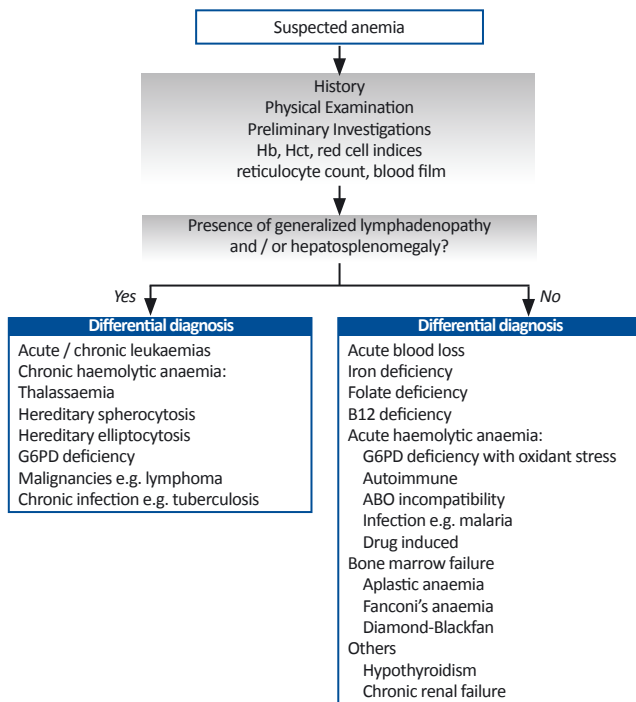


## APPROACH TO A CHILD WITH ANAEMIA

Figure 1. Approach to children with anaemia



### IRON DEFICIENCY ANAEMIA

#### Laboratory findings

red cell indices : Low MCV, Low MCH  
low serum ferritin

Table 1. Causes of IDA

Chronic blood loss
Increase demand
prematurity
growth
Malabsorption
worm infestation
Poor diet

Table 2. Variation in FBC indices with age

Age	Hb (g/dl)	RBC ( $\times 10^{12}/l$ )	MCV (fl)
Birth	14.9 – 23.7	3.7-6.5	100-135
2 mon	9.4-13.0	3.1-4.3	84-105
12 mon	11.3-14.1	4.1-5.3	71-85
2-6 yr	11.5-13.5	3.9-5.3	75-87
6-12 yr	11.5-15.5	4.0-5.2	77-95
12-18 yr girls	12.0-16.0	4.1-5.1	78-95
12-18 yr boys	13.0-16.0	4.5-5.3	78-95

Hb, haemoglobin; RBC, red blood cell count; MCV, mean corpuscular volume; MCH, mean corpuscular haemoglobin

## Treatment

### Nutritional counseling

- maintain breastfeeding
- use iron fortified cereals

### Oral iron medication

- give 6 mg/kg/day of elemental iron in 3 divided doses,
- continue for 6-8 weeks after haemoglobin level is restored to normal.
- Syr FAC (Ferrous ammonium citrate): 1 mg elemental iron per ml
- Tab. Ferrous fumarate 200 mg elemental iron per tablet.

### Consider the following if failure to response to oral iron:

- non – compliance
- inadequate iron dosage
- unrecognized blood loss
- incorrect diagnosis
- impaired GI absorption

### Blood transfusion

- no transfusion required in chronic anemia unless signs of decompensation (e.g. cardiac dysfunction) and the patient is otherwise debilitated.
- in severe anaemia (Hb < 4 g/dL) give low volume packed red cells (< 5mls/kg) if necessary over 4-6 hours with i.v. frusemide (1mg/kg) midway.

## HEREDITARY SPHEROCYTOSIS

### Pathogenesis

A defective structural protein (spectrin) in the RBC membrane producing spheroidal shaped and osmotically fragile RBCs that are trapped & destroyed in the spleen, resulting in shortened RBC life span. The degree of clinical severity is proportional to the severity of RBC membrane defect.

Inheritance is autosomal dominant in 2/3; recessive or *de novo* in 1/3 of children.

### Clinical features – mild, moderate & severe

- anaemia
- splenomegaly
- intermittent jaundice splenomegaly
- haemolytic crises
- pigmented gallstones – adolescents & young adults
- aplastic crises with Parvovirus B19 infections
- megaloblastic crises
- all patients should receive folate supplement

### Rare manifestations

- leg ulcers, spinocerebellar ataxia, myopathy
- extramedullary haematopoietic tumours,

## Treatment

- splenectomy to be delayed as long as possible
- in mild cases – avoid splenectomy unless gallstones developed
- folic acid supplements – 1 mg day

### Note:

*Splenectomy is avoided for patients < 5 years because of the increased risk of postsplenectomy sepsis. Give pneumococcal, haemophilus & meningococcal vaccination 4-6 weeks prior to splenectomy & prophylactic oral penicillin to be given post splenectomy.*

Table 3. Investigations in children with suspected spherocytosis

Reticulocytosis
Microspherocytes in peripheral blood film
Osmotic fragility is increased
Elevated MCHC
Normal direct antiglobulin test
Autohaemolysis is increased and corrected by glucose