

DENGUE FEVER : ADVISORY

Dengue fever is a mosquito-borne tropical disease caused by the dengue virus.

Symptoms and Signs :-

Dengue triad: High fever, severe headache, skin rash

1. **Sudden onset high fever** biphasic or saddleback in nature, breaking & returning for 1-2 days.
2. **Severe headache** (typically located **behind the eyes**), severe muscle and joint pains so it is also called **breakbone fever**.
3. Characteristic **skin rash** similar to measles. In some disease develops into the life-threatening dengue hemorrhagic fever, resulting in bleeding, low levels of platelets and blood plasma leakage or into dengue shock syndrome when low blood pressure occurs.
4. **During critical phase** : lymphadenopathy, mouth & nose bleeding, low blood pressure, accumulation of fluid in the chest (pleural effusion), accumulation of fluid in abdominal cavity (ascites), depletion of fluid, organ dysfunction, gastrointestinal bleeding.
5. **During recovery phase** : altered level of consciousness, seizures, itching, slow heart rate, peeling of the skin, slow heart rate, fatigue .
6. **Dengue shock syndrome**.
7. **Dengue hemorrhagic fever** – usually affects children less than 10 years of age.
8. Children often experience symptoms similar to those of the common cold and Gastroenteritis and have a greater risk of severe complications.

The incubation period (time between exposure and onset of symptoms) ranges from 4 to 7 days. Therefore, travellers returning from endemic areas are unlikely to have dengue if fever or other symptoms start more than 14 days after arriving home.

Transmission :-

- Dengue virus is primarily transmitted by *Aedes* mosquitoes particularly *A. aegypti*. The virus has five different types; infection with one type usually gives lifelong immunity to that type but only short-term immunity to the others. Subsequent infection with a different type increases the risk of severe complications.
- Blood products.
- Organ donation.

Predisposition :-

- High body mass index.
- Viral load.

Risk Factors :-

- Living or travelling in tropical areas.
- Prior infection with a dengue fever virus. Previous infection with a dengue fever virus increases the risk of having severe symptoms if one is infected again.

Complications :-

- If severe, dengue fever can damage the lungs, liver or heart. Blood pressure can drop to dangerous levels causing shock and in some cases death.

Mechanism :-

When a mosquito carrying dengue virus bites a person, virus enters the skin. It binds to white blood cells (WBC) and reproduces inside the cells. WBC respond by producing a number of signaling proteins e.g. cytokines and interferons which are responsible for symptoms.

Severe disease is marked by capillary permeability and disordered blood clotting.

Diagnosis :-

On examination :- Lymphadenopathy, Pleural effusions, Ascites.

- Low white blood cell count (WBC), positive tourniquet test or any warning sign.
- The earliest change is a low white blood cell count, low platelets and metabolic acidosis. Elevated level of Aminotransferase(AST and ALT) rising hematocrit and hypoalbuminemia. Demonstration of fluid on ultrasound in case of dengue shock syndrome.
- Check for the virus or antibodies to the virus.

Treatment :-

- No specific treatment. There is no vaccine to prevent dengue fever.
- Drink plenty of fluids.
- Intravenous fluids with electrolyte replacement to maintain urinary output of 1 ml/kg/hr.
- Acetaminophen can alleviate pain and reduce fever.
- Avoid Aspirin, Ibuprofen and Naproxen Sodium.
- Transfusion with packed red blood cells or whole blood to replace blood loss.
- During recovery phase intravenous fluids are discontinued to prevent a state of fluid overload or else loop diuretic e.g. furosemide if the patient is outside the critical phase.

Prevention :-

The best way to prevent the disease is to prevent bites by infected mosquitoes. This involves protecting oneself and making efforts to keep the mosquito population down.

To protect oneself :

- Stay away from heavily populated residential areas, if possible.
- Use mosquito repellents, even while indoors.
- When outdoors at dawn, dusk, early evening wear long-sleeved shirts and long pants tucked into socks, socks, shoes.
- When indoors, live in air conditioned room and in well screened houses.
- Make sure window and door screens are secure and free of holes. If sleeping areas are not screened properly or air conditioned, use mosquito nets.
- To decrease mosquito population get rid of old automobile tires, cans, flower pots.
- Use insect repellent 10% DEET, Permethrin.
- Generalised spraying of environs with Organophosphate or Pyrethroid Insecticides.

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