ANAEMIA IN PREGNANCY: CAUSES, TYPES, SIGNS AND SYMPTOMS, RISK FACTORS, DIAGNOSIS, PREVENTION AND MANAGEMENT.

A SEMINAR PRESENTED

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SUMMARY

Anaemia in pregnancy is defined as a haemoglobin concentration of less than 11g/dL when the blood is examined. The most common cause of anaemia in pregnancy is lack of iron. Less often it is caused by folic acid deficiency. The most at risk of anaemia in pregnancy are women of low socio-economic group, teenagers and women with frequent interval between pregnancies. However this can be prevented and managed by improving nutritional values while pregnant, taking routine antenatal drugs and intermittent estimation of hemoglobin level at least four times during the women's visit before delivery.

INTRODUCTION

Anemia in pregnancy is a very common problem in most developing countries.

WHO (World Health Organization) estimates that more than half of pregnant women in the world have a hemoglobin level indicative of anemia (<11.0g/dl), the prevalence may however be as 56 or 61% in developing countries.

Women often become anemic during pregnancy because the demand for iron and other vitamins is increased due to physiological burden of pregnancy.

Anemia ranges from mild, moderate to severe and the WHO pegs the hemoglobin level for each of these anemia in pregnancy at 10.0-10.9g/dL (mild anemia), 7-9g/dL (moderate anaemia) and <7g/dL (severe anaemia),(WHO, 2013).

In pregnancy, anaemia has a significant impact on the health of the foetus as well as that of the mother. 20% of maternal deaths in Africa have been attributed to anaemia.(Goonewarde et al,2012).

Foetus is at risk of preterm deliveries, low birth weights, morbidity and perinatal mortality due to impairment of oxygen delivery to placenta and foetus.

ANAEMIA

Anaemia is a condition in which the number of red blood cells or their oxygen – carrying capacity is insufficient to meet the physiological needs of an individual which consequently will vary by age, sex, and environment.

WHO defined Anaemia in pregnancy as a haemoglobin concentration of less than 11g/dl.

When one have anemia during pregnancy, the blood doesn't have enough healthy red blood cells to carry oxygen to the tissues and to the baby.

During pregnancy, the body produces more blood to support the growth of the baby. If one is not getting enough iron or certain other nutrients, the body might not be able to produce the amount of red blood cells it needs to make this additional blood.

Anemia can leave one feeling tired and weak. If it is severe but goes untreated, it can increase the risk of serious complications like preterm delivery.

Types of Anemia During Pregnancy

Several types of anemia can develop during pregnancy. These include:

- Iron-deficiency anemia
- Folate-deficiency anemia
- Vitamin B12 deficiency

CAUSES OF ANAEMIA

IRON-DEFICIENCY ANEMIA: 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 is the most common cause of anemia in pregnancy. (Van Den et al, 2007)

FOLATE-DEFICIENCY ANEMIA: Folate is the vitamin found naturally in certain foods like green leafy vegetables. 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. Man made supplements of folate are called folic acid**.**

Folate deficiency can directly contribute to certain types of birth defects, such as neural tube abnormalities 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.

Risk Factors for Anemia in Pregnancy

All pregnant women are at risk of becoming anemic. That's because they need more iron and folic acid than usual. But the risk is higher if one:

- is pregnant with multiples (more than one child)
- Have had two pregnancies close together
- Don't eat enough foods that are rich in iron
- Had anemia before one became pregnant

Symptoms of Anemia during Pregnancy

The most common symptoms of anemia during pregnancy are:

- Pale skin, lips, and nails
- Feeling tired or weak
- Dizziness
- Shortness of breath
- Rapid heartbeat
- Trouble concentrating

In the early stages of anemia, one may not have obvious symptoms. And many of the symptoms are ones that one might have while pregnant even if one is not anemic. So to be sure, routine blood tests are checked for anemia at prenatal appointments.

Risks of Anemia in Pregnancy

Severe or untreated iron-deficiency anemia during pregnancy can increase one risk of having:

- A preterm or low-birth-weight baby
- A blood transfusion (if you lose a significant amount of blood during delivery)
- Postpartum depression
- A baby with anemia
- A child with developmental delays

Untreated folate deficiency can increase one risk of having a:

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

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

Tests for Anemia

During one's prenatal appointments, blood test will be done so that the doctor can check whether one have anemia. Blood tests typically include:

•Hemoglobin test. It measures the amount of hemoglobin -- an iron-rich protein in red blood cells that carries oxygen from the lungs to tissues in the body.

•Hematocrit test. It measures the percentage of red blood cells in a sample of blood.

INVESTIGATION

•Haemoglobin content estimation will reveal a reduction. (Normal range 12-16gldL)

•Pack cell volume (PCV) Haematocrit will reveal a decrease.

(Normal range 0.37-0.47L/L).

If one is anemic during pregnancy, one may need to start taking an iron supplement and/or folic acid supplement in addition to the prenatal vitamins (Bregmann et al, 2010). Foods that are high in iron and folic acid are also encouraged in one's diet.

In addition, one may be asked to return for another blood test after a specific period of time so that the doctor can check if the hemoglobin and hematocrit levels are improving.

To treat vitamin B12 deficiency, doctor may recommend that one take a vitamin B12 supplements.
One may include more animal foods in her diet, such as:
•meat
•eggs
•dairy products

PREVENTING ANEMIA

To prevent anemia during pregnancy, one should make sure she get enough iron. Eat well-balanced meals and add more foods that are high in iron to her diet.
Aim for at least three servings a day of iron-rich foods, such as:
•leafy, dark green vegetables (such as spinach, broccoli, and kale)
•iron-enriched cereals and grains
•beans, lentils, and tofu
•nuts and seeds
•eggs
Foods that are high in vitamin C can help one body absorb more iron. These include:
•citrus fruits and juices
•strawberries
•kiwis
•tomatoes
Also, choose foods that are high in folate to help prevent folate deficiency. These include:
•leafy green vegetables

•citrus fruits and juices
•dried beans
•breads and cereals fortified with folic acid

WAYS TO PREVENT COMMON TYPES OF ANAEMIA DURING PREGNANCY

•**Prenatal vitamins**: Prenatal vitamins usually contain iron and folic acid, taking a prenatal vitamin one a day is an easy way to get essential vitamins and minerals for sufficient red blood cell production.

•**Iron supplements:** Taking iron supplement daily as prescribed..

•**Proper nutrition**: Sufficient amount of food containing iron and folic acid should be taken while pregnant such as poultry, fish, lean red meats, beans, nuts and seeds, dark leafy greens, eggs etc.

MANAGEMENT IN PREGNANCY

•In mild anaemia in pregnancy, the patient is given iron tablet for continuous maintenance of her haemogblobin level.

•In severe case where the patient pack cell volume is 5-21%, patient is admitted immediately, grouping and cross matching of blood done and transfusion of blood is commenced.

Though parental iron dextran injection may equally be given before considering transfusion

MATERNAL COMPLICATION / EFFECT ON THE MOTHER

- Heart failure
- Evidence of pregnancy induced hypertension
- Maternal death

EFFECT ON FETUS/BABY

- Fetal hypoxia
- Low birth weight
- Still birth
- Neonatal death

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