PFOGSI General Clinical Practice Recommendations

Management of Iron Deficiency Anemia in Pregnancy

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IRON DEFICIENCY ANEMIA IN PREGNANCY

1. Diagnosis

1.1. Iron deficiency anemia (IDA) is defined as hemoglobin less than 11g/dL in the first and third trimester of pregnancy and less than 10.5g/dL in the second trimester of pregnancy. (Grade A, Level 1)

1.2. Universal screening for iron deficiency anemia with hemoglobin is recommended for all pregnant women at the first antenatal visit. A complete blood count is preferable wherever feasible. (Grade A, level 4)

1.3. With a presumptive diagnosis of mild iron deficiency anemia, a trial of oral iron (100 mg/twice a day) for 1month is recommended. Further investigations are warranted if the hemoglobin levels have not increased after the trial of oral iron (rise in hemoglobin at 1 month). (Grade A, level 2)

1.4. In a low-resource settings, an empirical trial of oral iron for 4 weeks is advised up to 30-32 weeks of gestation in patients with mild anemia before considering further tests. (Grade A, level 4)

1.5. In patients with moderate to severe anemia or those with mild anemia not responding to empirical oral iron therapy further investigations should be performed to determine the other types of anemia like megaloblastic anemia, thalassemia , anemia of chronic disease etc. (GradeA , level 2)

1.6. The recommended investigations are complete blood count with peripheral smear, red blood cell indices (mean corpuscular volume, mean corpuscular hemoglobin, and mean corpuscular hemoglobin concentration), reticulocyte count, blood films for malaria parasites (particularly in endemic areas) and stool examination for ova, cyst and occult blood (Grade A; Level 4)

1.7. A peripheral blood picture can differentiate IDA (microcytic hypochromic) from megaloblastic anemia (macrocytic) or anemia of chronic disease (normocytic normochromic) or a dimorphic anemia. (Grade A, level3)

1.8. In the case of the microcytic and hypochromic type of anemia (low mean corpuscular volume), hemoglobin electrophoresis to rule out thalassemia trait is preferred if the facilities are available. Serum ferritin is advisable to differentiate iron deficiency anemia from thalassemia trait and anemia of chronic disease. (Grade A; Level 2)

1.9. In low resource settings, RBC count and Mentzer index (Mean Corpuscular Volume /RBC count) can be used to differentiate thalassemia from IDA. Mentzer index more than 13 indicates IDA whereas less than 13 indicates thalassemia. In β-thalassemiaRBC count is more than $5 \times 10^6/mm^3$ (Grade A, Level 3)

1.10. The diagnosis of iron deficiency may further be confirmed by tests like total iron binding capacity, serum iron, transferrin saturation, soluble transferrin receptors, zinc protoporphyrin, and erythrocyte protoporphyrin in settings with adequate resources. These

measurements may be helpful adjuncts to differentiate iron deficiency anemia from anemia of chronic disease. (Grade B; Level 3)

2. Management of IDA in pregnancy and postpartum

2.1. Awareness and health education strategies should continue with a greater momentum to encourage antenatal mothers to consume iron-rich foods and diets that enhance iron absorption. (Grade A, level 2)(appendix 1)

2.2. Daily iron supplementation (60-100 mg of iron and 500 µg of folic acid) for all non-anemic pregnant women at first antenatal visit is recommended for primary prevention of anemia with repeat hemoglobin at least once in each trimester. (Grade A, level 3)

2.3. Several oral iron supplements are available in the market with varying degrees of safety, efficacy, tolerability and cost. At present, there is insufficient evidence to recommend one preparation over the other. Therefore, treatment should be individualized based on the patient characteristics. (Grade A)

2.4. In pregnant women with established mild to moderate anemia, with a period of gestation less than 30-32 weeks, and those who respond to a trial of oral iron, the treatment should continue with 100 mg elemental iron twice daily and 500 µg of folic acid with an assessment for therise in hemoglobin. A repeat hemoglobin test is recommended after 4 weeks of oral iron. (Grade A, level 3)

2.5. After achieving the normalization of hemoglobin, a prophylactic daily iron supplementation (60-100 mg of iron and 500 µg of folic acid) is recommended for at least 6 months during pregnancy and should be continued in postpartum for another 6 months. (Grade A, level 2)

2.6. Pregnant women on oral iron supplements should be counseled to consume the tablets before meal or at least one hour after the meal along with supplements like Vitamin C to enhance absorption. Simultaneous intake of iron and calcium tablets should be avoided (Grade A, level 3)

2.7. Parenteral iron can be an alternative in mild to moderate anemic pregnant women who are non-compliant or intolerant to oral iron. The dose of parenteral iron should be calculated based on pre-pregnancy weight, aiming for a target Hb of 11g/dl using the following formula: Required iron dose (mg) = {2.4 × (target Hb-actual Hb) × pre-pregnancy weight (kg)} + 1000 mg for replenishment of stores (Grade A, level 3)

2.8. Parenteral iron is also recommended for pregnant women with severe anemia who are hemodynamically stable and require rapid restoration of iron stores in the second and early 3rd trimester of pregnancy. (Grade A, level 3)

2.9. Parenteral iron should be administered in a healthcare set up with basic facilities for resuscitation including an emergency tray to manage anaphylactic reactions. (Grade A, Level 4)

2.10. Of the various parenteral iron preparations, iron sucrose is preferred for use during pregnancy. (Grade A, level 3)

2.11. In postpartum anemic patients, parenteral intravenous (Iron sucrose/ ferric carboxymaltose) may be the preferred alternative over oral iron for ensuring compliance and faster response (Grade A, level 3)

2.12. Ferric carboxymaltosehas an advantage of administration as a bolus dose in the postpartum period for correction of anemia and restoration of iron stores. (Grade A,level 2)

2.13. High quality studies evaluating the safety and efficacy of ferric carboxymaltose in anemic pregnant women should be performed (Grade A; research recommendation)

2.14. The requirement for packed red cell transfusion for **severe anemia in pregnancy** should be determined based on the hemodynamic status, gestational age and ongoing hemorrhage. In pregnant women at less than 34 weeks of gestation, blood transfusion is recommended when Hb is less than 5 g/dL irrespective of signs of cardiac failure or hypoxia. In cases of impending heart failure at less than 34 weeks with Hb between 5-7 g/dL, transfusion should be considered. In women at more than 34 weeks of pregnancy, blood transfusion is recommended irrespective of the signs of cardiac failure or hypoxia when Hb less than 7 g/dL. (Grade B, level 3)

2.15. Packed red cell transfusion in **intrapartum period** should be considered when hemoglobin is less than 7g/dL or there is hemodynamic instability due to ongoing hemorrhage. (Grade B, level 3).

2.16. Packed red cell transfusion in the **postpartum period** should be considered when hemoglobinis less than 7g/dL or there is hemodynamic instability due to ongoing hemorrhage. (Grade B, level 3).

2.17. Deworming is routinely recommendedin pregnancy to avoid soil-transmitted helminthic infestation. Albendazole 40mgis safe for use after first trimester. (Grade A, level 2)