

## Anemia in Pregnancy

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### Abstract

Anemia is one of the most prevalent nutritional deficiency problems affecting pregnant women. All pregnant women are at risk for becoming anemic that is because iron need for mother and fetus gradually increases during pregnancy and reaches its highest level at the end of the pregnancy. The most important cause of anemia during pregnancy is an inadequate of iron, because diet alone is not sufficient to meet iron requirement during pregnancy. Anemia in pregnancy is considered one of the major risk factors contributing to maternal morbidity and mortality. That is why early diagnosis and treatment of anemia is very important in pregnant women.

**Key words:** Anemia, Pregnancy, Iron deficiency, Maternal morbidity, Maternal mortality

### Introduction

Anemia is one of the most prevalent nutritional deficiency problems affecting pregnant women. Anemia in pregnancy is considered one of the major risk factors contributing to maternal deaths in developing countries. About one-third of the global population (over 2 billion) is anemic, which corresponds to 24.8% of the world's population. Anemia directly or indirectly contributes to a significant proportion of maternal death in the developing world (WHO, 2004). Anemia is more common in women especially if they are young, poor, and pregnant (Khalil, A, et al. 2007). The prevalence, etiology and degree of severity vary in different populations, it is 35% for non pregnant women, and 51% for pregnant women globally, and 3-4 times higher in developing countries (Massawe, N., et al. 2009).

Anemia defined by the WHO as haemoglobin levels of less than 11 gm%. Haemoglobin level of 9.0-10.9 gm% is mild anemia, 7.0-8.9 gm% is moderate anemia and less than 7 gm% is called severe anemia. Maternal anemia in pregnancy is commonly considered a risk factor for poor pregnancy outcome and can result in complication that threatens the life

of both mother and fetus. The incidence of anemia in pregnancy ranges from 40-80% in the developing countries and is responsible for 20% of maternal death in developing countries (Dutta, 2008). In Nepal, the prevalence of anemia in pregnant women is 48%, lactating mother 39% and reproductive age women 33 percent (MOHP, 2012).

### Types of Anemia during pregnancy:

- Iron-deficiency anemia.** Iron deficiency is the most common cause of anemia in pregnancy. The most common causes of iron deficiency anemia during pregnancy and postpartum are iron deficiency and acute blood loss. This type of anemia occurs when the body doesn't have enough iron to produce adequate amounts of hemoglobin. That's a protein in red blood cells. It carries oxygen from the lungs to the rest of the body. In iron-deficiency anemia, the blood cannot carry enough oxygen to tissues throughout the body. Iron deficiency anemia has adverse health consequences in the mother and baby. The effects in mother are decreased physical activity and increased risk of morbidity and mortality. Iron-deficiency anemia during

pregnancy is linked to an increased risk of preterm delivery and low birth weight.

- **Folate-Deficiency Anemia.** Folate, also called folic acid, is a type of B vitamin. The body needs folate to produce new cells, including healthy red blood cells. During pregnancy, women need extra folate. But sometimes they don't get enough from their diet. When that happens, the body can't make enough normal red blood cells to transport oxygen to tissues throughout the body. Folic Acid is a common supplement taken by pregnant women, but it can also be found in fortified foods such as cereals, leafy vegetables, bananas, melons and legumes. Folate deficiency can directly contribute to certain types of birth defects, such as neural tube abnormalities (spina bifida) and low birth weight.
- **Vitamin B12 deficiency.** The body needs vitamin B12 to form healthy red blood cells. When a pregnant woman doesn't get enough vitamin B12 from her diet, her body can't produce enough healthy red blood cells. Women who don't eat meat, poultry, dairy products, and eggs have a greater risk of developing vitamin B12 deficiency, which may contribute to birth defects, such as neural tube abnormalities, and could lead to preterm labor.

#### **Causes of Anemia during Pregnancy:**

- A lack of iron in the diet as a result of not eating enough iron-rich foods or the body's inability to absorb the iron being consumed.
- Pregnancy itself because the iron being produced is needed for the woman's body to increase her own blood volume. Without an iron supplement, there is not enough iron to feed the blood supply of the growing fetus.
- Heavy bleeding due to menstruation, an ulcer or polyp, blood donation causes red blood cells to be destroyed faster than they can be replenished.

#### **Symptoms of Anemia in Pregnancy:**

##### **Early stage**

- Pallor: - pale skin on face and palm of hand, lips, tongue and mucous membrane of eyelids (conjunctiva)

- Weakness and fatigue
- Headache, palpitation
- Anxiety, irritability
- Smooth, sore tongue; lesions at corners of mouth (cheilosis)
- Tingling, numbness, or burning sensations in all extremities

##### **Late stage**

- Difficulty in breathing and increase heart rate
- Fainting or feeling faint
- Spoon-shaped nails (koilonychias) or nails that are weak or brittle
- Unusual obsessive food craving, known as pica, may develop

##### **Investigations**

1. History taking: - history of heavy menstruation women, history of hookworms and whipworms and malaria.
2. Physical examination: - pale skin on face and palm of hand, lips, tongue and mucous membrane of eyelids, sore in mouth, spoon shaped nails.
3. Blood tests: - hemoglobin (Hb) low level makes the diagnosis of anemia
4. Stool test
  - Occult blood test (i.e., hidden blood)
  - Routine stool test to detect worm infestation

##### **Preventive Measures:**

1. Avoid early marriage and child bearing before 18 years, which cause increases the demand of iron.
2. Avoidance of frequent childbirths- a minimum interval should be at least 2 years
3. Diet-balanced diet with rich in iron and protein should be provided. The foods rich in iron are liver, meat, egg, green vegetables, whole wheat and fruits.
4. Supplementary iron therapy-even with a well balanced diet. Supplementary iron should be a routine from beginning of second trimester of pregnancy.

5. Daily administration of 200mg of ferrous sulphate along with 1mg folic acid is effective for prevention.
6. Promoting cessation of cigarette smoking: - the nicotine acid in tobacco raises the heart rate and blood pressure. Nicotine acid can also cause the coronary arteries to constrict which don't allow the blood flow to different parts of the body.
7. Avoiding excessive alcohol: - which causes gastrointestinal bleeding that cause blood loss.
8. Use antihelminthic medicine every six months to all family members to prevent from worm infestations.
9. Test malaria parasite (MP) if malaria prevalence high.

### Complications

- There is a chance of pre-eclampsia related to hypoproteinaemia.
- Intercurrent infection due to diminish resistance.
- Heart failure may develop at 30-32 weeks of pregnancy.
- Chance of postpartum hemorrhage because anemic mother can go in post-partum haemorrhage with minimal blood loss.
- Cardiac failure which may occur during labor or immediately after delivery.
- Increased chance of puerperal sepsis, sub involution, poor lactation, puerperal venous thrombosis and pulmonary embolism.
- Increased risk of pregnancy complications such as preterm birth, low birth weight, morbidity, perinatal mortality, fetal growth retardation and mental retardation.

### Conclusion

In pregnancy, anemia has a significant impact on the health of the fetus as well as that of the mother. Anemia during pregnancy is especially a concern because is associated with low birth weight, premature birth and maternal mortality. The most important cause of anemia during pregnancy is an inadequate of iron, because diet alone is not sufficient to meet iron requirement during pregnancy. Because

an anemia in pregnancy is associated with maternal and perinatal morbidity and mortality, therefore every pregnant woman should visit antenatal clinic for the regular check-up for early detection and management for the prevention of anemia during pregnancy.

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