

Pregnant care : Obstetric conditions associated with the need for blood transfusion may lead to morbidity and mortality if not managed correctly. There are two primary reasons you may need a blood transfusion while pregnant. These include severe anemia, or hemorrhaging at some point during pregnancy. Normally during pregnancy, erythroid hyperplasia of the marrow occurs, and RBC mass increases. However, a disproportionate increase in plasma volume results in hemodilution (hydremia of pregnancy) : Hct decreases from between 38 and 45% in healthy women who are not pregnant to about 34% during late single pregnancy and to 30% during late multifetal pregnancy. Thus during pregnancy anemia is defined as Hb < 10 g/dL (Hct < 30%) . If Hb is < 11.5 g/dL at the onset of pregnancy, women may be treated prophylactically because subsequent hemodilution usually reduces Hb to < 10 g/dL. Despite hemodilution, oxygen-carrying capacity remains normal throughout pregnancy. Hct normally increases immediately after birth.

Symptoms and Signs : Early symptoms of anemia are usually nonexistent or nonspecific (eg, fatigue, weakness, light-headedness, mild dyspnea during exertion). Other symptoms and signs may include pallor and, if anemia is severe, tachycardia or hypotension.

Anemia increases risk of : -

1. Preterm delivery
2. Postpartum maternal infections.

Types of Anemia During Pregnancy : Several types of anemia can develop during pregnancy. These include:-

First : Iron Deficiency Anemia In Pregnancy : About 95% of anemia cases during pregnancy are iron deficiency anemia. The cause is usually : -

1. Inadequate dietary intake (especially in adolescent girls)
2. A previous pregnancy
3. The normal recurrent loss of iron in menstrual blood (which approximates the amount normally ingested each month and thus prevents iron stores from building up).

Diagnosis : Measurement of serum iron, ferritin, and transferrin. Typically, Hct is $\leq 30\%$, and MCV is < 79 fL. Decreased serum iron and ferritin and increased serum transferrin levels confirm the diagnosis of iron deficiency anemia.

Prevention Although the practice is controversial , iron supplements (usually ferrous sulfate 325 mg po once / day) are usually given routinely to pregnant women to prevent depletion of body iron stores and prevent the anemia that may result from abnormal bleeding or a subsequent pregnancy .

Second : Folate Deficiency Anemia In Pregnancy : Folate deficiency increases risk of neural tube defects and possibly fetal alcohol syndrome . Deficiency occurs in 0.5 to 1.5 % of pregnant women ; macrocytic megaloblastic anemia is present if deficiency is moderate or severe. Rarely , severe anemia and glossitis occur .

Diagnosis : Measurement of serum folate . Folate deficiency is suspected if CBC shows anemia with macrocytic indices or high RBC distribution width (RDW). Low serum folate levels confirm the diagnosis.

Prevention : All pregnant women and women who are trying to conceive are given folic acid 0.4 to 0.8 mg once / day. Women who have had a fetus with spina bifida should take 4 mg once / day, starting before conception.

Leukemia of infants : The term leukemia refers to cancers of the white blood cells (also called leukocytes or WBCs). When someone has leukemia, large numbers of abnormal white blood cells are produced in the bone marrow. These abnormal white cells crowd the bone marrow and flood the bloodstream, but they cannot perform their proper role of protecting the body against disease because they are defective.

Types of Leukemia: In general, leukemias are classified into:

- ✓ **Acute** (rapidly developing)
- ✓ **Chronic** (slowly developing) forms.

In children, most leukemias are acute. Acute childhood leukemias: It are also divided into :

- ✓ Acute lymphoblastic leukemia (ALL)
- ✓ acute myeloid leukemia (AML),

Depending on whether specific white blood cells called lymphocytes or myelocytes, which are linked to immune defenses, are involved. The ALL form of the disease most commonly occurs in younger children ages 2 to 8, but it can affect all age groups. AML can occur at any age, but it is somewhat more common before the age of 2 and during the teenage years. Most kids with leukemia have ALL; about 20% have AML. Other types of leukemia, like chronic myelogenous leukemia (CML) or juvenile myelomonocytic leukemia (JMML), are much less common.

Causes: Although experts don't know exactly what causes leukemia, it seems that some types of childhood leukemia may be linked to genetic or environmental factors.

Symptoms:

1. kids with leukemia may have more viral or bacterial infections than usual.
2. They also may become anemic .
3. Children with leukemia might bruise and bleed very easily
4. Pain in the bones or joints, sometimes causing a limp
5. Swollen lymph nodes (sometimes called swollen glands) in the neck, groin, or elsewhere
6. An abnormally tired feeling`
7. Poor appetite
8. Fevers with no other symptoms
9. Abdominal pain (caused by abnormal blood cells building up in organs like the kidneys, liver, or spleen)

Diagnosis: To determine whether a child has leukemia,

1. Physical examination
2. Check the liver and spleen
3. Take a medical history
4. CBC (complete blood count) to measure the numbers of white cells, red cells, and platelets in the child's blood. A blood smear will be examined under a microscope to check for certain specific types of abnormal blood cells usually seen in patients with leukemia. Blood chemistries also will be checked.

Then, depending on the results of the physical exam and preliminary blood tests, the child might need:

1. A bone marrow biopsy and aspiration.
2. A lymph node biopsy.
3. A lumbar puncture (spinal tap)
4. Imaging studies, such as X-rays, ultrasounds, CT scans, or MRIs

Treatment:

1. Chemotherapy is the main treatment for childhood leukemia, although the dosages and drug combinations may differ. Chemo can be given by mouth, into a vein, or into the spinal fluid.
2. Radiation therapy (high-energy rays that kill cancer cells), targeted therapy (specific drugs that identify and attack cancer cells without hurting normal cells), and stem cell transplants (the introduction of healthy stem cells into the body).