BLEEDING AND/OR PALLOR

This chapter covers the baby who is bleeding or is found to be pale, either at birth or any time thereafter, with or without signs of internal or external bleeding. Pallor can be a sign of anaemia, shock, or both.

PROBLEMS

- The baby is currently bleeding.
- The baby has a history of bleeding.
- The baby appears pale at birth or sometime thereafter.

FINDINGS

- Review the findings from the general history (**page F-7**) and examination (**Table F-2**, **page F-11**), and obtain the following additional information to determine the probable diagnosis.
- Ask the mother (or whoever brought the baby in):
  - Is there blood in the baby's stool or urine?
  - Did you have a previous baby with haemolytic jaundice, glucose-6-phosphate dehydrogenase (G6PD) deficiency, or Rhesus (Rh) factor or ABO blood group incompatibility?
  - Was there any abnormal bleeding during pregnancy or labour/birth?
  - Was the baby's umbilical cord clamped/tied correctly at birth?
  - Is the baby vomiting? If so, is there blood or bile in the vomitus?
  - Is the baby a twin? If so, is the other twin very pink or red (i.e. twin-to-twin transfusion)?
  - Have multiple blood samples been taken from the baby?
- Look for:
  - where the blood is coming from (e.g. umbilicus, male circumcision site, or venepuncture site);
  - generalized oedema (body swelling);
  - abdominal tenderness (baby cries when abdomen is gently pressed);
  - jaundice.

GENERAL MANAGEMENT

BLEEDING

- Provide immediate management for bleeding as described in **Table F-1** (**page F-6**), if not already done.
- If the baby is still bleeding, increase the rate of infusion of IV fluid to infuse 20 ml/kg body weight of fluid over the first hour.
- If there are **signs of shock** (e.g. pallor, cold to the touch, heart rate more than 180 beats per minute, unconscious or nearly unconscious) or if **signs of shock develop while the baby is being assessed**:
  - Infuse normal saline or Ringer's lactate 10 ml/kg body weight over 10 minutes, and repeat once after 20 minutes if signs of shock continue;
  - Give a blood transfusion (**page P-31**) immediately using type O, Rh-negative blood.
- Take a blood sample (**page P-9**), and measure haemoglobin. If the **haemoglobin is less than 10 g/dl** (haematocrit less than 30%), give a blood transfusion (**page P-31**).
- Determine the probable diagnosis (**Table F-23, page F-115**).

PALLOR WITHOUT A HISTORY OF BLEEDING

- If there are **signs of shock** (e.g. cold to the touch, heart rate more than 180 beats per minute, unconscious or nearly unconscious) or if **signs of shock develop while the baby is being assessed**, establish an IV line (**page P-21**), if one is not already in place, and infuse normal saline or Ringer's lactate 10 ml/kg body weight over 10 minutes, and repeat once after 20 minutes if signs of shock continue.
- Measure blood glucose. If the **blood glucose is less than 45 mg/dl (2.6 mmol/l)**, treat for low blood glucose (**page F-91**).
- Take a blood sample (**page P-9**), and measure haemoglobin. If the **haemoglobin is less than 10 g/dl** (haematocrit less than 30%), give a blood transfusion (**page P-31**).
- Determine the probable diagnosis (**Table F-23, page F-115**).

DIFFERENTIAL DIAGNOSIS

TABLE F-23 Differential diagnosis of bleeding and/or pallor

Findings[a]			Probable Diagnosis
History	**Examination**	**Investigations or Other Known Diagnoses**	
• **Time of onset day 2 to 3**	• **Spontaneous bleeding from one or more sources, such as**: - Blood in stool or urine - Bleeding from umbilicus or from male circumcision or venepuncture sites - Spontaneous appearance of multiple bruises after birth, but no evidence of trauma • Pallor		**Haemorrhagic disease of the newborn baby, page F-119**
• **Time of onset day 4 or later**		• **Findings of haemorrhagic disease of the newborn baby (above) found on day 4 or later**	**Coagulopathy, page F-119**

TABLE F-23 Cont. Differential diagnosis of bleeding and/or pallor

Findings[a]			Probable Diagnosis
History	**Examination**	**Investigations or Other Known Diagnoses**	
• **Jaundice developing in less than 36 hours** • Pallor • ABO blood group or Rh factor incompatibility or G6PD deficiency in previous baby • Family history of G6PD deficiency, jaundice, anaemia, enlarged liver, or removal of spleen	• Serious jaundice • Pallor • Generalized oedema (body swelling) • Male baby (a supportive finding for G6PD deficiency only)	• **Haemoglobin less than 13 g/dl** (haematocrit less than 40%) • **Positive Coombs test** • *ABO blood group or Rh factor incompatibility between mother and baby* • *Positive G6PD screen*	**Haemolysis** Provide general management for pallor (**page F-114**) and treat for haemolytic jaundice (**page F-81**).
• **Maternal history of vaginal bleeding during later pregnancy and/or labour** OR • **Problem at birth or during pregnancy** (e.g. umbilical cord not clamped immediately after birth; twin-to-twin transfusion)	• **Pallor**	• **Haemoglobin less than 13 g/dl** (haematocrit less than 40%)	**Possible blood loss from obstetric causes** Provide general management for pallor (**page F-114**).

TABLE F-23 Cont. Differential diagnosis of bleeding and/or pallor

Findings[a]			Probable Diagnosis
History	**Examination**	**Investigations or Other Known Diagnoses**	
• **Poor or no feeding** • Asphyxia • Time of onset day 2 to 10	• **Floppiness or lethargy** • **Baby looks ill** • Abdominal distension, tenderness • Small baby (less than 2.5 kg at birth or born before 37 weeks gestation) • Blood or bile in vomitus • Blood or mucus in stool • Diarrhoea • Pallor • Progressive signs of ill health (temperature instability and/or apnoea)	• **Sepsis** • Increasing volume of gastric aspirates	**Necrotizing enterocolitis, page F-104**
• Has not passed meconium within 24 hours after birth, or if stool has been passed, it is dark or bloody • Time of onset day 1 to 4	• Increasing abdominal distension • Bile in vomitus		**Suspected gastrointestinal malformation or obstruction, page F-105**

TABLE F-23 Cont. Differential diagnosis of bleeding and/or pallor

Findings[a]			Probable Diagnosis
History	**Examination**	**Investigations or Other Known Diagnoses**	
• Mother breastfeeding with cracked nipples (time of onset day 2 or later) • Maternal bleeding during labour or from episiotomy (time of onset day 1 to 2)	• Blood in vomitus • Dark stools • Baby looks otherwise well		**Swallowed maternal blood, page F-105**
• Multiple blood samples taken • Baby is sick or small (less than 2.5 kg at birth or born before 37 weeks gestation)	• Pallor	• Haemoglobin less than 10 g/dl (haematocrit less than 30%)	**Anaemia of a sick or small baby, page F-119**
	• Pallor	• Haemoglobin less than 13 g/dl (haematocrit less than 40%)	**Pallor of unknown origin, page F-119**

[a] The diagnosis cannot be made if a finding listed in bold is absent. The presence of a finding listed in bold, however, does not guarantee the diagnosis. The diagnosis is definitively confirmed if a finding listed in italics is present. Findings in plain text are supportive findings; their presence helps to confirm the diagnosis, but their absence cannot be used to rule out the diagnosis.

MANAGEMENT OF SPECIFIC CONDITIONS

HAEMORRHAGIC DISEASE OF THE NEWBORN BABY

- If **bleeding does not stop within three hours**, treat for sepsis (**page F-41**).
- Take a blood sample (**page P-9**) and measure haemoglobin once daily. If the **haemoglobin is less than 10 g/dl** (haematocrit less than 30%), give a blood transfusion (**page P-31**).
- Provide ongoing management (**page F-120**).

COAGULOPATHY

- Treat for sepsis (**page F-41**).
- Take a blood sample (**page P-9**) and measure haemoglobin once daily. If the **haemoglobin is less than 10 g/dl** (haematocrit less than 30%), give a blood transfusion (**page P-31**).
- Provide ongoing management (**page F-120**).

POSSIBLE BLOOD LOSS FROM OBSTETRIC CAUSES

- Take a blood sample (**page P-9**) and measure haemoglobin once daily:
  - If the **haemoglobin is less than 10 g/dl** (haematocrit less than 30%), give a blood transfusion (**page P-31**);
  - If the **haemoglobin is between 10 and 13 g/dl** (haematocrit between 30 and 40%) **and there are signs of shock** (e.g. pallor, cold to the touch, heart rate more than 180 beats per minute, unconscious or nearly unconscious), give a blood transfusion (**page P-31**).
- Provide ongoing management (**page F-120**).

ANAEMIA OF A SICK OR SMALL BABY OR PALLOR OF UNKNOWN ORIGIN

- Once the baby's condition is stable, measure haemoglobin weekly for as long as the baby remains in the hospital. If the **haemoglobin is less than 8 g/dl** (haematocrit less than 24%), give a blood transfusion (**page P-31**).
- Provide ongoing management (below).

ONGOING MANAGEMENT OF BABIES WITH PALLOR OR BLEEDING

- Discontinue IV fluid unless an IV line is needed for another reason. If **IV fluid is still required**, continue IV fluid and ensure that the total fluid volume the first day (from both oral and IV sources) equals daily maintenance volume according to the baby's age plus an additional 10% of the total fluid volume required for the day (**Table C-4, page C-22**). Use the maintenance fluid volume for subsequent days.
- Measure haemoglobin daily until the haemoglobin is stable for three days and at a level not requiring transfusion, and then weekly for as long as the baby is in the hospital.
- Check the heart and respiratory rates every three hours until the baby's condition is stable.
- If the baby's heart and respiratory rates are stable, the baby has not required a transfusion for at least 48 hours, is feeding well, and there are no other problems requiring hospitalization, discharge the baby (**page C-67**).
- To prevent iron deficiency anaemia, give small babies an oral iron preparation to give elemental iron 2 mg/kg body weight once daily from two months of age up to 23 months of age.
- Follow up twice weekly for two weeks after discharge to monitor feeding and growth.
- Measure haemoglobin again in one month. If the **haemoglobin is less than 8 g/dl** (haematocrit less than 24%), give a blood transfusion (**page P-31**).