



ANAEMIA DURING PREGNANCY

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ABSTRACT

Nutritional anaemia due to iron and folate deficiency is a major global Public Health problem. South Asia ranks among the regions, which have the highest prevalence of anaemia in the world and India perhaps has the highest prevalence of anaemia among the South Asian countries. Prevalence of anaemia is higher among pregnant women and preschool children. Even among higher income educated segments of population about 50% of children, adolescent girls and pregnant women are anaemic. Inadequate dietary iron, folate intake and poor bioavailability of dietary iron from the fibre, phytate rich Indian diets are the major factors responsible for high prevalence of anaemia. Increased requirement of iron during growth and pregnancy and chronic blood loss contribute to higher prevalence in specific groups. Many times anaemia is directly or indirectly responsible for maternal deaths. Early detection and effective management of anaemia in pregnancy can contribute substantially to reduction in maternal mortality. Maternal anaemia is associated with poor intrauterine growth and increased risk of preterm births and low birth weight rates. This in turn results in higher perinatal morbidity and mortality, and higher infant mortality rate. Maternal anaemia contributes to intergenerational cycle of poor growth in the offspring. Early detection and effective management of anaemia in pregnancy can lead to substantial reduction in under nutrition in childhood, adolescence and improvement in adult height.

Key words: Anaemia; Pregnancy; Hemoglobin; Iron.

INTRODUCTION

Prevalence of anaemia in India is among the highest in the world. Prevalence of anaemia is higher among pregnant women and preschool children (De Mayer and Tegman, 1988). Even among higher income educated segments of population about 50 percent of children's, adolescence girls and pregnant women are anemic. Inadequate dietary iron, folate intake due to low vegetable consumptions, perhaps low vitamin intake and poor bioavailability from the fibre, phytate rich Indian diets are the major factors responsible for high prevalence of anaemia. Increased requirement of iron during growth pregnancy and chronic blood loss contribute to higher prevalence in specific groups. In India anaemia is directly or indirectly responsible for maternal deaths. Early detection and effectively management of anaemia in pregnancy can contribute substantially to reduction in maternal motility. Maternal anaemia is associated with poor intrauterine growth and increased risk of preterm births and low birth rates. This in turn results in higher perinatal morbidity and mortality, and higher infant mortality rate. Maternal anaemia contributes to intergenerational cycles of poor growth in the offspring. Early detection and effective management of anaemia in pregnancy can lead to substantial reduction in under nutrition in childhood, adolescence and improvement in adult height (Florentino Rudolfo, 2003).

Anaemia is a lack of red blood cells, which can lead to a lack of oxygen carrying ability, causing unusual tiredness. The deficiency occurs either through the reduced production or an increased loss of red blood cells. These cells are manufactured in the bone marrow and have a life expectancy of approximately four months.

CAUSES

Women often become anemic during pregnancy because the demand for iron and other vitamins is increased. The mother must increase her production of red blood cells and, in addition, the foetus and placenta need their own supply of iron, which can only be obtained from the mother. In order to have enough red blood cells for the foetus, the body starts to produce more red blood cells and plasma. It has been calculated that the blood volume increases approximately 50 percent during the pregnancy, although the plasma amount is disproportionately greater. This causes a dilution of a blood, making the hemoglobin concentration fall. This is a normal process with a hemoglobin concentration at its lowest between weeks 25 and 30. The pregnant woman may need additional iron supplementation, and a blood test called

serum ferritin is the best way of monitoring this (WHO, Geneva, 1989).

Other causes include a diet low in iron. Vegetarians, and dieters in particular, should make sure their diet provides them with enough iron, lack of folic acid in the diet, rarely, a lack of vitamin B12, loss of blood due to bleeding from hemorrhoids (piles) or stomach ulcers, anaemia is more common in women who have pregnancies close together and also in women carrying twins or triplets.

Symptoms

If the woman is otherwise healthy, she will rarely have any symptoms of anaemia unless her hemoglobin (red pigment) is below 8p/dl. In the early stages of anaemia, you may not have obvious symptoms. And many of the symptoms are ones that you might have while pregnant even if you're not anemic. So be sure to get routine blood tests to check for anaemia at your prenatal appointments. The first symptoms will be tiredness and paleness of skin, lips and nails, palpitations i.e, the awareness of the heartbeat, breathlessness and dizziness can occur, though they are unusual, if the anaemia is sever (less than 6g of hemoglobin per deciliter of blood), it may cause chest pain (angina) or headaches (WHO, Geneva, 1989).

Anaemia in pregnancy

According to WHO guidelines if hemoglobin level is less than 11.0 gm in pregnancy and according to Indian standard if hemoglobin level is less than 10.5 gm then woman is said to be anemic.

Types

1. Iron deficiency anaemia is commonest which can be due to dietary deficiency, worm infestations or due to repeated pregnancies at short intervals. This type of anaemia occurs when the body doesn't have enough iron to produce adequate amounts of hemoglobin. It carries oxygen from the lungs to the rest of the body. In iron-deficiency anaemia, the blood cannot carry enough oxygen to tissues throughout the body. Iron deficiency is the most common cause of anaemia in pregnancy.
2. Megaloblastic anaemia is commonly due to folic acid deficiency in pregnancy. Folate, also known as folic acid, which is a type of vitamin B. 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. Folate deficiency can directly contribute to certain types of birth defects.

3. Thalassemia (microcytic) is a blood disorder passed down through families (inherited) in which the body makes an abnormal form of hemoglobin, in red blood cells that carries oxygen. The disorder results in excessive destruction of red blood cells, which leads to anaemia.
4. Hemoglobinopathy is inherent defect in structure of haemoglobin which results in defective synthesis of hemoglobin in red cells.
5. 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. Blood loss during and after delivery can also cause anaemia.

Diagnosis

Hemogram is the main test which includes hemoglobin, red cells count, red cell Hemoglobin concentration, peripheral blood film to know the type of deficiency. More specific test like serum ferritin and TIBC levels may be required to define the exact cause of anaemia (WHO, Geneva, 1989).

Prophylaxis

It is advisable to build up iron store before a woman marries and becomes pregnant. This can be achieved by:

- 1) Routine screening for anaemia for adolescent girl from school days
- 2) Encouraging iron rich food
- 3) Fortification of widely consumed food with iron
- 4) Providing iron supplementation from school days
- 5) Annual screening for those with risk factor

Iron rich foods: pulses, cereals, beet root, green leafy vegetables, meats, liver, egg, fish, legumes, dry beans and iron enriched white breads etc.

Oral iron therapy

Oral iron is safe, inexpensive and effective way to administer iron. Oral route should be the route of choice in routine cases. Parental route of iron therapy only be considered when oral route is not possible due to any reason. If all pregnant women receive routine iron and folic acid, it is possible to prevent nutritional anaemia in pregnant woman. National nutritional anaemia prophylaxis program advises 60mg elemental iron and 500 microgram of folic acid daily for 100 days to all pregnant women. However it is suggested that 120 mg of elemental iron and 1mg folic acid are the optimum daily doses needed to prevent pregnancy anaemia. The higher dose in Indian women is required as they start pregnancy with low or absent iron stores due to poor nutrition and frequent infection like hook worm and malaria (WHO, Geneva, 1989).

How to select the iron salt

There are many iron preparations available in the market and a clinical is often confused as to which iron preparation should be advised to the patient. Ferrous sulfate is least expensive and best absorbed form of iron, it is also allows more elemental iron absorbed per gram administered, if for some reason this is not tolerated, then ferrous gluconate, fumarate are the next choice for iron therapy. However the iron salt should be selected based on compliance of the patient, tolerance, side effects, and clinical situation of the patient and availability of the particular salt. Oral iron must be continued for 3-6 months after hemoglobin has come to normal levels. This helps in building iron stores (NIN, ICMR, 1999; 2003).

Timing of oral iron intake in relation to food

It is true that if iron is taken with food, there is some reduction in side effect related to GI tract. However staple Indian diet consists of cereals and cereals contain phytic acid. Phytate reduce iron absorption. Addition of vitamin C in medicine or in the diet enhances iron absorption. If the predictable rise in hemoglobin does not occur after the oral therapy, one must find out the possible reasons. Some of the reasons are as follows:

1. In correct diagnosis
2. Mal-absorption syndrome
3. Presence of chronic infection
4. Loss of iron from the body
5. Lack of patient's compliance
6. Ineffective release of iron from a particular preparation

Are there any side effects from taking iron supplements?

1. High levels of iron from supplements can upset your gastrointestinal tract. Most often it leads to constipation, which is already a problem for many pregnant women.
2. Heartburn, abdominal discomfort, nausea, vomiting, or, less commonly, diarrhea.
3. Stools look darker when you start taking iron. That's a normal and harmless side effect.

Severe anaemia in late pregnancy (after 32 weeks)

These patients should ideally be managed in a hospital setting. They may or may not present with heart failure. However they all need urgent admission and bed rest. They need complete rest with sedation, oxygen. In case, of CCF patient should be given digitalis, diuretics and packed red cells. Packed red cells are preferred choice for severe anaemia in later part of pregnancy. This should be infused along with diuretics. Once the patient is stabilized total dose infusion of iron dextran may be considered.

Risks of anaemia in pregnancy

Severe or untreated iron-deficiency anaemia during pregnancy can increase your risk of:

1. Preterm or low-birth-weight baby
2. Blood transfusion (if you lose a significant amount of blood during delivery)
3. Postpartum depression

Untreated folate deficiency can increase your risk of having a:

1. Preterm or low-birth-weight baby
2. Baby with a serious birth defect of the spine or brain (neural tube defects)

Untreated vitamin B12 deficiency can also raise your risk of having a baby with neural tube defects.

CONCLUSION

Gender is a critical determinant of health and mental illness. Gender determines the differential power and control men and women have over the socio-economic determinants of their health and lives, their social position, status and treatment in society and their susceptibility and exposure to specific health risk. Gender differences occur particularly in mental disorders like depression, anxiety and somatic complaints and to be more specific in problems like anaemia that too specially during pregnancy. These conditions in which women are directly involved constitute a serious public health problem. Reducing the over representation of anemic women would contribute significantly to lessening the global burden of disability of future generation caused due to anemic in women. To sum up, like healthy mind stays in healthy body, likewise healthy child is the part of society because of healthy mother.

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