

DENGUE CASE

PRESUMPTIVE DIAGNOSIS

- Live in/travel to dengue endemic area.
Fever and two of the following criteria:
- Anorexia and nausea
 - Rash
 - Aches and pains
 - Warning signs
 - Leukopenia
 - Tourniquet test positive

Laboratory confirmed dengue
(important when no sign of plasma leakage)

WARNING SIGNS*

- Abdominal pain or tenderness
- Persistent vomiting
- Clinical fluid accumulation
- Mucosal bleed
- Lethargy, restlessness
- Liver enlargement >2 cm
- Laboratory: increase in HCT concurrent with rapid decrease in platelet count

*(requiring strict observation and medical intervention)

NEGATIVE

Co-existing conditions
Social circumstances

POSITIVE

NEGATIVE

DENGUE WITHOUT WARNING SIGNS

DENGUE WITH WARNING SIGNS

Group A

(May be sent home)

Group B

(Referred for in-hospital care)

Group criteria

Patients who do not have warning signs
AND
who are able:

- to tolerate adequate volumes of oral fluids
- to pass urine at least once every 6 hours

Laboratory tests

- full blood count (FBC)
- haematocrit (HCT)

Treatment

Advice for:

- adequate bed rest
- adequate fluid intake
- Paracetamol, 4 gram maximum per day in adults and accordingly in children.

Patients with stable HCT can be sent home.

Monitoring

Daily review for disease progression:

- decreasing white blood cell count
- defervescence
- warning signs (until out of critical period).

Advice for immediate return to hospital if development of any warning signs, and

- written advice for management (e.g. home care card for dengue).

Group criteria

Patients with any of the following features:

- co-existing conditions such as pregnancy, infancy, old age, diabetes mellitus, renal failure
- social circumstances such as living alone, living far from hospital

Laboratory tests

- full blood count (FBC)
- haematocrit (HCT)

Treatment

- Encouragement for oral fluids. If not tolerated, start intravenous fluid therapy 0,9% saline or Ringer's Lactate at maintenance rate.

Monitoring

Monitor:

- temperature pattern
- volume of fluid intake and losses
- urine output (volume and frequency)
- warning signs
- HCT, white blood cell and platelet counts.

OR: Existing warning signs

Laboratory tests

- full blood count (FBC)
- haematocrit (HCT)

Treatment

Obtain reference HCT before fluid therapy. Give isotonic solutions such as 0.9 % saline, Ringer's lactate. Start with 5–7 ml/kg/hr for 1–2 hours, then reduce to 3–5 ml/kg/hr for 2–4 hr, and then reduce to 2–3 ml/kg/hr or less according to clinical response.

Reassess clinical status and repeat HCT:

- if HCT remains the same or rises only minimally -> continue with 2–3 ml/kg/hr for another 2–4 hours;
- if worsening of vital signs and rapidly rising HCT -> increase rate to 5–10 ml/kg/hr for 1–2 hours.

Reassess clinical status, repeat HCT and review fluid infusion rates accordingly:

- reduce intravenous fluids gradually when the rate of plasma leakage decreases towards the end of the critical phase.

This is indicated by:

- adequate urine output and/or fluid intake
- HCT decreases below the baseline value in a stable patient.

Monitoring

Monitor:

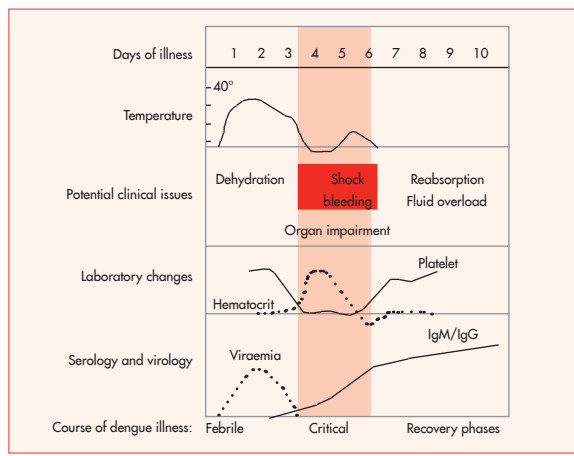
- vital signs and peripheral perfusion (1–4 hourly until patient is out of critical phase)
- urine output (4–6 hourly)
- HCT (before and after fluid replacement, then 6–12 hourly)
- blood glucose
- other organ functions (renal profile, liver profile, coagulation profile, as indicated).

ASSESSMENT

CLASSIFICATION

MANAGEMENT

MANAGEMENT



POSITIVE

SEVERE DENGUE

Group C

(Require emergency treatment)

Group criteria

Patients with any of the following features:

- severe plasma leakage with shock and/or fluid accumulation with respiratory distress
- severe bleeding
- severe organ impairment

Laboratory tests

- full blood count (FBC)
- haematocrit (HCT)
- other organ function tests as indicated

Treatment of compensated shock

Start IV fluid resuscitation with isotonic crystalloid solutions at 5–10 ml/kg/hr over 1 hour. Reassess patients' condition.

If patient improves:

- IV fluids should be reduced gradually to 5–7 ml/kg/hr for 1–2 hours, then to 3–5 ml/kg/hr for 2–4 hours, then to 2–3 ml/kg/hr for 2–4 hours and then reduced further depending on haemodynamic status;
- IV fluids can be maintained for up to 24–48 hours.

If patient is still unstable:

- check HCT after first bolus;
- if HCT increases/still high (>50%), repeat a second bolus of crystalloid solution at 10–20 ml/kg/hr for 1 hour;
- if there is improvement after second bolus, reduce rate to 7–10 ml/kg/hr for 1–2 hours and continue to reduce as above;
- if HCT decreases, this indicates bleeding and need to cross-match and transfuse blood as soon as possible.

Treatment of hypotensive shock

Initiate IV fluid resuscitation with crystalloid or colloid solution at 20 ml/kg as a bolus for 15 minutes.

If patient improves:

- give a crystalloid/colloid solution of 10 ml/kg/hr for 1 hour, then reduce gradually as above.

If patient is still unstable:

- review the HCT taken before the first bolus;
- if HCT was low (<40% in children and adult females, <45% in adult males) this indicates bleeding, the need to cross-match and transfuse (see above);
- if HCT was high compared to baseline value, change to IV colloids at 10–20 ml/kg as a second bolus over 30 minutes to 1 hour; reassess after second bolus.
- if patient is improving reduce the rate to 7–10 ml/kg/hr for 1–2 hours, then back to IV crystalloids and reduce rates as above;
- if patient's condition is still unstable, repeat HCT after second bolus.
- If HCT decreases, this indicates bleeding (see above);
- if HCT increases/remains high (>50%), continue colloid infusion at 10–20 ml/kg as a third bolus over 1 hour, then reduce to 7–10 ml/kg/h 1–2 hours, then change back to crystalloid solution and reduce rate as above.

Treatment of haemorrhagic complications

Give 5–10 ml/kg of fresh packed red cells or 10–20 ml/kg of fresh whole blood.