Guidelines for Clinical Management of Dengue Fever

Clinical Features of DF:
An acute febrile illness of 2-7 days duration with two or more of the following manifestations: Headache, retro-orbital pain, myalgia, arthralgia, rash, haemorrhagic manifestations.

Dengue Haemorrhagic Fever (DHF):

a). A case with clinical criteria of dengue Fever

plus

b). Haemorrhagic tendencies evidenced by one or more of the following
1. Positive tourniquet test
2. Petechiae, ecchymoses or purpura
3. Bleeding from mucosa, gastrointestinal tract, injection sites or other sites

Plus

c). Thrombocytopenia (<100 000 cells per cumm)

plus

d). Evidence of plasma leakage due to increased vascular permeability, manifested by one or more of the following:
1. A rise in average haematocrit for age and sex ≥ 20%
2. A more than 20% drop in haematocrit following volume replacement treatment compared to baseline
3. Signs of plasma leakage (pleural effusion, ascites, hypoproteinemia)

Dengue Shock Syndrome (DSS):
All the above criteria for DHF with evidence of circulatory failure manifested by rapid and weak pulse and narrow pulse pressure (≤ 20% mm Hg) or hypotension for age, cold and clammy skin and restlessness.

Case definition

Probable DF/DHF:

A case compatible with clinical description (Clinical Criteria) of dengue Fever during outbreak.:

OR

Non-ELISA based NS1 antigen/IgM positive.

(A positive test by RDT will be considered as probable due to poor sensitivity and Specificity of currently available RDTs.)

Confirmed dengue Fever:

A case compatible with the clinical description of dengue fever with at least one of the following

- Isolation of the dengue virus (Virus culture +VE) from serum, plasma, leucocytes.
- Demonstration of IgM antibody titre by ELISA positive in single serum sample.
- Demonstration of dengue virus antigen in serum sample by NS1 -ELISA.
- IgG seroconversion in paired sera after 2 weeks with Four fold increase of IgG titre.
- Detection of viral nucleic acid by polymerase chain reaction (PCR).

Clinical Management

Approach to clinical management of dengue Fever may vary depending on severity of illness. The patients who have simple fever without any danger signs or complications may be managed with symptomatic approach. Those who have warning signs and symptoms should be closely monitored for progression of disease. The patients with grade III and IV of DHF, significant bleeding or involvement of various organs require aggressive management to reduce morbidity and mortality. Patient may develop complications during later stage of fever (defervescence) or afebrile phase, where clinician should be careful to look for danger signs and signs of fluid overload.

Management of dengue Fever (DF)

Management of dengue fever is symptomatic and supportive

1. Bed rest is advisable during the acute phase.
2. Use cold/tepid sponging to keep temperature below 38.5° C.
3. Antipyretics may be used to lower the body temperature.

4. Aspirin/NSAIDS like Ibuprofen, etc should be avoided since it may cause gastritis, vomiting, acidosis, platelet dysfunction and severe bleeding. Paracetamol is preferable in the doses given below:

- 1-2 years: 60 -120 mg/dose
- 3-6 years: 120 mg/dose
- 7-12 years: 240 mg/dose
- Adult : 500 mg/dose

Note: In children the dose of paracetamol is calculated as per 10 mg/Kg body weight per dose. Paracetamol dose can be repeated at the intervals of 6 hrs depending upon fever and body ache.

5. Oral fluid and electrolyte therapy is recommended for patients with excessive sweating or vomiting.

6. Patients should be monitored for 24 to 48 hours after they become afebrile for development of complications.

Note:

- The fluid replacement should be just sufficient to maintain effective circulation during the period of plasma leakage.
- The recommended intravenous fluids are Normal saline, Ringers Lactate or 5% DNS.
- One should keep a watch for Urine output, liver size and signs of pulmonary oedema. Hypervolumea is a common complication.
- Normally intravenous fluids are not required beyond 36 to 48 hrs.
- Remember that ONE ML is equal to 15 DROPS. In case of micro drip system, one ml is equal to 60 drops. (if needed adjust fluid speed in drops according to equipment used).
- It is advised to start with one bottle of 500 ml initially, and order more as and when required. The decision about the speed of IV fluid

should be reviewed every 1-3 hours. The frequency of monitoring should be determined on the basis of the condition of the patient.

Indication of Platelet transfusion

1. Platelet count less than 10000/cu.mm in absence of bleeding manifestations (Prophylactic platelet transfusion).
2. Haemorrhage with or without thrombocytopenia.

Packed cell transfusion/FFP along with platelets may be required in cases of severe bleeding with coagulopathy. Whole fresh blood transfusion doesn't have any role in managing thrombocytopenia.

Platelets can be classified as random donor platelets (prepared by buffy coat removal method or by platelet rich plasma method), BCPP (buffy coat pooled platelet) and single donor platelets (SDP) or aphaeretic platelets (AP).

The details of the different platelet products are given at Annexure I I.

Vaccine for dengue infection

Till now there is no licensed vaccine available against dengue viral infection. Several trials are ongoing in the world for the development of tetravalent dengue vaccine. So far phase III trials of a recombinant, live attenuated tetravalent dengue vaccine (CYD-TDV) has completed in Five Asian countries in children which may be promising in preventing dengue infection in near future.

For further information please refer to NVBDCP Dengue Clinical Management Guideline-2014