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Original Research Article

Oral and intravenous iron therapy for the treatment of iron deficiency anemia during antenatal and postnatal period: An expert consensus

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Abstract

Background: Approximately 52.2% of pregnant women between the ages of 15 and 49 in India suffer from anaemia.

Materials and Methods: Leading experts in obstetrics met to arrive at a consensus on the treatment of Iron deficiency (ID) and IDA during pregnancy.

Results & Conclusion: All patients with anemia should be screened for hemoglobinopathies, elemental iron was recommended for prophylaxis at 30 to 60 mg/day and for treatment, experts recommended 60 mg twice daily while others suggested 100 mg/day with vitamin-C. Oral iron is recommended in patients with mild anemia with vitamin C and parenteral iron in moderate or severe anemia. The recommendation was to administer a minimum of 1000 mg of intravenous iron, in addition to oral iron, for the treatment of moderate anaemia during the second trimester. If there is no improvement with oral iron, it is advisable to resort to parenteral iron. During the third trimester, it is recommended to administer intravenous iron to patients with moderate or severe anaemia. Prior to this, it is important to conduct a serum ferritin test. Ferrous ascorbate is most preferred oral iron. For parenteral iron, ferric carboxymaltose should be preferred. Blood transfusion is recommended in pregnant women of <34 weeks of gestation, if Hb is <5 g/dL irrespective of signs of cardiac failure or hypoxia, with Hb of 5-7 g/dl in presence of impending heart failure. In women with >34 weeks of gestation and Hb <7 g/dL, blood transfusion is recommended.

Keywords: Iron deficiency anemia (IDA), Thalassemia major (TM), Sickle cell hemoglobin (HbS).

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1. Introduction

Iron deficiency anaemia (IDA) is projected to affect 1.24 billion individuals worldwide.[1] Furthermore, the World Health Organization (WHO) has estimated that 40% of pregnant women worldwide suffer from anaemia,[2] making it a significant worry throughout pregnancy. Approximately 32 million pregnant women globally experience anaemia.[3] The Global Nutrition Assessment report of 2016 reported that

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India had the highest rates of iron deficiency.[4] According to the government of India estimates, about 52.2% of pregnant women aged 15-49 years are anemic.[5]

WHO defines anemia in pregnancy as hemoglobin (Hb) <11gm/ dL.[3,6] Postpartum anemia is defined as Hb <10 g/dL.[6] Anaemia caused by Iron Deficiency (ID) is the most common reason for anaemia during pregnancy, making around 50%-60% of all cases. ID and IDA in pregnancy can have several adverse maternal outcomes, such as pre-eclampsia, placenta previa, cesarean delivery, longer hospitalization, preterm birth, and increased likelihood of red blood cell transfusion.[7] Maternal anemia can cause the neonates to be small for gestational age, have a low 5- min Apgar score, and neonatal and perinatal death.[7,8] Even non-anemic ID in mothers can affect the long-term mental and psychomotor development of infants.[9]

Iron supplementation is a safe and cost-effective treatment for ID and IDA. Oral iron is the commonest first-line option; however, it can lead to gastrointestinal adverse effects, such as constipation, which can affect compliance.[10] Parenteral (intravenous) iron can be considered in women who do not tolerate oral iron. While there are many international guidelines exist on the diagnosis and management of ID and IDA in pregnancy, they differ in their criteria and recommendations.[11] In India, the Anaemia Mukt Bharat (AMB) initiative was launched in 2018 by the government, as part of the Strengthened Nationwide Iron Plus Initiative Project, with an objective of lowering the anemia rates by 1 to 3% per year.[11] The Federation of Obstetric and Gynaecological Societies of India (FOGSI) has also published Good Clinical Practice Recommendations (GCPR) for the Management of Iron Deficiency Anemia in Pregnancy.[12] However, there are some differences between the Anemia Mukt Bharat and FOGSI guidelines. Moreover, some of the recommendations are not in line with the WHO guidelines. Hence, a meeting of leading experts in obstetrics in India was convened to arrive at a consensus on the treatment of ID and IDA anemia during the antenatal and postnatal periods.

2. Materials and Methods

A national consensus meeting was organized in September 2023, to discuss the current evidence and guidelines on the management of ID and IDA during the antenatal and postnatal period**.** A total of 13 Indian experts in obstetrics attended this meeting. Comprehensive and most updated evidence and guidelines on the topic were presented. Experts discussed the evidence and guidelines in depth and shared their clinical experiences in managing the condition. Consensus on diagnosis and management of ID and IDA during pregnancy was reached through deliberations, on each topic discussed.

3. Result

3.1. Investigations for diagnosing iron deficiency anemia

Experts at the meeting recommended that CBC (Complete Blood Count) should be the initial clinical investigation to diagnose or rule out IDA. They recommended that it is important to assess CBC parameters such as hematocrit, mean corpuscular volume (MCV), mean corpuscular haemoglobin (MCH), mean corpuscular haemoglobin concentration (MCHC), and red cell distribution width (RDW) to indicate IDA. Low Hb despite normal MCHC and RBC indicate the need for an HBA2 test to rule out thalassemia, while high MCV and RDW indicate Vitamin B12 deficiency. Peripheral smear can provide clues to abnormal RBC forms, which might be indicators of hemoglobinopathies. Some experts shared that they do not routinely ask for serum ferritin. However, others recommended that ferritin should be measured to prevent IDA by detecting ID early. Moreover, serum iron levels are predictors of pre-eclampsia.[13]

The consensus was to utilise complete blood count (CBC) for the diagnosis of iron deficient anaemia. It was also determined that serum ferritin should be evaluated in order to detect iron deficiency early, before to the onset of anaemia. Guidelines generally recommend screening for anaemia in the first trimester of pregnancy, followed by further tests at 24-28 weeks and 36 weeks of gestation. The primary studies for assessing pregnancy-related anaemia should involve examining the red blood cell (RBC) indices and morphological characteristics.[14] The FOGSI GCPR also recommend RBC indices and peripheral blood smear evaluation as the initial investigation.[12] Peripheral blood smear can be useful in differentiating IDA from megaloblastic anemia and anemia caused by a chronic disease [12]. The characteristics of IDA are microcytosis, (low MCV <80 fl) and hypochromia (MCH <27 pg). Peripheral smear might show microcytic cells or pencil cells. The presence of a low mean corpuscular volume (MCV) along with an increased red cell distribution width (RDW) can serve as sufficient proof to begin iron therapy.[14] If there is both a folate and vitamin B12 shortage present, the peripheral smear will have a combination of small and large pale red blood cells, but the mean corpuscular volume (MCV) will be within the normal range.[15] However, up to 40% of patients with true IDA might have normocytic erythrocytes.[16] Hence, low serum ferritin is the most reliable confirmatory test for iron deficiency.[17] During pregnancy, women with sufficient iron levels see an initial rise in serum ferritin levels, which then progressively decline to approximately 50% of pre-pregnancy levels by 32 weeks due to hemodilution. However, there is a modest increase in the third trimester.[14] A cut-off value of less than 30 µg/dL has a specificity of 92% in diagnosing ID and is the recommended threshold.[18] The indications for serum ferritin testing during pregnancy are outlined in **Table 1**.

In the situation of inflammation (such as after surgery) or infection during pregnancy, the levels of serum ferritin may appear to be higher than they actually are, at the same time as the levels of CRP. There is no definitive test that accurately detects ID when there is inflammation present. A low Tsat (<16%) in the presence of low ferritin levels (specifically defined at <100 μg/dL) may be utilised in this context.[14]

Table 1: Indications for testing serum ferritin in pregnancy[14]

S. No.	Indications
1.	Prior to initiating iron therapy in individuals with a confirmed hemoglobinopathy,
2.	When contemplating an alternative aetiology for microcytic anaemia, other from iron deficiency (such as chronic inflammation, lead toxicity, or sideroblastic anaemia)
3.	Inadequate response to oral iron, particularly when non-compliance is likely
4.	In non-anemic women who are having high threat of iron depletion
5.	Before administration of parenteral iron to confirm iron deficiency

Nevertheless, the FOGSI GCPR recommends empirical oral iron for 4 weeks and further investigations only if the hemoglobin levels have not increased. In low-resource settings, they recommend a trial of oral iron up to 30-32 weeks of gestation in patients with mild anemia before sending for further tests.[12] However, experts at the meeting were in favor of early ferritin testing if feasible and recommended that this should be also done in public healthcare settings.

3.2. Screening all patients of anemia for hemoglobinopathies

Most experts believe that all anemia patients should be screened for hemoglobinopathies, especially thalassemia, using hemoglobin electrophoresis. They strongly recommended thalassemia screening in pregnant patients, even during the preconception stage. Other tests that were suggested included isoelectric focusing, chromatography, genetic testing (karyotype), and genetic tests for sickle cell anemia. They also suggested universal screening, especially in certain geographical regions with a high prevalence of hemoglobinopathies. However, few experts shared that they ask for hemoglobin electrophoresis only if they suspect anything beyond IDA e.g., when the patient is not responding to iron therapy despite good compliance, or a history of prolonged anemia. The final consensus was on sending all patients with anemia and all pregnant patients for hemoglobin electrophoresis considering the high prevalence of hemoglobinopathies in India.

Prevention and control of Thalassemia Major (TM) through screening of pregnant women to bring down the birth of children affected with TM is important.[19] Sickle cell disease is also common in many communities in central India, Gujarat, Maharashtra, and Kerala. Almost 1 to 35% of people in these regions are carrier of sickle cell disease. The prevalence of sickle cell hemoglobin (HbS) is as high as 48% in the tribal communities of some Southern, Central and Western states.[20]

The Indian government's National Health Mission algorithm for prenatal diagnosis of Thalassemia Syndromes recommends screening for six common ß - thalassemia mutations.[19] Different RBC indices and mathematical formulas are also used to differentiate between β-thalassemia trait (β-TT) and IDA before sending patients for confirmatory tests. Among these is the Mentzer test, which is a ratio of MCV to RBC. It has a sensitivity of 98.7% and specificity of 82.3%.[21] A study reported that RDW was significantly higher in women with IDA compared to those who had IDA and β-TT, or β-TT alone.[21]

3.3. Dose of elemental iron for prophylaxis and treatment of IDA in pregnancy

They deliberated that Indian guidelines recommend higher doses of 100 and 200 mg/day, whereas all international guidelines, including WHO recommend 30 to 60 mg of elemental iron. There was a consensus on using elemental iron for prophylaxis at a dose of 30 to 60 mg/day.

For the treatment of IDA, the experts opined that the dose depends on the level of hemoglobin.

Some suggested that they would administer the highest dose of 60 mg twice daily, while many others suggested 100 mg/day along with Vitamin C to increase the absorption of iron.

The World Health Organisation (WHO) recommends that pregnant women take a daily dose of 30-60 mg of elemental iron and 400 μg (0.4 mg) of folic acid as a preventive step. However, in the event that a woman is diagnosed with anaemia while pregnant, it is necessary to increase her daily intake of elemental iron to 120 mg until her haemoglobin levels have reached 11 gm/dL or above.[22] The FOGSI GCPR 2017 recommends that after achieving the normalization of Hb a prophylactic daily iron supplementation (60-100 mg of iron and 500 μg of folic acid) for at least 6 months during pregnancy and to be continued in postpartum for another 6 months. In pregnant women with established mild to moderate IDA, with a gestation period of <30-32 weeks, and responding to oral iron, the FOGSI GCPR recommends treatment to be continued with 100 mg elemental iron twice daily and 500 μg of folic acid.[12] The Anemia Mukt Bharat Guidelines 2018 also recommend 100 mg elemental Iron + 500 mcg Folic Acid daily as prophylaxis starting from the fourth month of pregnancy, to be continued throughout pregnancy and for 180 days, post-partum. For treatment of IDA, the Anemia Mukt Bharat Guidelines

recommend two tablets of iron and folic acid tablet (100 mg elemental iron and 500 mcg folic acid) daily for 6 months.[11]

A 40 mg ferrous iron/day supplement from 18 weeks of gestation has been demonstrated to be adequate in preventing ID in 90% of the women and IDA in at least 95% of the women during pregnancy and post-partum.[23] A study conducted in 2005 demonstrated that the haemoglobin (Hb) concentration during pregnancy can be sustained by initiating either 30 mg of iron plus 175 micrograms of folic acid or 60 mg of iron plus 350 micrograms of folic acid early on[25]. Another longitudinal study demonstrated that 60 to 100 mg iron supplementation is the best for prophylaxis with a low risk of hemoconcentration.[25] Gastrointestinal side-effects are dose dependent and usually encountered at ferrous iron doses above 100 mg/day.[26]

3.4. Hemoglobin threshold to start oral and parenteral iron

Experts agreed that no iron therapy should be administered in the first trimester. In the second trimester, the experts recommended oral iron in patients with mild anemia and parenteral iron in those with moderate or severe anemia along with vitamin C, for better absorption. However, some experts also suggested at least a single dose of 1000 mg parenteral iron along with oral iron to mothers with moderate anemia in the second trimester. Oral iron therapy should not be started for at least 5 days after the last injection of parenteral iron. The consensus was to provide patients with moderate anaemia the choice of initiating treatment with oral iron and doing follow-up assessments after one month, or providing both oral and parenteral iron options. If there is no improvement, they should be switched to parenteral iron. In the third trimester, all patients with moderate or severe anemia should be administered intravenous iron. If the patient is at a gestational age of 34 weeks or beyond with severe anemia, blood transfusion should be considered if the Hb is <7 gm/dL. Serum ferritin should be tested before administering IV iron. Hb monitoring was recommended every 4 weeks after initiating iron therapy.

These expert recommendations are partly different from the FOGSI GCPR, which recommends oral iron and folic acid in mild to moderate anemia presenting before 32 weeks of gestation, and to be continued until 6 months post-partum. Parenteral iron is recommended in women who are non-compliant or intolerant to oral iron. Parenteral iron is also recommended for pregnant women with severe anemia who are hemodynamically stable and require rapid restoration of iron stores in the 2nd and early 3rd trimester of pregnancy. Moreover, the GCPR also recommends prophylactic oral iron

for all non-anemic pregnant women at the first antenatal visit [12]. In the Anemia Mukt Bharat guidelines, oral iron is recommended for mild (Hb 10–10.9 g/dL) and moderate anemia (Hb is 7–9.9 g/dL) and IV iron if the woman presents late in pregnancy or is likely to be non-compliant. For severe anemia (Hb 5.0–6.9 g/dL), IV iron is recommended.[11]

3.5. Choice of oral and parenteral iron for the management of IDA

Experts suggested adding vitamin C to increase the absorption. Ferrous ascorbate is the most preferred formulation. However, in most public sector hospitals in India, ferrous fumarate is dispensed. For parenteral iron, all experts prefer ferric carboxymaltose (FCM). However, they shared that in public sector hospitals, FCM is unavailable and iron sucrose (IS) is administered.

The bioavailability of various iron preparations is shown in **Table 2**.

Table 2: Reported absorption of elemental iron from various iron preparations[27]

Iron preparation	Absorption (%)
Ferrous ascorbate	67
Ferrous sulfate	7.7–10.9
Iron polymaltose	8.8
Ferric ammonium citrate	2.4
Ferric hydroxide	2.4
Ferric orthophosphate	8.3
Sodium iron pyrophosphate	6.3
Ferric pyrophosphate	0
Ferrous fumarate	3–6.3
Ferrous bisglycinate	6–9.1
Ferrous gluconate	Less than or equal to ferrous sulfate
Carbonyl iron	70% of ferrous sulfate

Ferrous ascorbate is a synthetic chelate of iron in the ferrous state with ascorbic acid. Higher absorption of iron from ferrous ascorbate is due to the ascorbate component that prevents oxidation of the iron to a ferric state.[27] A study that compared the outcomes of various iron preparations in the treatment of IDA showed that ferrous ascorbate and bisglycinate were more effective than other preparations.[28] (**Table 3**).

Table 3: Mean Hb and ferritin increase with various iron preparations[29]

Group (n-50 in each)	Mean Rise in Hb on day 30 (D0-d30) (gm %)	Mean Rise in Hb on day 60(D0-60) (gm %)
Group I (Ferrous sulphate)	0.56±0.23	0.93±0.27
Group II (Ferrous fumarate)	0.61±0.22	1.06±0.28
Group III (Ferrous ascorbate)	0.63±0.23	1.13.0.35
Group IV (ferrous bisglycinate)	0.66±0.23	1.11±0.27
Group V (sodium feredetate)	0.67±0.22	1.09±0.31
ANOVA	1.870	3.418
p value	.116(NS)	.010(S)

Table 4: Comparative evaluation of different iron preparation groups after 3 months of therapy in postnatal and Gynecological patients[30]

Iron preparations	Tablet/ syrup	Postnatal			Gynecological		
		Mean rise in hb on d30	Mean rise in hb on d90	Mean rise in serum ferritin	Mean rise in hb on d30	Mean rise in hb on d90	Mean rise in serum ferritin
Ferrous sulphate SR	Tablet	1.55 ± 0.48	2.96 ± 0.88	30.20 ± 14.33	0.75 ± 0.21	2.31 ± 1.33	10.95 ± 1.64
Ferrous fumarate	Tablet	1.14 ± 0.37	2.68 ± 0.27	24.82 ± 12.40	1.05 ± 0.29	3.00 ± 0.48	14.29 ± 2.84
Ferrous ascorbate	Tablet	1.90 ± 0.63	3.41 ± 0.83	33.61 ± 10.16	2.75 ± 0.57	4.53 ± 0.70	39.32 ± 11.74
Colloidal iron	Syrup	2.34 ± 0.85	3.10 ± 0.87	28.79 ± 10.11	2.20 ± 0.56	3.88 ± 0.85	30.43 ± 11.67
Ferric ammonium citrate	Syrup	1.73 ± 0.82	2.47 ± 0.77	20.20 ± 8.70	18.94 ± 6.81	1.74 ± 0.37	10.69 ± 2.33

This was confirmed by another study that compared different oral iron preparations in gynecological and postnatal patients. Ferrous ascorbate showed maximum improvement in hemoglobin and serum ferritin levels after 3 months of treatment[29] (**Table 4**).

IV iron therapy is superior to oral iron in terms of the speed, absolute increase in Hb and replenishment of iron stores. A randomized, controlled study comparing IV FCM with oral ferrous sulfate (FS) in 252 pregnant women significantly demonstrated higher increase in Hb with FCM[31] (**Figure 1**). Women achieved faster anemia correction (Hb ≥ 11.0 g/dL): FCM - 84% in 3.4 weeks; FS - 70% in 4.3 weeks; odds ratio (OR): 2.06, P = 0.031. Moreover, those on FCM had fewer adverse effects.

A recent meta-analysis of 20 studies reported that IV iron therapy is associated with a statistically significant increase in maternal Hb and ferritin at delivery, and higher birthweight and neonatal ferritin compared to oral iron supplementation to treat IDA in pregnancy.[31] A previous meta-analysis of 6 studies reported similar findings.[32]

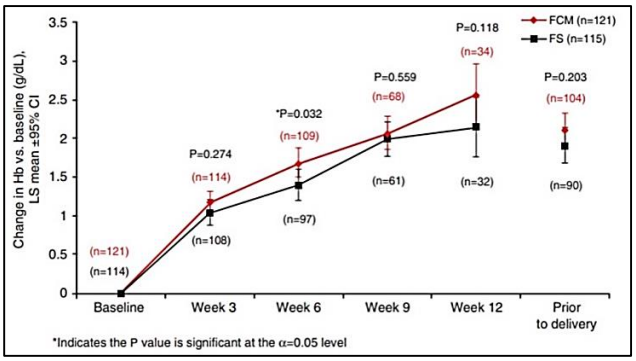

Figure 1: Change in hemoglobin levels with FCM vs FS

Among IV iron preparations, FCM has been found to be superior to IS in terms of efficacy as well as adverse effects. In a study among 200 patients in India, a significant increase in mean Hb from 7.76 ± 0.709 to 13.25 ± 0.606 was observed in patients treated with FCM and 7.64 ± 0.710 to 11.59 ± 0.733 g/dL (P < 0.001) in patients treated with IS after four weeks of treatment. The increase in serum ferritin levels were from 8.32 ± 1.787 to 38.94 ± 6.095 µg/L and 8.16 ± 1.540 to 27 ± 8.175 µg/L in patients treated with FCM and IS respectively after four weeks of treatment.[33] In another study, mean increase in Hb at 12 weeks was significantly higher in FCM group (29 g/L vs 22 g/L; p value < 0.01). FCM also showed a greater improvement in fatigue scores.[34] In a large, real-world study from India, 271 pregnant women in the 2nd and 3rd trimester of pregnancy received FCM (mean dose

~1000 mg). A significant increase in Hb was seen with FCM in 4 weeks (1.25 g/dL; $p < 0.001$). Patients with severe anemia reported an increase in Hb of 4.23 g/dL ($p = 0.01$). There were no adverse perinatal or neonatal outcomes.[35]

Another disadvantage with IV IS is limited dose per sitting. The maximum permissible dose is 200 mg per session or 600 mg per week. This increases to the total cost of therapy as it requires multiple hospital visits.[34] The dosage of FCM can be escalated to 1000 mg of elemental iron.[36] If the iron need is 1500 mg, 2 infusions of FCM 750 mg can be administered 1 week apart.

3.6. Calculating the dose requirement of FCM

All experts recommended using the simplified weight to Hb chart for the calculation of the iron dose requirement, over the Ganzoni formula, due to its ease in clinical practice.

The Ganzoni formula is based on the weight, current Hb, target Hb, and iron stores

Ganzoni formula

Total iron dose (mg iron) = Body weight (kg) x (Target - Actual haemoglobin) (g/L)* x 0.24

+ Iron for iron stores (mg iron)**

* Haemoglobin must be in g/L

** Iron stores

<35 kg body weight = 15 mg/kg body weight

>35 kg body weight = 500 mg

Example: 80 kg female with a haemoglobin of 80 g/L needs a dose of 80 x (150-80) x 0.24 + 500 = 1844 mg iron.[37]

The simplified weight and Hb table is an easier method to calculate the dose requirement (**Table 5**).[38]

Table 5: Hb-weight chart to calculate the dose of FCM

Body Weight	Cumulative FCM Dose	
	Hb <10 g/dL	Hb 10-14 g/dL
<35 kg	500 mg	500 mg
35 kg to <70 kg	1500 mg	1000 mg
>70 kg	2000 mg	1500 mg

*Notes: The maximum allowable single dose is 1000 mg of iron (equivalent to 20 mL) and further, the maximum suggested cumulative dose of FCM should be 1,000 mg of iron (20 mL) per week

3.7. Recommendation for management of IDA with Hb <5 g/dL

Transfusion in pregnancy is associated with an additional risk of RBC allo-immunization, volume overload, and fetal hemolytic disease.[13] All experts concurred that transfusion should be avoided as far as possible. They were in agreement with the FOGSI GCPR regarding the indications for blood transfusion. According to the GCPR, blood transfusion is recommended in pregnant women at <34 weeks of gestation, only when Hb is< 5 g/dL irrespective of signs of cardiac failure or hypoxia. Blood transfusion should also be considered in these patients if there are signs of impending heart failure, even when the Hb is 5-7 gm/dL. In women with >34 weeks of gestation and Hb < 7 g/dL, blood transfusion should be considered is recommended irrespective of the signs of cardiac failure or hypoxia.[12] However, supplemental iron should be provided if the Hb is >7 gm/dL.

These guidelines are also supported by the Royal College of Obstetricians and Gynaecologists (RCOG) and Association for the Advancement of Blood & Biotherapies (AABB)[40] (**Table 6**).

Table 6: Indications of blood transfusion in pregnancy in women with IDA[41]

Antepartum period	Intrapartum period	Post-partum period
1. Pregnancy < 36 weeks a. Hb < 4 g/dL with or without signs of cardiac failure or hypoxia b. 5-7 g/dL with presence of impending heart failure, hemodynamic instability or acute hemorrhage	a. Hb < 7 g/dL[in labor] [Decision of blood transfusion depends on medical history or symptoms] b. Severe anemia with decompensation or acute hemorrhage with decompensation	a. Anemia with signs of shock/acute hemorrhage with signs of hemodynamic instability b. Hb < 7gm %: Decision of transfusion depends on medical history or symptoms
2. Pregnancy > 36 weeks a. Hb < 7 g/dL even without signs of cardiac failure or hypoxia b. Severe anemia with decompensation or acute hemorrhage with decompensation c. Hemoglobinopathy/Bone marrow failure syndromes or malignancy		

Table 7: Expert recommendations

1.	CBC should be the initial clinical investigation to diagnose or rule out IDA. It is important to assess CBC parameters such as hematocrit, mean corpuscular volume (MCV), mean corpuscular haemoglobin (MCH), mean corpuscular hemoglobin concentration (MCHC), and red cell distribution width (RDW) to indicate IDA.
2.	To verify iron deficiency, ferritin testing should be implemented
3.	All anaemia patients should be screened for hemoglobinopathies, especially thalassemia, using hemoglobin electrophoresis.
4.	Recommend administering oral iron and folic acid for the treatment of mild to moderate anaemia occurring during the 2nd trimester of pregnancy.
5.	Use of oral iron and folic acid in mild to moderate anemia to be continued until 6 months post-partum
6.	For pregnant women with moderate to severe iron deficiency anaemia (IDA) who are in hemodynamically stable condition and need to quickly replenish their iron levels in the second and early third trimester of pregnancy, it is advised to use parenteral iron. When it comes to administering iron through injection, all specialists unanimously recommended ferric carboxymaltose. If the required iron dosage is 1500 mg, two infusions of FCM at a dosage of 750 mg each can be given with a one-week interval between them.
7.	Blood transfusion to be considered in women with >34 weeks of gestation and Hb <7 g/dL, irrespective of the signs of cardiac failure or hypoxia. However, supplemental iron should be provided if the Hb is >7 gm/dL.

4. Summary

According to the experts, there is a need to increase public and HCP awareness about anemia and the importance of testing for hemoglobinopathies. Among HCPs, an increased awareness about the distinctions between iron deficiency and anemia is necessary to detect iron deficiency before overt anemia develops in pregnant women. Ferrous ascorbate is the most preferred formulation due to better bioavailability. For parenteral iron, all experts preferred FCM. There needs to be an emphasis on using serum ferritin to confirm iron deficiency and plan the treatment accordingly.

5. The Way Forward

The challenge of non-compliance is real and needs to be acknowledged before a treatment is labelled as failure. The non-compliance could be due to economic reasons as well as adverse effects. Hence, testing for serum ferritin is important. In public setups, the challenge of availability needs to be addressed for prevention and appropriate treatment of IDA among the economically weaker population.

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8. Conflict of Interest

None.

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