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National Focal Point for International Health Regulations

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Subject: Advisory for Prevention and Treatment of Heat/Sun Stroke

Introduction:

In the recent years, Pakistan is experiencing severe climate changes due to global warming including heat wave. Each year the vulnerability and impact of heat wave is increasing in the country which may result in increased morbidity and mortality due to heat stroke. It is pertinent to take immediate necessary measures in this regard. Avoiding exposure to direct sunlight and rehydration can prevent the complications of heatstroke.

Objectives:

The objective of this advisory is to sensitize health care authorities to take in time appropriate actions for preparedness and prevention of heatstroke.

Background:

Heat stroke is a medical emergency and is a form of hyperthermia in which the body temperature is elevated dramatically and can be fatal if not promptly and properly treated. The body's temperature rises rapidly, the sweating mechanism fails and the body becomes unable to cool down. Consequently, the body temperature can rise to 106°F or higher within 10 to 15 minutes.

The body normally generates heat as a result of metabolism, and is usually able to dissipate the heat by radiation of heat through the skin or by evaporation of sweat. However, in high environmental temperature, humidity or vigorous physical exertion under the sun, the body may not be able to sufficiently dissipate the heat and the body temperature rises. Another cause of heat stroke is dehydration. A dehydrated person may not be able to sweat fast enough to dissipate heat, which also causes the body temperature to rise.

Clinical presentation:

Common signs and symptoms of heat stroke include profuse sweating or the absence of sweating, with hot red or flushed dry skin, weakness/lethargy, chills, throbbing headache, high body temperature, hallucinations, confusion/ dizziness and slurred speech. Heat stroke can cause death or permanent organ damage or disability if not properly treated in time. Infants, elderly persons, individuals with certain comorbidities, athletes, pregnant females and outdoor workers are at high risk for heat stroke.

Management:

Victims of heat stroke must receive immediate treatment. The following steps are recommended:

- i. If a person shows signs of possible heat stroke, professional medical treatment should be obtained immediately. The most critical step is the lowering of the temperature of the patients. The patients should be moved to shady area, unnecessary clothing

- should be removed and cool tepid water should be applied to the skin while soaking remaining clothes with water.
- ii. Notify the emergency services immediately as severe cases often require hospitalization and Intravenous re-hydration.
 - iii. Promote sweat evaporation by placing the patient before fan and ice packs under the armpits and groin.
 - iv. If the patient is able to drink liquids, he/ she should be given plenty of cool water or other cool beverages that do not contain alcohol or caffeine.
 - v. Maintain intravenous fluids and hospitalize if required.
 - vi. Monitor body temperature with a thermometer and continue cooling efforts until the body temperature drops to 101°F to 102°F. Antipyretics may be given once the body temperature drops to 101°F or below.

Preventive measures:

Heat/sun stroke is a preventable condition. Following common preventive measures can be taken by the health authorities including:

- a) Public should be educated through awareness messages to drink plenty of water while limiting time in direct sunlight in hot/humid weather or in places with high environmental temperatures, avoid becoming dehydrated and to refrain from vigorous physical activities in hot and humid weather.
- b) Public should be made aware of early signs/ symptoms of dehydration and subsequent evolving signs and symptoms of heat/sun stroke such as muscle cramps, nausea, vomiting, light-headedness and even heart palpitations.
- c) Persons working under the sun should prevent dehydration and heat stroke by taking time out of the sun and drinking plenty of water/ fluids. The patients should avoid use of alcohol and caffeine containing soft drinks and/or tea), which may exacerbate dehydration.
- d) Public should be encouraged to consume salty foods, wear hats and light-colored, lightweight and loose clothes during the hot/humid environmental conditions.

The health authorities should arrange first aid points in case of emergency situation at prominent points with sufficient essential medical supplies. The hospital should establish "Heat Stroke Centers" and stockpile enough medical supplies including intravenous fluids during or before anticipated heat wave in the area.

Distribution Overleaf


(Dr. Muhammad Salman)
Chief Executive Officer

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