' may please be circulated widely to all concerned



(Dr. Mukhtar Ahmad)
Executive Director

Mode of Transmission & Preventive Measures for Dengue and Chikungunya

Mode of Transmission of Dengue and Chikungunya: The virus is transmitted to human by the bites of infected female *Aedes aegypti* and *Aedes albopictus* mosquitoes. They bite mostly during the daylight (especially in early morning and late afternoon) and are easily recognized by the black and white stripes/spot markings on their bodies and legs. They breed in anything which can hold clean water including tyres, coconut shells, flower pots, storage jars and cooling systems. The eggs become adults within a span of 7–10 days. The mosquito can rest in and around houses, schools and other areas where it is dark, cool and shaded. Both species are found biting outdoors, but *A. aegypti* will also readily feed indoors.

Preventive Measures for Dengue and Chikungunya:

- **Integrated Vector Management:**
 - Monitor the population of potential vectors and risk of Chikungunya virus circulation in affected areas
 - Implement larval surveillance programs to limit the breed of the vector
 - Develop close cooperation with different stakeholders of human and vector side for further strategies
- **Prevent mosquitoes from breeding:**
 - **Every week:**
 - Inspect and clean the interior and exterior of the home and its surrounding areas
 - Drain tanks, barrels, drums and buckets, animal water troughs, water storage vessels, plastic food containers, used coconut shells and air coolers, etc. before refilling
 - Empty air coolers when not in use.
 - Change water in flower vases.
 - Scrub the insides of vases to remove mosquito eggs
 - Remove water in plant pot plates. Scrub the plate thoroughly to remove mosquito eggs
 - Clear fallen leaves and stagnant water in drains/ gardens. Some leaves can collect water
 - **Every Month:**
 - Clear leaves in roof gutters and apron drains where feasible.
 - Insecticide spraying can also be carried out by a trained professional.
 - **All the times:**
 - Turn buckets and watering cans over and store them under shelter.
 - Place/store all articles that can collect rainwater, such as used tyres, under shelter.
 - Cover rarely used gully traps. If possible, replace gully trap covers with non-perforated ones and install anti-mosquito valves.
 - Do not litter. Paper cups and water bottles thrown into drains, sides of roads, vacant lands and other public places can collect rainwater and help mosquitoes breed.
- **Minimize the vector-patient contact:**
 - Use bed-nets, preferably permethrin-impregnated nets to protect those who take rest during the daytime
 - Wear full-sleeve clothes and long dresses to cover extremities
 - Wire-mesh/ nets on doors and windows are recommended
 - Curtains (cloth or bamboo) can also be treated with insecticides and hung at windows or doorways, to repel or kill mosquitoes
 - Use repellents, mosquito coils and electric vapour mats during the daytime

- **Health Education:**

- Risk communication to the household members; Promote awareness among population to protect the body from mosquito bites, including developing messages targeting the different audiences
- Minimize the vector-patient contact, Aedes mosquitoes bite during day time, mostly in the morning and late afternoon
- Ensuring women of childbearing age and particularly pregnant women have the necessary information and materials to reduce risk of exposure
- Reporting to the nearest Health Care Facility
- There is no need to isolate the patient or to segregate the patient. It is important to reduce the vector population in the house hold