ANAEMIA IN PREGNANCY

Introduction

- Anaemia is the commonest medical disorder in pregnancy and has a varied prevalence, aetiology and degree of severity in different population.

- It is responsible for 40-60% of maternal deaths in developing countries due to direct, as well as indirect deaths from cardiac failure, haemorrhage, infection and pre-eclampsia.

- It also increases perinatal mortality and morbidity due to preterm deliveries, intrauterine growth retardation, low iron stores, iron deficiency anaemia and cognitive and affective dysfunction in the infant.

Anaemia during pregnancy is diagnosed as Hb concentration below 11 g/dl or haematocrit level below 33%.

- **Severity of anaemia:**
- **According to WHO, anaemia is classified according to severity into:**
- **1- Moderate (7- less than 11 g/dl)**
- **2- Severe (4- 6.9 g/dl)**
- **3- Very severe (less than 4 g/dl).**

Causes and predisposing factors

Low iron intake

- Low intake of iron-rich food either due poverty or dietary habits.
- Nausea and vomiting

Increased demands

Chronic or repeated blood loss due to

- Heavy menstruation
- High parity
- Parasitic infestation (Ancylostoma)
- Bleeding pile

In adequate absorption /utilization of iron.

- Foods that have a strong inhibiting effect on iron absorption including tea ,coffee , egg yolk and bran
- Achlorhydria and hypochlorhydria.

Malabsorption syndrome

Iron Deficiency Anaemia

- **Daily Requirements:**
- Normal iron requirement is 10 mg/day of which 1mg is absorbed. Requirement increases during pregnancy to 15mg/ day.
- **Aetiology.**
- 1- Dietary habits: Inadequate intake of iron, poverty, pica (ingestion of various substances having no dietary value and it is one of the manifestation of iron deficiency anaemia. Presence of hyperemesis may also reduce iron intake.
- 2- Defective absorption of iron e.g. achlorhydria., warm infestation, amoebiasis and giardiasis,
- 3- Increased demand e.g. multiple pregnancies, and short inter pregnancy spaces and prolonged periods of lactation. .
- 4- Chronic blood loss e.g. abnormal uterine bleeding, hookworm infestations, and piles.

Clinical Picture

*(***A) Symptoms: general symptoms of anaemia as;**

- **-** easy fatigability,
- - headache,
- - dysponea,
- - palpitation.

(B) Signs:

- - Pallor which can be detected in the face, palm of the hand, nail bed and mucus membranes of the mouth and conjunctiva.
- - Angular stomatitis and red glazed tongue.
- - Nails are brittle, striated with loss of their lustre. Spooning of the nails may occur in severe cases.

Treatment:

- **1.** *Diet:* liver, meat, kidney, eggs and green vegetables are rich in iron.
- 2. *Oral iron therapy:* ferrous sulphate or ferrous gluconate 300 mg t.d.s after meals.
- Side effects: nausea, vomiting and constipation.
- *3. Parentral iron therapy:*
- *Indications:*
- a- Malabsorption syndrome.
- b- Intolerance to oral iron.
- c- Need to rapid response.
- *Preparations:*
- a- Iron-dextran complex: IV or IM injection.
- b- Iron-sorbitol-citrate complex: IM injection only.
- *Side effects:*
- i- IM injection is irritant, painful, stains the skin
- and less absorbed so IV injection whether by repeated small doses or infusion in saline solution is preferable.

- ii- IV therapy may be complicated by flushing,
- urticaria, arthralgia, fever, lymphadenopathy, phlebitis and anaphylaxis.
- *4- Packed RBCs :* is used if more rapid response is needed e.g. pre-operative.
- Prophylactic iron therapy is particularly indicated in high risk group as high parity, multiple pregnancy, and low socio-economic class. In absence of actual anaemia, prophylactic therapy is better deferred till the end of the first trimester as nausea and vomiting are common in this period.

Megaloblastic Anaemia

(A) Folic Acid Deficiency Anaemia:

- It is uncommon. Folic acid is a fundamental element in cell division and cell growth. The more active a tissue is in reproduction and growth, the more dependent on folate coenzymes (e.g. bone marrow and epithelial lining).

Daily Requirement:

- Normal folate requirement is increased during pregnancy to meet the needs of the fetus, placenta, uterine hypertrophy and red cell mass. Daily intake of folic acid is 150-300 μg /day . Folic acid is rapidly destroyed by cooking and boiling. Maternal folic acid transports actively to the fetus.

- **Prophylactic**
- **Prepregnancy:**
- All reproductive aged women should consume 400 ug of folic acid per day either through diet or by supplementation.
- Patients with haemolytic anaemia should receive 5 mg /d folic acid before pregnancy and during pregnancy. a
- Diet rich in folic acid as liver, kidney and meat.
- **Antenatal**
- **All pregnant women should receive folic acid 200-300 ug /day through out pregnancy.**

Management of established folate deficiency:

- **Usually gastrointestinal absorption is impaired in folic acid deficiency.**
- **If diagnosis is made, prescribe oral folic acid 1 mg three times daily for all pregnancy and several weeks after delivery.**
- **Parenteral folic acid may be tried if there is no response**

Vit. B12 Deficiency Anaemia (Addisonian Pernicious Anaemia

- It is rare.
- Maternal absorption of B12 (which is depend on the presence of intrinsic factor that produced from the stomach) is not altered during pregnancy
- Cord blood level of B12 is higher than maternal level.
- B12 deficiency is usually associated with infertility and is rare during pregnancy.

Aetiology:

- **1.** Inadequate intake (rare , vegetarian).
- 2. Deficient intrinsic factor as in **pernicious anaemia** , atrophic gastritis or gastrectomy.
- 3. Malabsorption syndrome.
- 4. Resection of terminal ileum.
- 5. Increased demand e.g. pregnancy.

Clinical Picture:

- General symptoms of anaemia.
- GIT manifestations: as folic acid deficiency.
- Nervous manifestations:
- Subacute combined degeneration.
- Peripheral neuritis.

Management

- **Prepregnancy ; to restore fertility.**
- **Antenatal:**
- The recommended intake of B12 is 2.0 ug / day in non pregnant and is increased to 3 ug/ day during pregnancy.
- **Treatment:**
- Vit. B12 IM injection 100 ug / day for the first weeks then weekly injection.

- Total Dose (mg) = 2.4 Bwt (14 - Hbo) + 500