

B. EMERGENCY TREATMENT OF SHOCK AND SEVERE ANAEMIA

1. Shock in severely malnourished children

Shock from dehydration and sepsis are likely to coexist in severely malnourished children. They are difficult to differentiate on clinical signs alone. Children with dehydration will respond to IV fluids. Those with septic shock and no dehydration will not respond. The amount of fluid given is determined by the child's response. Overhydration must be avoided.

To start treatment:

- give oxygen
- give sterile 10% glucose (5 ml/kg) by IV
- give IV fluid at 15 ml/kg over 1 hour. Use Ringer's lactate with 5% dextrose; or half-normal saline with 5% dextrose; or half-strength Darrow's solution with 5% dextrose; or if these are unavailable, Ringer's lactate
- measure and record pulse and respiration rates every 10 minutes
- give antibiotics (see step 5)

If there are signs of improvement (pulse and respiration rates fall):

- repeat IV 15 ml/kg over 1 hour; then
- switch to oral or nasogastric rehydration with ReSoMal, 10 ml/kg/h for up to 10 hours. (Leave IV in place in case required again); Give ReSoMal in alternate hours with starter F-75, then
- continue feeding with starter F-75

If the child fails to improve after the first hour of treatment (15 ml/kg), assume that the child has septic shock. In this case:

- give maintenance IV fluids (4 ml/kg/h) while waiting for blood,
- when blood is available transfuse fresh whole blood at 10 ml/kg *slowly* over 3 hours; then
- begin feeding with starter F-75 (step 7)

If the child gets worse during treatment (breathing increases by 5 breaths or more/min and pulse increases by 25 or more beats/min):

- stop the infusion to prevent the child's condition worsening

2. Severe anaemia in malnourished children

A blood transfusion is required if:

- Hb is less than 4 g/dl
- or if there is respiratory distress and Hb is between 4 and 6 g/dl

Give:

- whole blood 10 ml/kg body weight slowly over 3 hours
- furosemide 1 mg/kg IV at the start of the transfusion

It is particularly important that the volume of 10 ml/kg is not exceeded in severely malnourished children. If the severely anaemic child has signs of cardiac failure, transfuse packed cells (5-7 ml/kg) rather than whole blood.

Monitor for signs of transfusion reactions. If any of the following signs develop during the transfusion, stop the transfusion:

- fever
- itchy rash
- dark red urine
- confusion
- shock

Also monitor the respiratory rate and pulse rate every 15 minutes. If either of them rises, transfuse more slowly. Following the transfusion, if the Hb remains less than 4 g/dl or between 4 and 6 g/dl in a child with continuing respiratory distress, DO NOT repeat the transfusion within 4 days. In mild or moderate anaemia, oral iron should be given for two months to replenish iron stores **BUT this should not be started** until the child has begun to gain weight.