"A PROSPECTIVE STUDY OF POSTPARTUM ANAEMIA- INCIDENCE AND INTERVENTIONS"

By

REG NO- BJ0121012

Dissertation

Submitted to the KLE Academy of Higher Education and Research, Belagavi, Karnataka

In Partial Fulfilment

of the Requirements for the Degree of

MASTER OF SURGERY (M.S)

In

OBSTETRICS AND GYNAECOLOGY

DEPARTMENT OF OBSTETRICS AND GYNECOLOGY
JAWAHARLAL NEHRU MEDICAL COLLEGE,
BELAGAVI, KARNATAKA

DECEMBER 2024 / JANUARY 2025

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LIST OF ABBREVIATIONS

AOR	Adjusted odds ratio
BID	Twice daily
CI	Confidence Interval
IM	Intramuscular
Inj	Injection
IV	Intravenous
LSCS	Lower segment caesarean section
NS	Neutral salaine
OD	Once daily
OR	Odds ratio
RBC	Red blood cell
RCT	Randomized controlled trial
rhEPO	Recombinant erythropoietin
SD	Standard deviation
WHO	World Health Organization

ABSTRACT

Background and Objective: Postpartum anemia is a growing public health concern with its increasing prevalence, is associated with significant morbidity and mortality and decreased quality of life. The present study was conducted to determine the incidence of postpartum anemia and to elicit the effectiveness of various treatment modalities for management.

Methods: All women aged 18 years or more admitted at the Department of Obstetrics and Gynecology, K.L.E's Dr. Prabhakar Kore Hospital and Medical Research Centre, Belagavi undergoing vaginal or caesarean section deliveries at a gestational age of at least 28 weeks during the study period were included.. Hemoglobin level of <10 g/dL measured 24 hours post delivery was considered as postpartum anemia. All patients were treated with various interventions including oral iron therapy, IV iron therapy and blood transfusion. Among the patients receiving parenteral mode of iron correction, 200 patients were followed up after 3 weeks to document the rise in haemoglobin.

Results: Overall, 4083 women underwent deliveries during the study period. Incidence of postpartum anemia in this study was 53.5%. 59.4% were treated with oral iron supplements and remaining were treated with either IV or blood transfusion. 200 women with IV iron therapy or blood transfusion were followed up for secondary analysis. Compared to postpartum day 1 significant improvement was noted in the mean ± SD Hemoglobin level at the follow up visit (mean difference [95% CI]: 1.07[1.02 to 1.13]; p=0.000). Highest mean improvement in hemoglobin levels was noted with 2 pint blood transfusion (2.1 ±0.5 g/dL) followed by Inj Fe sucrose 200 mg

(1.5± 0.4g/dL); p=0.000. Post hoc analysis showed significant improvements in patients who received 2 pint blood transfusion.

Conclusion: This study reports higher incidence of postpartum anemia among study population and emphasizes the need for proper prenatal and antenatal care to reduce the impact of postpartum anaemia on maternal health on a long term basis.

Keywords: Postpartum anaemia, Haemoglobin, Parenteral mode, Blood transfusion, Oral Iron supplementation.

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INTRODUCTION

Anemia is a common disease affecting over 1.5 billion people worldwide, with iron deficiency anemia being the most common form. Anemia is relatively common among women of reproductive age with increased incidence during pregnancy and postpartum period [1]. Hemoglobin concentration <10g/dL during postpartum period indicates anemia [2]. Immediate postpartum anemia occurs when the amount of red blood cell count is reduced or haemoglobin level is below 10g/dl. However, the cut off value to define anemia in postpartum period varies across studies and guidelines. The prevalence is although high in some developed countries, its much higher in developing countries including India. The prevalence is much higher among women living in rural settings with poor household and those without a formal education [3, 4].

Postpartum anemia is associated with increased likelihood of morbidity and mortality and overall decreased quality of life, it is a growing public health concern. Increased risk of mortality after delivery is associated with peripartum hemorrhage and anemia. Younger age, decreased space between pregnancies, higher parity, lower body weight, lack of formal education, nutritional deficiency and lack of accessible health services are the common risk factors associated with increased postpartum anemia. Studies have reported improvement in anemia among women with optimal healthcare utilization, increased age at first pregnancy, BMI, increased birth spacing and reduction in parity [5].

Since preexisting iron deficiency anemia is a major driver of postpartum anemia along with peripartum hemorrhage, intake of iron and folic acid supplements

during pregnancy is recommended. Studies have reported decreased incidence of postpartum anemia among women with adequate intake of iron and folic acid supplements during pregnancy. Additionally, postpartum anemia can be effectively managed with oral iron therapy, especially in cases of mild anemia. However, response to oral iron therapy is relatively slow in terms of replenishing iron stores and increasing hemoglobin levels. This led to alternative use of intravenous (IV) iron preparations, particularly in patients with moderate and/or severe anemia and among those who cannot tolerate oral iron therapy.[6,7]

Compared to Oral iron, IV iron has rapid onset and replenishes iron stores and serum ferritin levels much faster resulting is normalizing hemoglobin concentration and reversing anemia. However, on long term follow ups there is no much difference in oral and IV therapies. Based on these observations, upon achieving target hemoglobin levels and serum ferritin, IV iron therapy should be switched to oral iron therapy [8,9]. Among women with heavy peripartum hemorrhage with increased blood loss, blood transfusions are preferred for immediate reversal of hemoglobin concentrations. However, transfusion-induced sensitization, high cost and safety risks should be considered during blood transfusions.[10]

Considering high prevalence of postpartum anemia in developing countries and ambiguity in the treatment consensus, the present study was conducted to determine the incidence of postpartum anemia and to elicit the effectiveness of various treatment modalities for management of anemia.

AIM AND OBJECTIVES-

AIM-

To determine the incidence of postpartum anemia and to compare the efficacy of various interventions carried out for treatment of postpartum anemia.

OBJECTIVES

Primary objective

- To assess the incidence of postpartum anaemia.

Secondary objective:

- To find out various interventions carried out to correct anaemia.
- To compare the efficacy of various parenteral modes of interventions- IV iron [Iron sucrose, Ferric Carboxymaltose] and blood transfusion.

REVIEW OF LITERATURE

Postpartum anemia is a growing public health concern around the world. It is mainly due to the reduction in the hemoglobin concentration below the normal limits and occurs mainly due to severe blood loss, hemodynamic changes and fluid loss during and after childbirth.

Postpartum anemia is a major public health problem due to its associated mortality and morbidity characterized by reduced quality of life, reduction in cognitive functioning, decreased psychological and emotional health leading to depression. This may further lead to lack of attention towards child and reduced breast milk supply [11,12] Therefore, understanding the prevalence, risk factors and management approach for postpartum anemia is paramount.

Definition

Although hemoglobin levels decrease normally following the first 24 hours after delivery secondary to hemodynamic changes - fluid and blood loss; the levels return to normal non-pregnant levels within few days. The World Health Organization (WHO) defines anemia as Hemoglobin levels less than 12 g/dL in women and less than 13 g/dL in men. The normal hemoglobin level varies based on ethnicity and physiological status and definition can be revised accordingly [13]. WHO further defines anaemia in pregnancy as haemoglobin levels <11g/dL, irrespective of gestational age in developed countries and <10g/dl in the developing world. According to Centers of Disease Control and Prevention, anemia during pregnancy is defined as Hb <11 g/dL in the first and third trimester and Hb <10.5g/dL in the second trimester [2, 14]. As per another study, the recommended cut off for anaemia

is haemoglobin <11 g/dL at 1 week postpartum and <12g/dL at 8 weeks postpartum [15]. Haemoglobin levels between 11-11.9 g/dl is categorised as mild anaemia and those between 8-10.9 g/dL and <8g/dL is categorised as moderate and severe anemia, respectively [2].

Epidemiology-

Anemia is relatively common among women of reproductive age affecting around 30% of women aged 15-49 years and 37% pregnant women [1]. In healthy women, prevalence of postpartum anemia (hemoglobin <11g/dL) within 1 week after normal delivery was 14% among those with history of iron supplementation and 24% among those without iron supplement intake. Among European women, the prevalence of anemia 2 days after delivery was around 50%. The prevalence of postpartum anemia is higher in developing countries ranging from 50-80% as compared to 10-30% in developed countries [15]. Maternal mortality during the postpartum period is also relatively high in developing countries. Prenatal anemia increases the risk of postpartum haemorrhage with inadvertent risk of maternal mortality [16]. Studies also suggest a correlation between anemia and maternal mortality and an increase in 10% g/l maternal haemoglobin is associated with 29% reduction in maternal mortality [17]

Risk factors [18, 19]

- Regional variation in food preferences
- Infections
- Healthcare services and accessibility and lower antenatal visits during pregnancy

- Lack of iron-folate supplementation during pregnancy
- Educational status: women with formal education have lower risk
- Cesarean birth
- Antenatal hemoglobin levels <11g/dL
- Postpartum hemorrhage
- Instrumental delivery (vaccum/forceps)
- Anemia at 36 week of gestation
- Younger maternal age

Consequences of postpartum anemia

Postpartum anemia can result in long term adverse impact on mothers and newborns. It raises the risk of complications, maternal morbidity and mortality. Women with postpartum anemia experience emotional instability, tiredness, increased risk of infection resulting in reduced quality of life [12]. Other negative effects of postpartum anemia include [19]:

- Dyspnea
- Palpitations
- Increased risk of mastitis and urinary tract infections
- Delayed wound healing
- Fatigue
- Altered cognitive function
- Emotional instability
- Postpartum depression
- Reduced quality of life
- Reduced milk supply

These changes further negatively have an impact on breastfeeding, decreased capacity in caregiving and loss of attachment between mother and newborn. It results in lower birth weight and limited iron stores in the newborn which will impact the development, immunity and growth. These neonates are thus exposed to infections, resulting in poor growth and development [18, 20].

Diagnosis

Postpartum anemia occurs primarily due to peripartum blood loss and inadequate intake of iron and folic acid supplements during pregnancy. In order to diagnose postpartum anemia, the hemoglobin levels must be evaluated within 24-48 hours after delivery among women with >500 mL of blood loss during this period, and in those with untreated anemia during antenatal period or those having symptoms of anemia in postnatal period. The criteria for diagnosis of postpartum anemia are:

- Hemoglobin level <12 g/dL is considered postpartum anemia
- Hemoglobin level ≤10 g/dL indicates clinically significant anemia
- Hemoglobin level between 9-10 g/L is considered moderate-to-severe anemia
- Hemoglobin level ≤9 g/dL is categorized as severe anemia.

Evaluation of hemoglobin level during postpartum should be made based on amount of blood loss and puerperal status. Additionally, the hemoglobin levels during pregnancy should also be considered. The blood levels should be evaluated within 24-48 hours once the plasma volume levels are stabilized. Evaluation of serum ferritin level during immediate postpartum level is not recommended since this is an acute phase reactant and could be normal or elevated during immediate postpartum up to 6

weeks. Assessment of ferritin levels are essential to avoid hemochromatosis secondary to parenteral oral therapy [21, 22].

Management

Prevention of postpartum anemia is vital for wellbeing of both mother and child. Following delivery, the maternal hemoglobin status eventually returns to pre pregnancy levels with contraction of expanded red cell mass and return of iron stores. According to WHO, all mothers during initial 3 months of postpartum are recommended to take oral iron supplements with or without folic acid [12]. WHO also advises on taking weekly supplements of iron (60 mg) and folic acid (2.8 mg) for women in reproductive age and increased folic acid among women who are expecting [23].

Management of anemia is based on severity of anemia. Treatment options include oral iron administration, intravenous iron therapy, erythropoietin therapy, and blood transfusion The following algorithm is generally followed for treatment of anemia are described in figure 1.

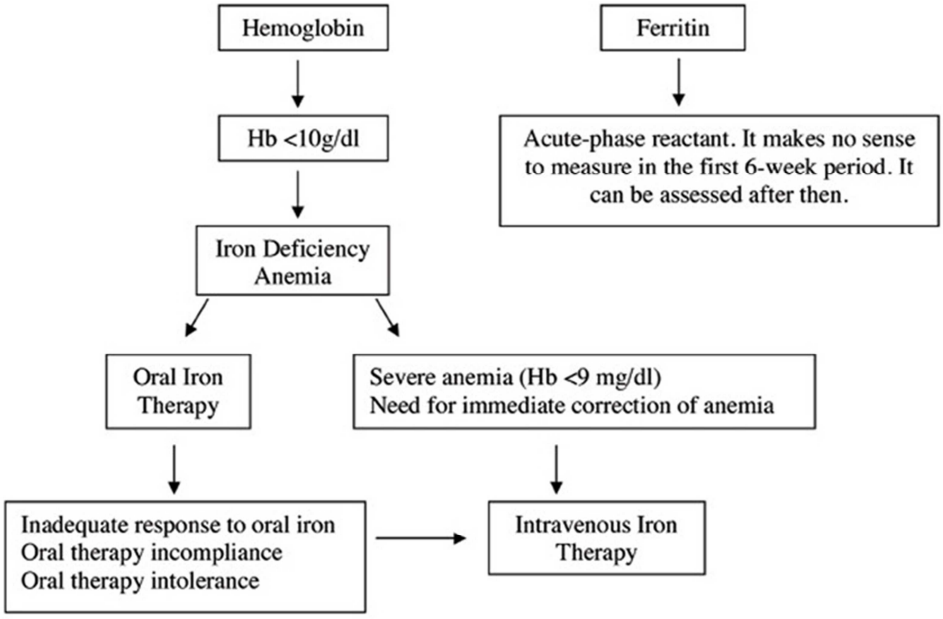


Figure 1: Diagnosis and management of postpartum anemia [21]

The general recommendations for management of anemia are as follows [21, 22, 24]:

- Among women with Hemoglobin level ≤10 g/dL, hemodynamically stable/ asymptomatic or mildly symptomatic: Oral iron 100-200 mg/day up to 3 months. Complete blood count and serum ferritin level should be tested at the end of therapy.
- In women who cannot tolerate oral iron therapy, treatment should be switched to intravenous iron therapy.
- Among women with moderate to severe or severe anemia and those who do not respond to oral iron therapy, IV iron therapy is recommended.
- Among women with significant blood loss and hemoglobin level ≤ 7 g/dL, immediate blood transfusion is recommended.
- The therapeutic iron dose for the above treatment should be determined based on individual patient characteristics.

- Women should be regularly monitored and hemoglobin, blood count and serum ferritin should be evaluated.
- Once adequate hemoglobin levels are reached, IV iron should be switched back to oral iron maintenance therapy.

Oral iron therapy

Oral iron therapy is the primary choice for the treatment of anemia. Due to its low cost and ease of use it is recommended for treatment of mild or moderate anemia without any complications. However, since iron cannot be absorbed in the gut in high quantity, longer duration of therapy is necessary to get adequate hemoglobin levels. Folate is often given in combination with oral iron. It is also associated with gastrointestinal side effects including nausea and constipation. Further, oral iron therapy is associated with intolerance, decreased patient compliance, nonresponse to treatment and slow onset of response resulting in prolonged treatment duration. [25, 26].

Intramuscular (IM) iron therapy

Iron preparations which can be administered intramuscularly include iron sorbitol, high and low molecular weight iron dextran. Compared to IV the iron absorption is relatively slow and cannot be given in women with lower muscle mass. Moreover, the safety and toxicity is similar between IV and IM forms. Disadvantages of IM route include, pain, risk of skin stain, sterile abscess and gluteal sarcoma [21, 27].

Intravenous iron therapy

Previous studies have shown that IV iron therapy is superior to oral iron therapy, it is associated with rapid increase in Hemoglobin levels, improvement in fatigue and reduced GI side effects [28, 29]. Response from IV therapy is faster. Although IV preparations are more expensive than oral preparations, the overall cost of IV and long term oral therapy are similar suggesting benefits of short term IV treatment. However, parenteral therapy can be associated with erythema, pain at the injection site, allergic reactions, vascular collapse and shock [30].

Among the various available IV iron forms, Ferric Carboxymaltose is the recommended choice followed by Iron sucrose. Based on results of Randomized controlled trials (RCT), IV ferric carboxymaltose showed equal or superior efficacy in terms of increasing hemoglobin levels and maximum hemoglobin value and better safety as compared to oral iron therapy [31]. Additionally, it has lower rates of hypersensitivity reactions as compared to other iron products. Dosage is 500 mg/10mL vial which can be administered as rapid infusion to up to 1000 mg per infusion and repeated at weekly interval. Iron sucrose is the next best choice of treatment, is available at a dose of 100 mg/5mL vial and can be administered at 200 mg per rapid infusion. Compared to IV Iron sucrose, IV ferric carboxymaltose showed superior efficacy and similar safety profile. Other advantages include patient comfort, reduced costs [32, 33].

Recombinant erythropoietin (rhEPO)

Erythropoetin is produced in the kidneys secondary to lower blood oxgen levels. It stimulates the erythropoiesis. Recombinant erythropoietin (rhEPO) can be

administered in women with severe anemia <7 g/dL along with parenteral Ferric carboxymaltose. rhEPO should always be given in combination with a parenteral therapy to avoid ineffective erythropoiesis. It is associated with adverse events including flu-like symptoms, sore throat, cough, muscle pain, fatigue, headache and tiredness, hypertension, seizures and thromboembolic complications. However, there are limited studies evaluating the efficacy of this combination. And due to increased adverse events the use is restricted in postpartum anemia [34, 35].

Blood transfusion

In women with hemoglobin levels less than7 g/dL and depending on clinical symptoms, allogeneic blood transfusion should be performed. It can be life-saving when there is severe bleeding during postpartum [36]. It is not usually recommended in patients with mild or moderate bleeding and limited only among women with >500 mL blood loss. Transfusion of one unit of red blood cell (RBC) increases hemoglobin by 1 g/ dL in hemodynamically stable patients. However, care must be taken to avoid transmission of infections, circulatory overload, immunologic reactions, anaphylaxis and acute hemolysis post transfusion [37, 38].

Related studies

Bhandal N, et al (2006) [6] conducted a single center prospective RCT in the United Kingdom to compare the effectiveness of oral vs IV ferrous sucrose on postpartum iron deficiency anemia. A total of 44 women haemoglobin <9 g/dl and ferritin <15 µg/l within 48 hours of delivery were randomised to either oral ferrous sulphate 200 mg BID for 6 weeks or IV ferrous sucrose 200 mg on day 2 and 4. Compared to baseline, the mean Hemoglobin levels increased in IV group on day 5 (7.3 vs 9.9),

whereas no difference was noted in oral group. On days 5 and 14, the Hemoglobin levels were significantly higher in the IV group than oral group ($p<0.01$). Similar an increase in ferritin levels were also noted in IV group than oral group ($p<0.01$). The authors concluded that the IV iron sucrose results in rapid increase in the haemoglobin and ferritin levels when compared to oral iron.

Van Wyck DB, et al (2007) [39] conducted a RCT to compare the efficacy of IV ferric carboxymaltose (less than or equal to 1,000 mg over 15 minutes, repeated weekly to achieve a total calculated replacement dose) with oral ferrous sulphate 325 mg orally TID for 6 weeks. in anemic postpartum women. A total of 174 women with hemoglobin ≤10 g/dL received IV iron therapy and 178 received oral therapy. Increase in Hb ≥2.0 g/dL was much rapid in IV group as compared to oral group (7 vs 14 days, $p<0.001$). Rate of increase of Hb ≥2.0 g/dL at any time was similar between groups (96% vs 94%, $p=0.443$), whereas the rate of increase in Hb ≥3.0 g/dL (86% vs 60%, $p<0.001$) and Hb ≥12.0 g/dL (91% vs 69%, $p<0.001$) at any time was also higher in IV group than oral group. Serious adverse drug reactions were not reported. The authors concluded that large dose of IV ferric carboxymaltose administration is effective for the treatment of postpartum anemia in comparison to oral ferrous sulphate.

Westad S, et al (2008) [25] conducted a multicenter open label RCT in Norway to evaluate the effectiveness of IV ferrous sucrose vs oral ferrous sulphate on hematological parameters and quality of life in women with postpartum anemia. A total of 128 postpartum women were included in the study, of which 59 women received 600 mg IV iron sucrose followed by 200 mg iron sulphate OD after week 5 and 70 women received 200 mg iron sulphate OD. Following 4 week of therapy, the

mean haemoglobin levels between groups were comparable (11.9 vs. 12.3 g/100ml, p=0.89) whereas the mean serum ferritin was significantly higher in the IV group vs oral group (13.7 vs. 4.2 microg/L; p<0.001). Hematological parameters were similar in both groups at week 8 and 12. The SF-36 score were similar between groups. A significant improvement in the total fatigue score was noted in the IV group than oral group at weeks 4, 8 and 12. The authors concluded that IV iron therapy is rapid in replenishing iron stores and has favourable safety.

Harsha Kumar H, et al (2014) [40] conducted a retrospective record-based study in Southern part of India to describe the clinic-social factors associated with anemia in postpartum period. All women with haemoglobin level less than 11 g/dl in the postpartum period indicative of postpartum anemia were included in the study. Pretested semi-structured proforma was used to collect information about various social and clinical factors and multivariate analysis was carried out. Overall, 988 women were included in the study. Among them 82 (83.3%) patients had mild anemia and 165 (17.7%) patients had moderate anemia. Factors such as mothers with no educational background, ≥3 parity, short inter-pregnancy interval of <3 years, presence of anemia during pregnancy, delayed diagnosis of anemia in pregnancy and poor compliance to treatment were associated with postpartum anemia. The authors concluded that majority of women during postpartum period will have anemia. Further research is warranted to evaluate the cause of persistence of anemia in postpartum period.

Perelló MF, et al (2014) [41] conducted a randomized, double blind, placebo controlled, parallel group trial to evaluate the effectiveness of intravenous iron versus placebo added to standard oral iron therapy in the treatment of severe postpartum

anaemia among 72 women. Women treated with oral ferrous sulphate (525 mg, 2 tablets) were randomised to additionally receive either intravenous ferrous sucrose (200 mg daily x 2 days) or intravenous placebo. Clinical and laboratory data were collected at 1, 2, and 6 weeks. Haemoglobin and haematocrit values were comparable between groups during the trial. At week 6, mean ± standard deviation (SD) haemoglobin levels in placebo vs intravenous groups was 12.2 ± 1.0 vs 12.2 ± 0.9 g/dl, mean difference(95% CI) = -0.03 (95% CI -0.6 to 0.6). Additionally, clinical symptoms including anemia, psychological stress and adverse events were comparable between groups. The authors concluded that addition of intravenous iron to oral therapy did not show remarkable benefits to oral iron therapy alone.

Markova V, et al (2015) [42] conducted a systematic review to evaluate the efficacy and harms of the available treatment modalities for women with postpartum iron deficiency anemia. A total of 22 RCTs including 2858 women were included in the analysis. Comparison of IV versus oral iron were evaluated in only 10 studies. Fatigue, arrhythmia and allergic reactions were the adverse events reported. Gastrointestinal side effects were less in IV treated patients. Cardiomyopathy related mortality was noted in one women with a risk ratio of 2.95. The authors concluded that the body of evidence available from previously conducted RCTs is low. Hence, it remains unclear whether oral or IV iron therapy is effective in alleviating symptoms of postpartum anemia.

Bhagwan D, et al (2016) [43] conducted a community based cross-sectional study among postpartum women to estimate the prevalence of anemia. With stratified random sampling, 401 respondents were selected from rural health centres. The prevalence of postpartum anemia (haemoglobin <12 g/dL) was 26.5%, none of the

cases had severe anemia. Postpartum anemia was common among women aged <20 years and those with <2 years of inter-pregnancy interval. Odds of postpartum anemia increased 11.2% among patients who were illiterate. The authors concluded lower prevalence rates of anemia in the study and suggested sustained further efforts to decrease incidence of anemia and promote health and well-being of women.

El Khouly NI, et al (2017) [44] conducted a single center, randomized, controlled study **among 352 women with postpartum anemia (hemoglobin ≤9 g/dL and serum ferritin <15 µg/l) to** evaluate the efficacy, safety and tolerability of IV ferrous sucrose, compared to oral ferrous sulphate. Primary outcome measures were increase in hemoglobin and serum ferritin. Compared to baseline, the mean hemoglobin level increased in IV ferrous sucrose group (8.5 vs 9.4 g/dL) by day 5. Compared to oral ferrous sulphate group, patients treated with IV ferrous sucrose had significantly higher levels of hemoglobin on day 14 and day 40 ($p<0.01$). Similar increase in serum ferritin levels were also noted in IV group as compared to oral iron therapy ($p<0.001$). The authors concluded that IV route of administration rapidly increases the hemoglobin levels as compared to oral route thereby replenishing the iron stores rapidly.

Medina Garrido C, et al (2018) [45] conducted a hospital based study to evaluate the prevalence of postpartum anemia and to determine its associated risk factors. A total of 1415 women were evaluated for postpartum anemia. Among these 29% had Hemoglobin level <10 g/dl suggestive of anemia. As per study, the potential risk factors for anemia included South American origin, lacerations in birth canal, caesarean delivery and episiotomy. However, individually none of these risk factors were independent predictors of postpartum anemia with sensitivity of <30%. The

authors concluded that the prevalence of this preventable or treatable condition, postpartum anemia is high. Appropriate and early intervention is important to improve the physical and psychological well being of these women.

Rubio-Álvarez A, et al (2018) [46] conducted a retrospective observational and analytical study to determine the incidence and perinatal risk factors associated with postnatal anemia among women who underwent vaginal birth. Based on hemoglobin cut off of <9g/dl and <11 g/dl, 7.1% and 45% women had postpartum anemia. Risk factors for severe anemia of hemoglobin level <9g/dL included episiotomy (OR[95% CI]: 3.2 [2.1-4.8]), first stage of labour >9h (OR[95% CI]: 2.5[1.6-3.9]), primiparity (OR[95% CI]: 2.5[1.6-3.9]) and previous caesarean section (OR[95% CI]: 2.4 [1.5-3.9]). Additionally, second stage of labour, instrumental birth, tearing greater than first degree, absence of active management and increased birth weight of newborns were considered general risk factors for anemia. The authors concluded an increased incidence of postpartum anemia and active management of third stage labour with management of risk factors are necessary to lower the incidence rate.

Selvaraj R, et al (2019) [47] conducted a community based cross sectional study at field area of 2 primary health centres in Puducherry to describe the prevalence of postpartum anemia. Based on random sampling, 227 postnatal women were selected and were followed by visiting the houses for 4 weeks after part partum. Overall mean Hemoglobin levels were 11 g%. The prevalence of anemia among postnatal women was 76% (mild, 26%; moderate, 50% and severe, 0.4%). One fourth of women with normal haemoglobin levels in the 3rd trimester developed postpartum anemia. Difference in the mean haemoglobin level during postpartum vs third trimester was significant (10.95 vs 10.69 gm%, t = 3.4, df 226, P = 0.001). Additionally, birth order

of atleast 2 was associated with postpartum anemia (OR 2.2, 95% CI: 1.1-4.4). The authors concluded that prevalence of postpartum anemia is relatively high which necessitates routine haemoglobin evaluation followed by adequate treatment.

Sultan P, et al (2019) [48] conducted a systematic review of RCTs comparing oral vs IV therapy in treatment of postpartum anemia. The primary outcome of interest was haemoglobin concentration at week 6 after delivery. A total of 15 RCTs met the inclusion criteria, of which 4 studies reported the primary outcome of interest. Haemoglobin concentrations at week 6 after delivery were significantly higher in the IV iron therapy group than oral iron therapy with a mean difference (95% CI) of 0.9(0.4-1.3) g/dl; p=0.0003. Similarly, the haemoglobin concentrations and ferritin concentrations were higher in women receiving IV iron than oral IV within 4 weeks after delivery. IV iron therapy was associated with increased odds of skin flushing (OR: 6.95), decreased odds of constipation (OR: 0.08) and dyspepsia (0.07). The frequency of anaphylaxis after IV therapy was 0.6%. The authors concluded that IV iron therapy is beneficial in achieving desired haemoglobin levels at a faster rate with reasonable safety profile and can be considered a viable option for treatment of postpartum anemia.

Vanobberghen F, et al (2021) [49] conducted an open label parallel group RCT at Tanzania to evaluate the efficacy and safety of IV ferric carboxymaltose versus oral iron substitution among postpartum women with iron deficiency anemia. Administration of IV ferric carboxymaltose dose was based on body weight. Ferrous sulphate tablets were to be taken for 3 months after haemoglobin normalisation. Haemoglobin normalisation (>115 g/L) at 6 weeks was the primary outcome. In the study, a total of 230 women fulfilling the eligibility criteria were included. At week 6,

80% vs 51% participants in the IV iron vs oral iron group had normal haemoglobin levels (OR[95% CI]: 4.7[2.3-9.3]). Overall, mild to moderate infusion related reactions and 5 serious adverse events unrelated to study medication were reported. The authors concluded that IV iron therapy is safe and had better Hemoglobin response as compared to oral iron therapy.

Yefet E, et al (2021) [50] conducted a RCT from February 2015 to June 2020 to compare the efficacy intravenous (IV) iron sucrose alone vs combination of IV iron sucrose and oral iron bisglycinate supplementation in treating moderate to severe postpartum anemia. A total of 158 women with postpartum hemoglobin level of ≤9.5 g/dL, treated with 500 mg IV iron sucrose after an anemia workup, which ruled out other causes for anemia were included in the study. They were randomly assigned to receive either 60 mg of oral iron bisglycinate for 45 days (n=63) or no further iron supplementation (n=44). The primary outcome was hemoglobin level at 6 weeks after delivery. Secondary outcomes were iron storage parameters and quality of life. Baseline clinical characteristics were similar between groups. At week 6, compared to IV iron only, the postpartum Hb levels were 0.4 g/dL higher in the IV and oral iron group (12.4 g/dL vs 12.0 g/dL, respectively; P=0.03). Frequency of patients with anemia, iron storage and health quality was similar between groups. Adverse events to oral treatment was noted in 29% of patients. Compliance and satisfaction from treatment was similar between groups. The authors concluded that addition of oral iron supplement do not add additional benefit to management of postpartum anemia.

Mremi A, et al (2022) [51] conducted an institutional based cross sectional study to determine the prevalence of post-partum anemia and associated factors among 424 women attending public primary health care facilities. Mean age of participants was

27.8 years, 55% had primary education and 47% were homemakers. Overall prevalence of postpartum anemia (hemoglobin level <11 g/dL) was 34%. Among these, 24% and 10% were positive for malaria parasite and stool infections. Vaginal delivery and low parity reduced the risk of anemia. Absence of marital partner (crude OR: 18) and < 2 years of inter pregnancy interval (crude OR: 10) increased the risk of anemia compared to reference group. The authors concluded that health education and promotion programs are essential to create awareness about postpartum anemia among pregnant women.

Saha S, et al (2022) [52] conducted a descriptive cross-sectional study to determine the prevalence of anemia and utilization of antenatal and postnatal services and to evaluate the factors related to anemia among pregnant and lactating women in Gujarat. A total of 1185 eligible participants were included. Mean age of pregnant and lactating women was 25.0 and 25.5 years, respectively. Prevalence of anemia in pregnant and lactating women was 73% and 26%, respectively. Study reported limited utilization of nutrition and health services. Factors influencing anemia in pregnant women included age, birth spacing and education ($p<0.05$, for all). Parity, birth spacing, religion and receipt of take-home ration ($p<0.05$ for all) were significantly associated with postpartum anemia. The study concluded higher prevalence of anemia among pregnant and lactating women with suboptimal usage of services. Nutritional education and counselling during pregnancy may help improve health among these population.

Saha S, et al (2022) [53] conducted a cross sectional study to estimate the prevalence of non-iron deficiency anemia among 258 mothers across 27 primary health centers in Gujarat. Patient demographics, obstetric history, medical history and laboratory

parameters were recorded. Anemia was based on blood hemoglobin and ferritin levels. Overall 66% mothers (antenatal, 90% and postnatal, 57%) had anemia based on hemoglobin levels. Among these, 62% had normal ferritin levels indicating non-iron deficiency anemia. Among antenatal women, prevalence of non-iron deficiency anemia increased with increasing trimester as opposed to iron deficiency anemia which decreased with iron supplementation. The authors concluded that anemia in pregnancy and postpartum could also result from reasons other than depleted iron. Therefore, policy implications including anemia control programs should address identification and appropriate treatment of non-iron deficiency anemia among antenatal and postnatal women.

Agmassie GA, et al (2023) [54] conducted an institution based cross sectional study in Ethiopia from October to November 2020 to evaluate the magnitude and associated factors of immediate post-partum anemia. Using systematic random sampling, 467 participants were included in the study. Binary logistic regressions were carried out to identify predictors of immediate post-partum anemia. Overall magnitude of immediate postpartum anemia was 21.6%. Factors such as no antenatal follow up (adjusted OR [AOR]: 2.9), assisted instrumental delivery (AOR: 2.7), mid-upper arm circumferences <23cm (AOR: 5.8), antepartum hemorrhage (AOR: 4.5), were significantly associated with postpartum anemia. The authors concluded that immediate postpartum anemia is a moderate public health problem in Ethiopia. A thorough antenatal care follow up along with safe delivery and management of malnourished pregnant women by giving adequate care are few aspects which could reduce the incidence of postpartum anemia.

Bombač Tavčar L, et al (2024) [55] conducted a single-center, open-label RCT to compare different treatment for postpartum anemia. A total of 300 women with haemoglobin <10 g/dL within 48 hours of postpartum were randomised to IV ferric carboxymaltose, IV ferric derisomaltose, or oral ferrous sulfate. Primary outcome of interest was maternal fatigue at week 6. AT week 6, among ferric carboxymaltose, ferric derisomaltose, and ferrous sulfate groups, the median fatigue score was comparable (38 vs 34 vs 36; p=0.26). Haemoglobin levels (135 vs. 134 vs. 131 g/L; $p = 0.008$), ferritin levels (273 vs. 187 vs. 24 µg/L; $p < 0.001$) and transferrin saturation (34 vs. 30 vs. 24%; $p < 0.001$) were lower in oral group than those receiving IV therapy groups. The authors concluded despite the improved laboratory parameters among IV group, that fatigue scores were comparable between oral and IV therapies.

Caljé E, et al (2024) [56] conducted a systematic review and meta-analysis of randomized trials comparing IV-iron and transfusion with each other and with oral iron, no treatment, and placebo among patients with post-partum anemia. A total of 20 studies with 4196 participants were assessed. Overall, 1771 received oral iron therapy, 330 received blood transfusion, and 261 did not receive any intervention. Primary outcome, fatigue was reported by 1251 patients. Comparison of efficacy of IV iron vs oral iron was carried out in 15 studies. Compared to oral iron, IV iron therapy was associated with significant reduction of fatigue (standardized mean difference - 0.40, 95% CI - 0.62, - 0.18, $I^2 = 0\%$). Additionally, IV iron was favourable in terms of achieving haemoglobin, ferritin levels and reduction in adverse events. The quality of evidence of results was low-moderate. The authors concluded that comparison of different treatement modalities in treating postpartum anemia is limited, further research is warranted.

Eshete NA, et al (2024) [57] conducted an institution based cross sectional study in Ethiopia from June-Sep 2022 to evaluate the incidence and associated factors of immediate postpartum anemia. Interviewer assisted questions were used for data collection. Of the total 207 participants included in the study, 41.4% patients had immediate postpartum anemia. Factors influencing the incidence of postpartum anemia were postpartum haemorrhage (AOR [95% CI]: 4.8 [2.4-9.3]), inadequate intake of iron and folic acid supplements (AOR [95% CI]: 6.2[2.7- 14.2]), prolonged second stage labour (AOR [95% CI]: 2.5[1.2- 5.4] and mid arm circumference <23cm (AOR [95% CI]: 2.0[1.1-3.7]). Authors concluded that immediate postpartum anemia is a rising problem in health facilities necessitating close monitoring and immediate intervention.

MATERIAL AND METHODS

Source of Data:

"The present study was conducted among pregnant women delivering at atleast 28 weeks of pregnancy or more, in the labour room at K.L.E's Dr. Prabhakar Kore Hospital and Medical Research Centre, Belagavi for a period of 1 year."

Study design:

Prospective, observational and follow up study.

Study period:

One year from February 2023 – January 2024

Place of Study:

"Department of Obstetrics and Gynecology at KLEs Dr. Prabhakar Kore Charitable Hospital and Medical Research Centre, Belagavi"

Sample size:

To calculate the incidence of postpartum anemia, the overall women who underwent delivery at the institution during the study period of 1 year was used.

A prevalence of 50% - 60% anemia in pregnant women was reported by Indian studies. Considering 50% prevalence with 5% sample error, the following formula was used to calculate sample size.

$$N = \frac{Z\alpha^2 P (1-P)}{d^2}$$

Where,

Zα2= Standard normal variate 1.96

P = Expected proportion from a given population (50%)

d = Absolute error (5%)

By imputing the values in the above formula, minimum sample size of 196 participants was obtained.

A sample size of **200** participants were selected and post delivery hemoglobin level and interventions done were noted and these participants were followed up 3 weeks later to document the improvement in hemoglobin.

Selection Criteria

Inclusion Criteria

- Women aged 18 years or more
- Women undergoing vaginal deliveries at a gestational age of at least 28 weeks.
- Women undergoing caesarean section at a gestational age of at least 28 weeks.
- Women willing to follow up after 3 weeks

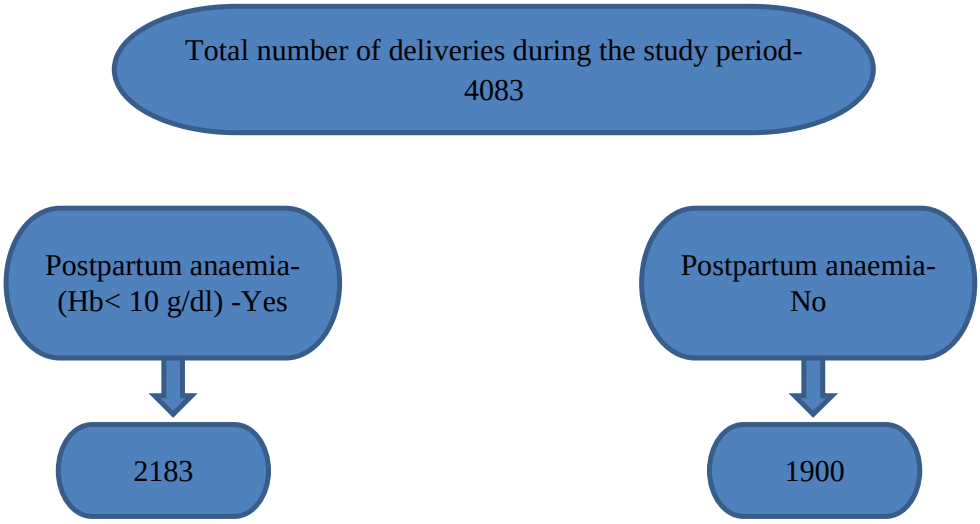
Exclusion criteria

- Women less than 18 years of age
- Women diagnosed with anaemia antenatally
- Women not willing to give consent for follow up

Methodology

All pregnant women admitted to KLEs Dr Prabhakar Kore Charitable Hospital, Belagavi with at least 28 week of pregnancy willing to participate in the study by signing the informed consent were included in the study. A detailed information on demographics and patient history, gestational details and delivery details were recorded on a case report form designed specifically for the study. Hemoglobin levels after 24 hours post delivery was noted in all women to evaluate postpartum anemia. Hemoglobin level <10 g/dl was considered as postpartum anemia. Incidence of postpartum anemia was calculated by including the total number of deliveries during the study period. Data of various interventions done in these anaemic women was also collected. 200 women who received parenteral mode of intervention were then followed up after 3 weeks of intervention and haemoglobin levels were assessed to document improvement. The efficacy of different interventions for treatment of anemia were evaluated.

CONSORT DIAGRAM:



Total number of patients screened to document rise in hemoglobin at follow up **– 225**

Total number of recruited patients- **200**

Lost to follow up- **25**

Data collection

The following data were collected and entered in a case history proforma

- Age and weight
- Socioeconomic status
- Time from admission to delivery
- Parity status
- Mode of delivery
- Period of gestation
- Hemoglobin levels 24 hour after delivery and at follow up and iron deficit
- Type of intervention for anemia treatment
- Safety including adverse events

Ethical considerations

Institutional ethical clearance was obtained prior to initiation of the study. The details of the study were explained to the patients and an informed consent was obtained from all patients.

Data handling

The collected data were entered in Microsoft excel and the related records were stored safety with no access to other study personnel.

Statistical analysis

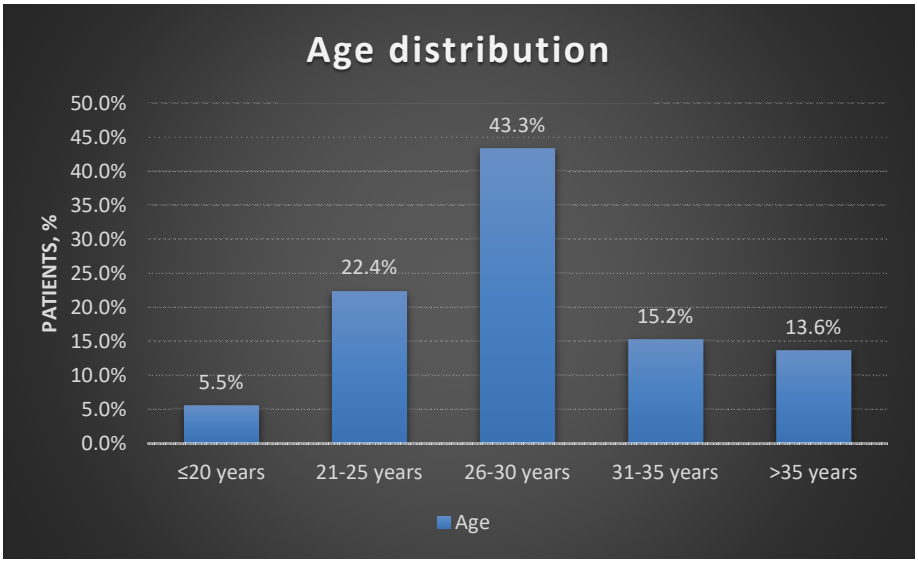
All data was entered in the Microsoft excel sheet and then imported to SPSS version 22 software for statistical analysis. Categorical variables were summarized as frequency and percentages. Continuous variables were presented as Mean, standard deviation median and range. Improvement in hemoglobin levels at follow up as compared to postpartum day 1 was done using paired t test. Comparison of Hemoglobin improvement among various interventions was done using t test and post hoc tukey test. P-value less than or equal to 0.05 indicates statistical significance.

RESULTS:

A total of 4083 deliveries during the study period of 1 year have been included and the following observations were noted. Most of the patients belonged to the age group of 26-30 years (n=1768, 43.3%), followed by 21-25 years (n=916, 22.4%). The descriptive statistics and age distribution are presented in Table 1 and Graph 1.

Table 1: Distribution of patients based on age

Age group	Frequency	Percentage
18-20 years	26	5.5%
21-25 years	916	22.4%
26-30 years	1768	43.3%
31-35 years	619	15.2%
>35 years	554	13.6%
Total	**4083**	**100.0%**

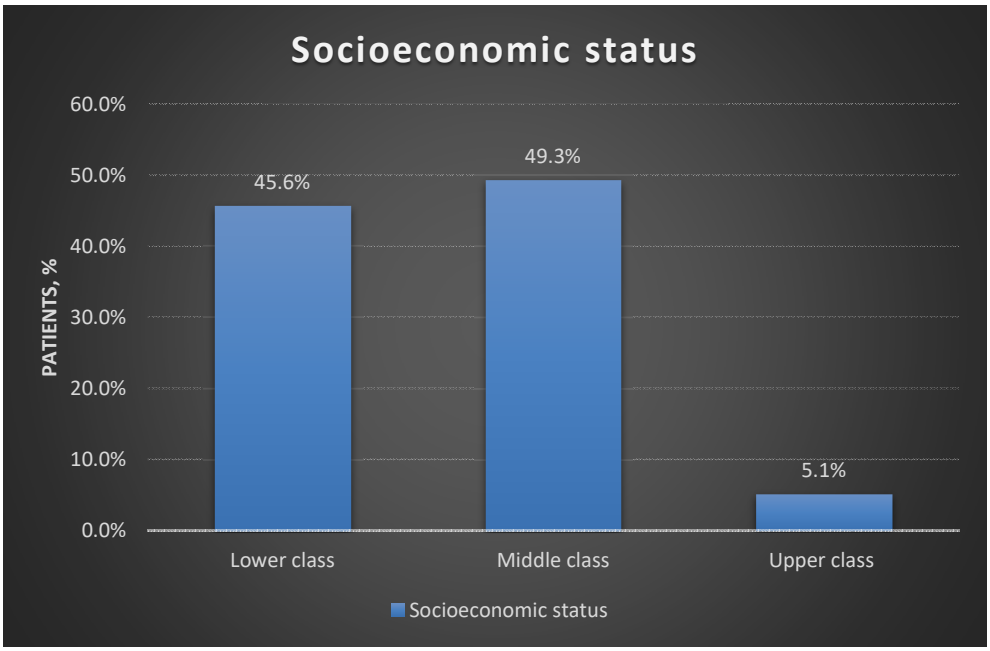


Graph 1: Bar diagram showing age distribution of study population

Overall, 2012 (49.3%) patients belonged to a middle class, 1861 (45.6%) patients belonged lower class and 210 (5.1%) patients belonged to upper class. The distribution of patients based on socioeconomic status is shown in Table 2 and Graph 2.

Table 2: Distribution of patients based on socioeconomic status

Socioeconomic status	Frequency	Percentage
Lower class	1861	45.6%
Middle class	2012	49.3%
Upper class	210	5.1%
Total	**4083**	**100.0%**

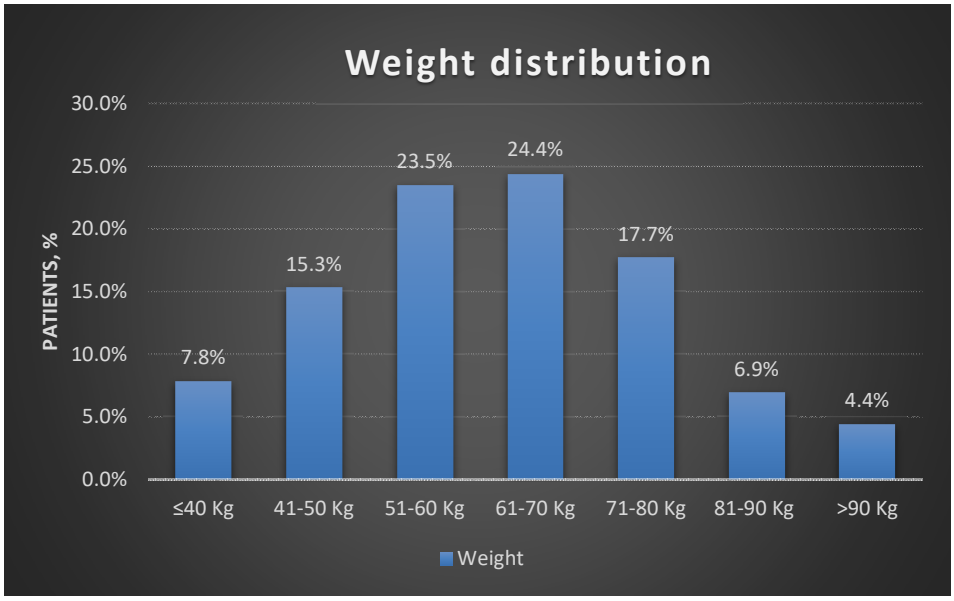


Graph 2: Bar diagram showing socioeconomic status of study population

Most patients weighed between 61-70 Kg (n=995, 24.4%), followed by 51-60 Kg (n=960, 23.5%) and 71-80 Kg (n=724, 17.7%). Descriptive statistics and patient distribution based on weight is shown is Table 3 and Graph 3.

Table 3: Distribution of patients based on weight

Body weight	Frequency	Percentage
≤40 Kg	318	7.8%
41-50 Kg	624	15.3%
51-60 Kg	960	23.5%
61-70 Kg	995	24.4%
71-80 Kg	724	17.7%
81-90 Kg	282	6.9%
>90 Kg	180	4.4%
Total	**4083**	**100.0%**

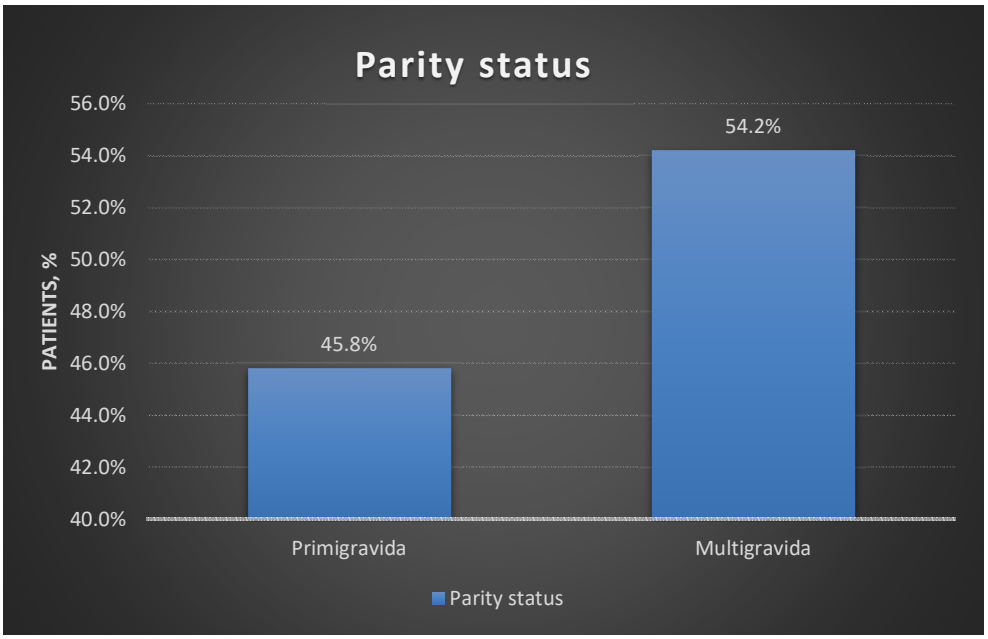


Graph 3: Bar diagram showing weight distribution of study population

Distribution of patients based on parity status is summarized in Table 4 and Graph 4. Overall, 1869 (45.8%) patients were primigravida and 2214 (54.2%) were multigravida.

Table 4: Distribution of patients based on parity status

Parity status	Frequency	Percentage
Primigravida	1869	45.8%
Multigravida	2214	54.2%
Total	**4083**	**100.0%**

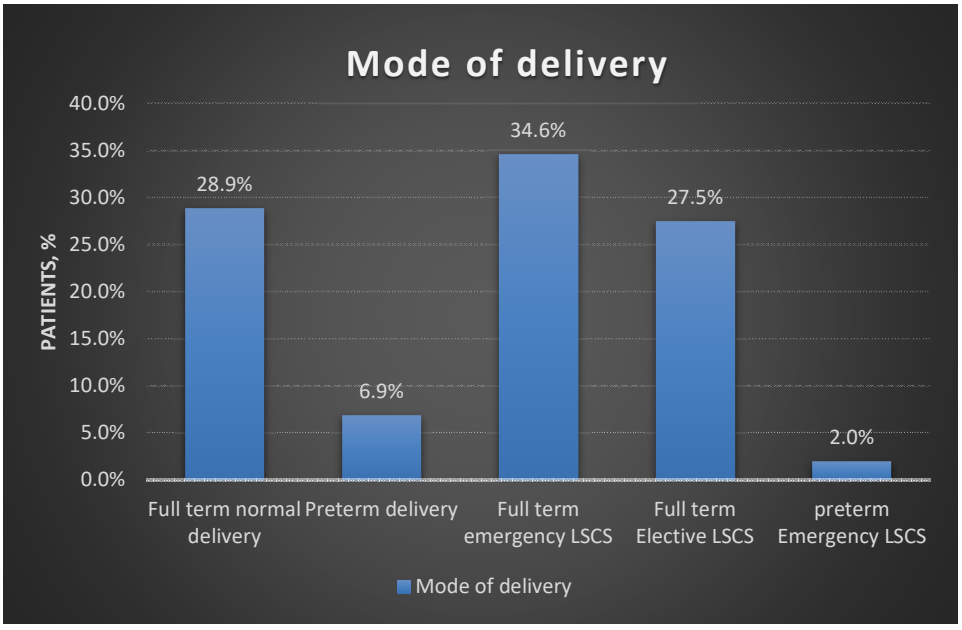


Graph 4: Bar diagram showing parity status among study population

In this study, patients (n=1413, 34.6%) underwent full term emergency lower segment caesarean section (LSCS), 1182 (28.9%) patients underwent normal delivery, 1123 (27.5%) patients underwent full term elective LSCS. Modes of delivery in this study population are summarized in Table 5 and Graph 5.

Table 5: Distribution of patients based mode of delivery

Mode of delivery	Frequency	Percentage
Full term normal delivery	1182	28.9%
Preterm delivery	282	6.9%
Full term emergency LSCS	1413	34.6%
Full term Elective LSCS	1123	27.5%
preterm Emergency LSCS	83	2.0%
Total	**4083**	**100.0%**

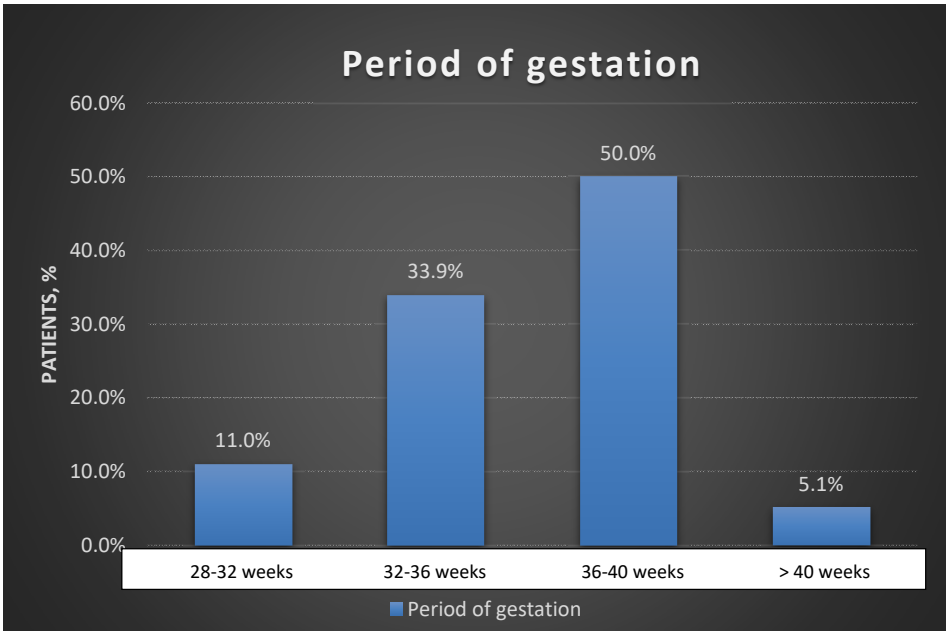


Graph 5: Bar diagram showing mode of delivery

Overall, 2040 (50.0%) patients were in gestational week 36-40 weeks followed by 32-36 weeks (n=1384, 33.9%). Details of period of gestation are shown in Table 6 and Graph 6.

Table 6. Distribution of patients based on period of gestation

Period of gestation	Frequency	Percentage
28-32 weeks	451	11.0%
32-36 weeks	1384	33.9%
36-40 weeks	2040	50.0%
>40 weeks	208	5.1%
Total	**4083**	**100.0%**

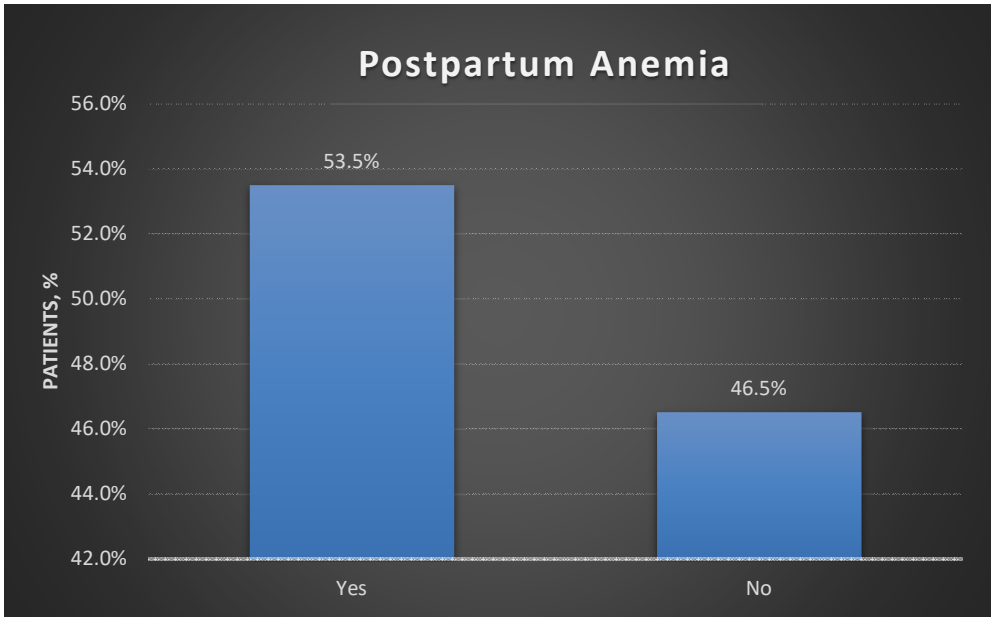


Graph 6: Bar diagram showing distribution based on period of gestation

Of the 4083 patients, 2183 (53.5%) patients had hemoglobin level < 10 g/dL suggestive of postpartum anemia, whereas 1900 (46.5%) patients had normal levels of hemoglobin (>10 g/dL). The incidence of postpartum anemia is shown in Table 7 and Graph 7.

Table 7: Incidence of postpartum anemia in the study population

Postpartum anemia	Frequency	Percentage
Yes	2183	53.5
No	1900	46.5
Total	**4083**	**100.0%**



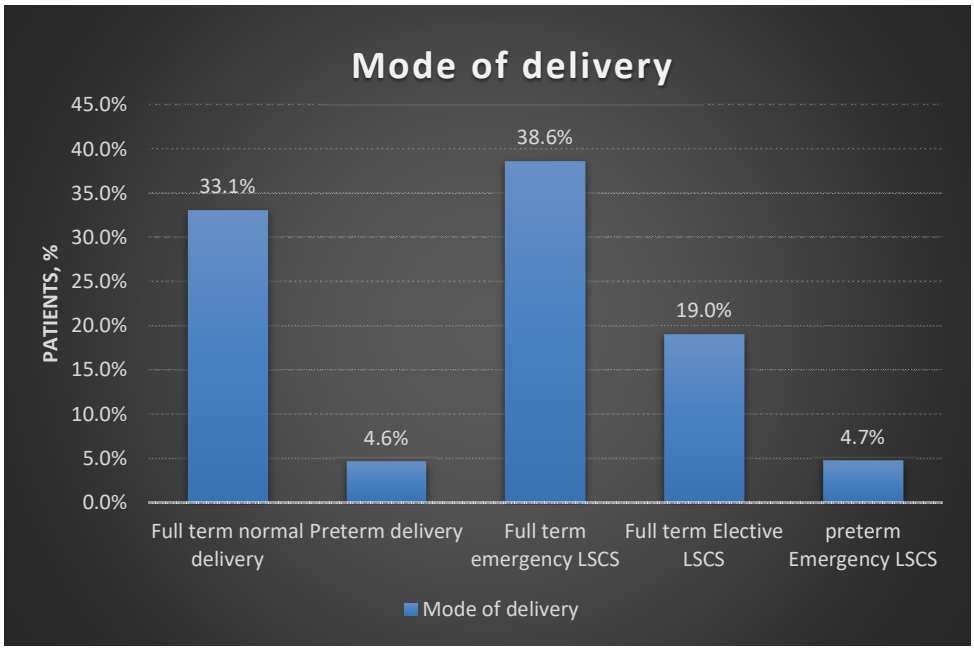
Graph 7: Bar diagram showing incidence of postpartum anemia in the study population

Mode of delivery among patients with postpartum anemia is summarized in Table 8 and Graph 8.

Most patients who had undergone full term emergency LSCS (38.6%) were diagnosed with postpartum anaemia followed by full term vaginal delivery (33.1%).

Table 8: Mode of delivery among patients with postpartum anemia

Mode of delivery	Frequency	Percentage
Full term vaginal delivery	723	33.1
Preterm delivery	101	4.6
Full term emergency LSCS	843	38.6
Full term elective LSCS	414	19.0
Pre term emergency LSCS	102	4.7
Total	**2183**	**100**

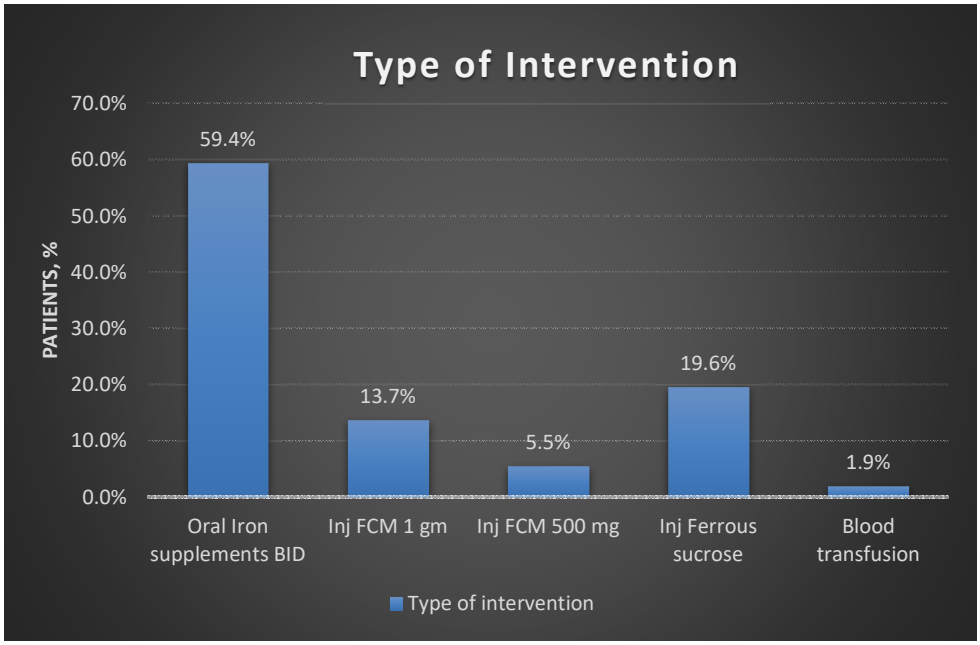


Graph 8: Bar diagram showing mode of delivery among patients with postpartum anemia

Various interventions carried out in patients with postpartum anemia during the study period are shown in Table 9 and Graph 9. Most patients were prescribed oral iron supplements (59.4%) followed by Inj ferrous sucrose (19.6%) and Inj FCM 1g (13.7%).

Table 9: Type of intervention in patients with postpartum anemia

Type of intervention	Frequency	Percentage
Oral Iron supplements BID	1296	59.4
Inj FCM 1 gm	298	13.7
Inj FCM 500 mg	119	5.5
Inj Ferrous sucrose	428	19.6
Blood transfusion	42	1.9
Total	**2183**	**100**



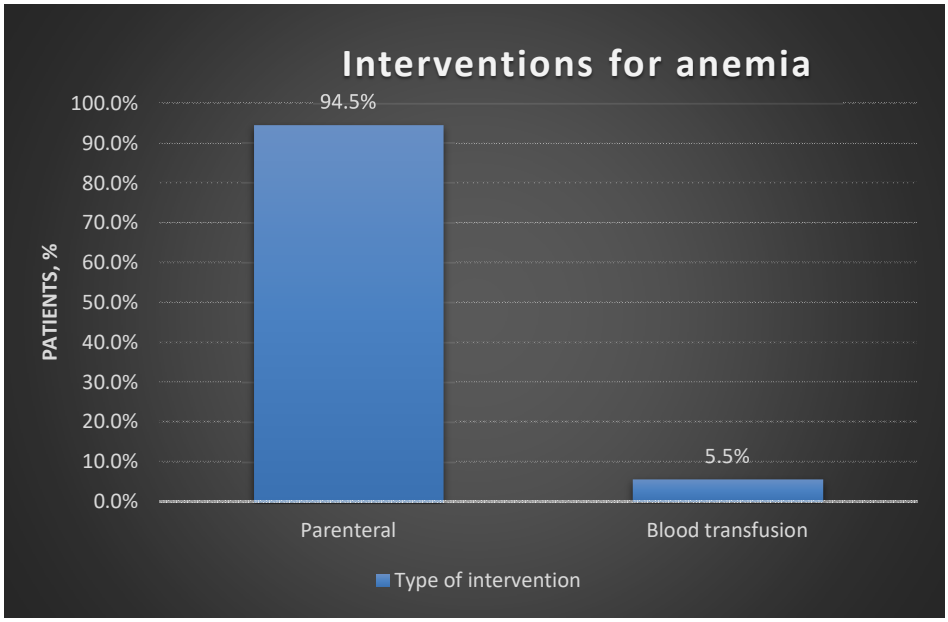
Graph 9: Bar diagram showing type of intervention

Oral iron supplementation takes longer time to replenish iron store, hence were excluded from follow up. 200 patients who received parenteral modes of iron correction or blood transfusion were selected after taking informed consent and followed up 3 weeks post intervention to document the rise in haemoglobin.

Among the 200 patients observed at follow up, 189 (94.5%) had received parenteral therapy and 11 (5.5%) had received blood transfusion (Table 10 and Graph 10).

Table 10: Postpartum intervention category of participants at 3 weeks follow up

Postpartum anemia	Frequency	Percentage
Parenteral	189	94.5
Blood transfusion	11	5.5
Total	**200**	**100.0%**

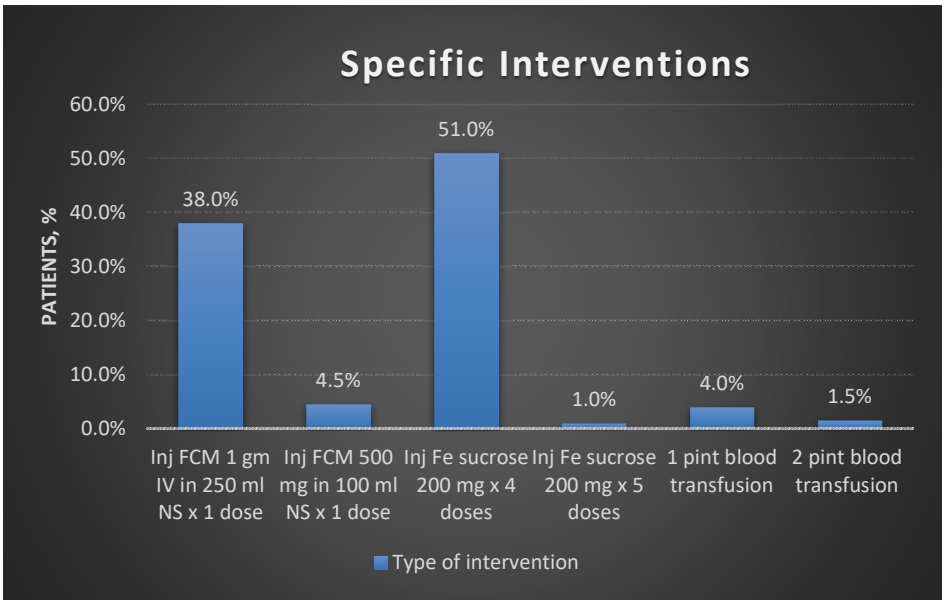


Graph 10: Bar diagram showing postpartum intervention category of participants at 3 weeks follow up

Specifically, most patients (n=102, 50.5%) were treated with Injection (Inj) Ferrous sucrose 200 mg x 4 doses followed by Inj Ferric Carboxymaltose (FCM) 1 gm IV in 250 ml neutral Saline (NS) x 1 dose (n=76, 37.6%); Table 11 and Graph 11.

Table 11: Postpartum intervention (sub- categorization) of participants at 3 weeks follow up

Specific intervention	Frequency	Percentage
Inj FCM 1 gm IV	76	38
Inj FCM 500 mg	9	4.5
Inj Ferrous sucrose 200 mg x 4 doses	102	51
Inj Ferrous sucrose 200 mg x 5 doses	2	1
1 pint blood transfusion	8	4
2 pint blood transfusion	3	1.5
Total	**200**	**100.00%**



Graph 11: Bar diagram showing postpartum intervention(sub- categorization) of participants at 3 weeks follow up

Table 12: Mode of intervention and mean improvement in Hb after 3 weeks in various modes of delivery-

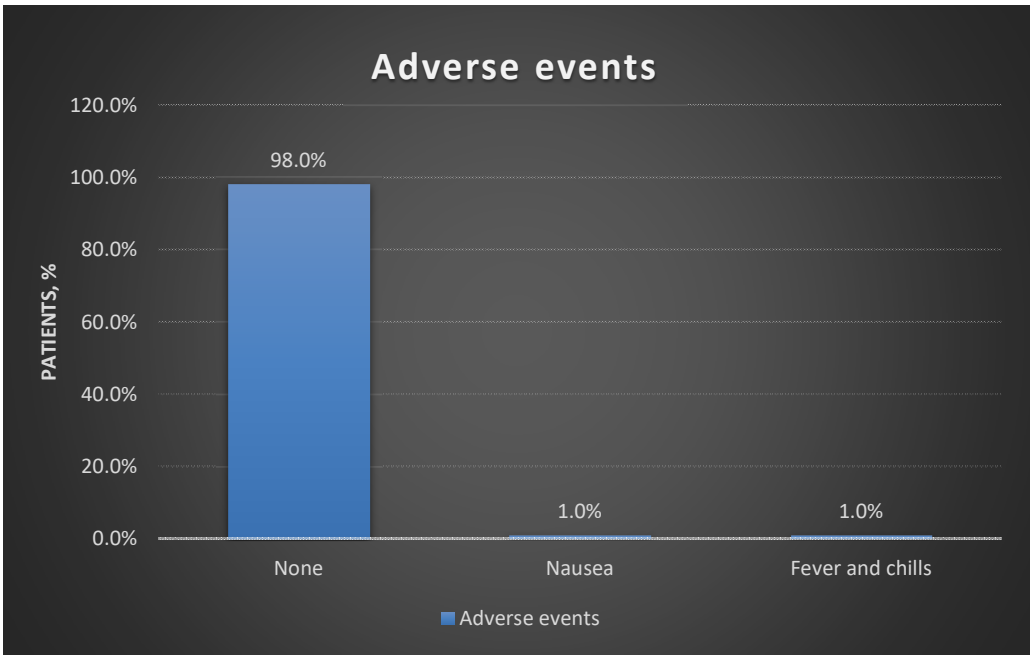
Mode of delivery	**Mode of intervention**	**Mean improvement in Hb**
Full term vaginal delivery	Inj FCM- 30	**1.1 g/dl**
	Inj Iron sucrose- 28	**1 g/dl**
	Blood transfusion- 1	**1 g/dl**
Pre term delivery	Blood transfusion- 2	**1.5 g/dl**
Full term emergency LSCS	Inj FCM- 14	**1.2 g/dl**
	Inj Fe sucrose- 33	**1 g/dl**
	Blood transfusion- 3	**1.2 g/dl**
Full term elective LSCS	Inj FCM- 24	**1.1g/dl**
	Inj Iron sucrose- 23	**0.9 g/dl**
	Blood transfusion- 3	**1 g/dl**
Pre term emergency LSCS	Inj FCM- 17	**1 g/dl**
	Inj Iron sucrose- 20	**0.9 g/dl**
	Blood transfusion- 2	**1.2 g/dl**

In various modes of delivery, the average increase in haemoglobin at 3 weeks follow up post intervention was noted as shown in Table 12.

Overall, 198 (89.0%) patients reported no adverse events. Nausea, fever and chills were reported by 2 patients each. All cases were treated with Inj Avil and Inj hydrocort. The frequency of adverse events are presented in Table 13 and Graph 12.

Table 13: Frequency of adverse events in study population

Adverse reactions	Frequency	Percentage
None	196	98.0
Nausea	2	1.0
Fever and chills	2	1.0
Total	**202**	**100.0%**



Graph 12: Bar diagram showing adverse reactions in study population

The mean ± SD and median (range) hemoglobin level at the follow up visit was 10.5 ±0.7 g/dL and 10.5 (8.2-12.4), respectively (Table 14).

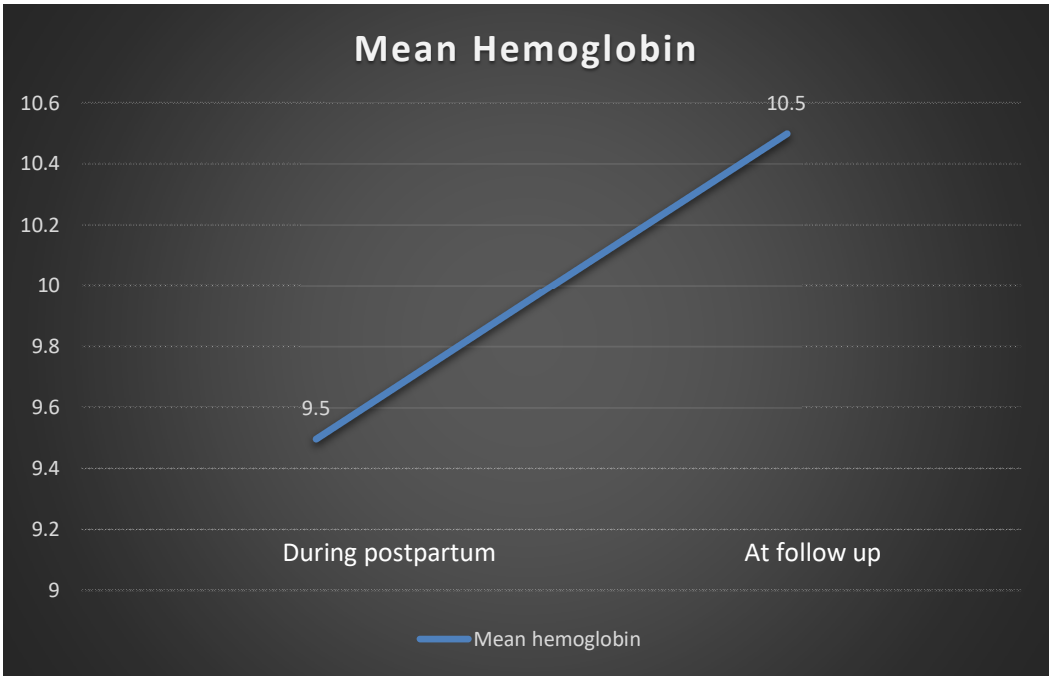
Table 14: Descriptive statistics of postpartum hemoglobin level in the study population

Variable	N	Mean	SD	Median	Range
Hemoglobin level at follow up, g/dL	200	10.5	0.7	10.5	8.2-12.4

Comparison of mean ± SD changes in hemoglobin levels from postpartum day 1 and follow up are summarised in Table 15 and Graph 13. Compared to postpartum day 1 there was significant improvement in the mean ± SD Hemoglobin level at the follow up visit (9.5±0.7 g/dL vs 10.5±0.7 g/dL; mean difference [95% CI]: 1.07[1.02 to 1.13]; p=0.000)

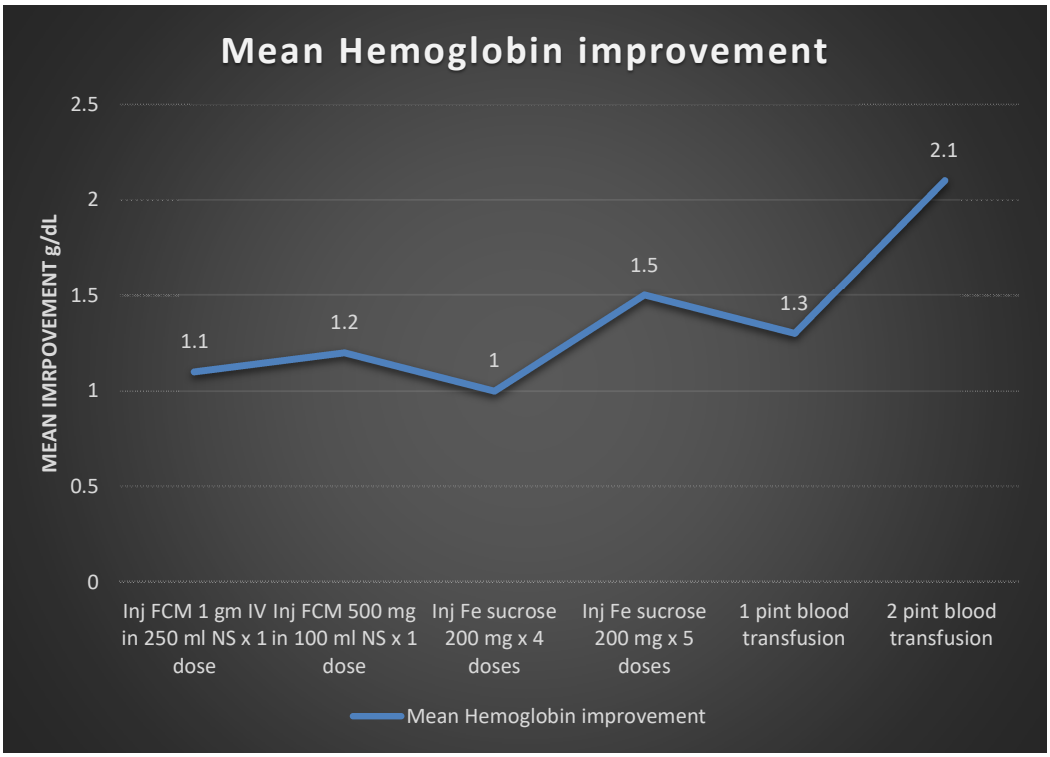
Table 15: Comparison of hemoglobin levels between 2 time points

	Postpartum day 1 mean ± SD, n=202	**At follow up mean ± SD, n=202**	**P value**
Hemoglobin level, g/dL	9.5±0.7	10.5±0.7	0.000
Mean difference (95% CI)	1.07(1.02 to 1.13)		



Graph 13: Comparison of hemoglobin levels between 2 time points

Effect of treatment on improvement in hemoglobin level is shown in Table 16 and Graph 14. Overall, Highest mean improvement in hemoglobin levels was noted with 2 pint blood transfusion (2.1 ±0.5 g/dL) followed by Inj Fe sucrose 200 mg x 5 doses (1.5± 0.4g/dL). The difference in improvement between groups was statistically significant (p=0.000)



Graph 14: Comparison of mean improvement across different treatment types

Table 16: Comparison of mean Hemoglobin level improvement between different interventions

	N	Mean	Std. Deviation	95% Confidence Interval for Mean		P value
				Lower Bound	Upper Bound	
Inj FCM 1 gm IV	76	1.1	0.3	1.0	1.1	0.000
Inj FCM 500 mg IV	9	1.2	0.3	1.0	1.5	
Inj Fe sucrose 200 mg x 4 doses	102	1.0	0.4	0.9	1.1	
Inj Fe sucrose 200 mg x 5 doses	2	1.5	0.4	-2.3	5.3	
1 pint blood transfusion	8	1.3	0.1	1.2	1.4	
2 pint blood transfusion	3	2.1	0.5	1.0	3.2	
Total	202	1.1	0.4	1.0	1.1	

The additional post hoc tukey test showed significance difference ($p<0.05$) in the mean improvement between 2 pint blood transfusion as compared to Inj FCM 1 gm IV in 250 ml NS x 1 dose mean difference, 95% CI: 1.0[0.4. 1.7]), Inj FCM 500 mg in 100 ml NS x 1 dose (0.9[0.1, 1.6]) Inj Fe sucrose 200 mg x 4 doses (1.1[0.4, 1.7])and 1 pint blood transfusion (0.8[0.1, 1.6]) (Table 17).

Table 17: Post hoc tukey test showing specific mean comparison between different treatment groups

Variable	Inj FCM 1 gm IV in 250 ml NS x 1 dose	Inj FCM 500 mg in 100 ml NS x 1 dose	Inj Fe sucrose 200 mg x 4 doses	Inj Fe sucrose 200 mg x 5 doses	1 pint blood transfusion	2 pint blood transfusion
Inj FCM 1 gm IV in 250 ml NS x 1 dose	-	-0.2 (-0.6, 0.2)	0.0 (-0.1, 0.2)	-0.4 (-1.2, 0.4)	-0.2 (-0.6, 0.2)	-1.0* (-1.7, -0.4)
Inj FCM 500 mg in 100 ml NS x 1 dose	0.2 (-0.2, 0.6)	-	0.2 (-0.2, 0.6)	-0.3 (-1.2, 0.6)	-0.1 (-0.6, 0.5)	-0.9* (-1.6, -0.1)
Inj Fe sucrose 200 mg x 4 doses	0.0 (-0.2, 0.1)	-0.2 (-0.6, 0.2)	-	-0.5 (-1.3, 0.3)	-0.3 (-0.7, 0.1)	-1.1* (-1.7, -0.4)
Inj Fe sucrose 200 mg x 5 doses	0.4 (-0.4, 1.2)	0.3 (-0.6, 1.2)	0.5 (-0.3, 1.3)	-	0.2 (-0.7, 1.1)	-0.6 (-1.6, 0.4)
1 pint blood transfusion	0.2 (-0.2, 0.6)	0.1 (-0.5, 0.6)	0.3 (-0.1, 0.7)	-0.2 (-1.1, 0.7)	-	-0.8* (-1.6, -0.1)
2 pint blood transfusion	1.0* (0.4. 1.7)	0.9* (0.1, 1.6)	1.1* (0.4, 1.7)	-	0.6 (-0.4, 1.6)	0.8* (0.1, 1.6)

"Test used: Post hoc tukey test, * indicated significance $p<0.05$"

DISCUSSION

Prevalence of postpartum anemia is increasing globally with higher risk among women in developing or lower-and middle-income countries. Early detection and optimal treatment is paramount as postpartum anemia is associated with morbidity, mortality and decreased quality of life. The present study was conducted to determine the incidence of postpartum anemia among women admitted with at least 28 week of pregnancy at K.L.E's Dr. Prabhakar Kore Hospital and Medical Research Centre, Belagavi. Additionally, the various interventions carried out to treat postpartum anemia were assessed and the efficacy of different treatments were noted.

During the study period, there were a total of 4083 deliveries in the hospital. Most of the patients belonged to the age group of 26-30 years (43.3%), followed by 21-25 years (22.4%) and weight between 61-70 Kg (24.4%), followed by 51-60 Kg (23.5%) and 71-80 Kg (17.7%). Overall, 49.3% patients belonged to a middle class, 45.6% patients belonged lower class and 5.1% patients belonged to upper class. The demographic characteristics were consistent with previous studies carried out in southern part of India where most women were over 20 years of age and belonged to middle class [19, 58].

Low parity is reported as protective against postpartum anemia and women with more than 2 pregnancies are at an enhanced risk of anemia. Further, the risk of postpartum anaemia is higher among women with multiple pregnancies and those with <2 years of space between pregnancies [22, 51, 59]. In this study, overall 45.8% patients were primigravida and 54.2% were multigravida. While most patients in our study were multigravida, the space between pregnancies was not recorded.

Risk of postpartum anemia is lower among women who deliver vaginally than those who deliver by caesarean section which could be due to high risk of postpartum haemorrhage and associated morbidity among caesarean delivery [60]. In our study, most women diagnosed with postpartum anemia underwent caesarean sections including full term emergency LSCS, full term elective LSCS and pre term emergency LSCS and only 33% had undergone vaginal delivery. The relationship between gestational age and postpartum anemia is although not directly linked, preterm pregnancies often require caesarean section and may results in postpartum haemorrhage resulting in anemia [61]. In our study, women were required to be of at least 28 weeks of pregnancy to be part of the study and only 4.6 women who underwent preterm delivery had postpartum anemia.

Postpartum anemia is characterised by hemoglobin levels below 10 g/dl or hematocrit below 30%. However, various studies have considered different cut off levels including <12 g/dL, <11 g/dL and <10g/dL to assess postoperative anemia. Hemoglobin levels <10g/dL are suggestive of clinically significant anemia and hence the same was considered a cut off value in our study. Incidence of anemia during the study period was 53.5%. The frequency is much higher as compared 25% [hemoglobin <12 g/dL] reported by by Bhagwan D, et al [43] 29% [Hemoglobin level <10g/dL] reported by Medina Garrido C, et al [45], 45% [hemoglobin level <11g/dL) by Rubio-Álvarez A, et al [46] and lower as compared to 76% reported by Selvaraj R et al [47]. The difference in incidence across study could be related to varying cut off hemoglobin levels used, inclusion criteria and timing of assessment.

Management of postpartum anemia typically involves several strategies aimed at replenishing iron stores, correcting hemoglobin levels, and addressing underlying causes. The main management approaches include oral iron therapy, parenteral iron therapy and blood transfusion. These should be supplemented with dietary modification encouraging iron rich diet and reducing intake of foods which are inhibitors of iron absorption [62]. **World Health Organization** recommends routine iron supplementation for postpartum women for at least three months to replenish iron stores [12]. Most commonly prescribed medications include, oral iron, IV iron sucrose and IV ferric carboxymaltose. In this study, more than half of the patients were prescribed twice daily oral iron supplements (59.4%) followed by injection ferrous sucrose (19.6%) and injection FCM 1 g (13.7%).

Blood transfusions have traditionally been used to manage severe anemia in the puerperium. However, even in the absence of clear transfusion indications, many women without severe symptoms receive blood transfusions. This practice can potentially heighten the risk of septicemia, hematological reactions, delayed wound healing, and thromboembolism, especially in cases where multiple transfusions are administered [63]. As per guidelines, severe anemia characterised by hemoglobin levels <7 g/L should be immediately treated with blood transfusion. In this study only 1.9% of patients were treated with blood transfusion.

American College of Obstetricians and Gynecologists (ACOG) suggests evaluating hemoglobin levels in the postpartum period and treating accordingly. They emphasise on regular follow up and recommend post-partum visits with their obstetrician-gynecologists or other obstetric care providers within the first 3 weeks postpartum. This initial assessment should be followed up with ongoing care as

needed, concluding with a comprehensive postpartum visit no later than 12 weeks after birth [64]. In our study, hemoglobin levels were checked within 24 hours after delivery to evaluate anemia and upon treatment patients were followed up after 3 weeks to evaluate improvements.

Among the oral and IV treatments, oral iron therapy takes much longer to replenish iron stores. Oral supplements remains largely unabsorbed in the digestive tract and less than 20 mg is absorbed per day which means a continuous oral iron supplementation for at least a month is needed to achieve 10 g/L increase in hemoglobin and it may take minimum of six months to completely normalise Hemoglobin levels and replenish iron stores [65]. Based on the above facts and considering a short follow up of 3 weeks, a total of 200 women treated with parenteral iron such as inj FCM 1g (38%), Inj FCM 500g (4.5%), Inj Ferrous sucrose 200 mg*4 doses (51%), Inj Ferrous sucrose 200 mg*5 doses (1%), 1 pint blood transfusion (4%) and 2 pint blood transfusion (1.5%) were included for further analysis.

Adverse events of iron therapies have been reported previously. According to a systematic review carried out by Avni T, et al infusion reactions are common adverse events in patients treated with IV iron therapy and incidence of gastrointestinal AEs are reduced [66]. In another systematic review, Sultan P, et al reported increased likelihood of skin flushing among patients treated with IV iron than oral iron whereas gastrointestinal side effects including constipation and dyspepsia were reduced [48]. Blood transfusions are associated with inherent riks of transmission of pathogens and immunosuppression [67]. In our study, the rate of adverse events was significantly low with incidence of only 2% comprised of nausea, fever and chills in 2 women each.

Previous studies have shown an overall improvement in hemoglobin levels after treatment. Li N, et al reported a mean improvement of 1.84 g/dL at week 2, 2.98g/dL at week 5, 3.62 g/dL at week 6 as compared to baseline among patients treated with oral iron [68]. Hansen R et al reported a mean improvement of 0.4 g/dL at week 6 with IV iron therapy [69]. Perelló MF, et al [41] and EL Khouly et al reported greater improvements in IV groups as compared to only oral therapy. Hye RA et al [70] compared the efficacy of IV iron sucrose and blood transfusion among postpartum women and reported comparative mean haemoglobin improvements between both groups. In another study, Khamaiseh et al reported greater but not significant improvements in mean haemoglobin levels within 1 week among patients who underwent blood transfusion as compared to IV iron sucrose [71]. These results suggested that while blood transfusion is effective, the IV iron therapies are almost as effective as blood transfusion in reversing the hemoglobin levels to normal levels.

Similar improvements were noted in our study among patients treated with IV iron and blood transfusions. Compared to postpartum day 1 there was significant improvement in the mean ± SD Hemoglobin level at the follow up visit (9.5±0.7 g/dL vs 10.5±0.7 g/dL; mean difference [95% CI]: 1.07[1.02 to 1.13]; p=0.000). Highest mean improvement in hemoglobin levels was noted with 2 pint blood transfusion (2.1 ±0.5 g/dL) followed by Inj Fe sucrose 200 mg x 5 doses (1.5± 0.4g/dL), which was similar to previous reports. Upon additional post hoc analysis, 2 pint blood transfusion was an independent factor which increased the haemoglobin level as compared to other modes of intervention. This confirms that blood transfusion is effective in rapid increase in hemoglobin levels and replenishing iron stores as compared to IV iron therapies.

STRENGTHS OF THE STUDY-

- Incidence of postpartum anemia was calculated among all women who underwent delivery at the institution which is one of the main tertiary care centres in the area. This gives a real-world data which can be extrapolated to determine incidence at a larger level.
- Patients were followed up after three weeks to assess improvements in hemoglobin levels. Those receiving oral therapy were excluded from the study, as oral treatments typically take longer to elicit a response, which could potentially skew the data on improvements.

LIMITATIONS OF THE STUDY-

- Convenient sampling was used to include patients for analysis of secondary objective which could have resulted in selection bias and unequal number of patients with different interventions.
- A limitation of this study is that it was conducted at a single tertiary care center, which may affect the generalizability of the results. Most women in rural areas might not visit such centers, thereby potentially skewing the data and limiting its applicability to the broader population. Further studies are warranted at population level, state level and country level are warranted to determine the incidence of postpartum anemia in India.
- Short follow-up duration was another limitation, which prevented the evaluation of the efficacy of oral iron. Considering that oral iron is the most commonly used treatment modality for postpartum anemia, randomized controlled trials with long-term follow-up evaluating the efficacy of oral iron in comparison to parenteral iron and blood transfusion are needed.

CONCLUSION

- Incidence of postpartum anemia was higher affecting more than half of the study population.
- Improvements in mean iron levels at 3 weeks of follow up in selected patients was significantly higher in women who underwent blood transfusion and IV ferrous sucrose as compared to other methods.
- The results show that efficacy of IV ferrous sucrose is almost equal to that of blood transfusion in reversing the mean iron levels among postpartum women with only 3 weeks of follow up.
- The study highlights the importance of follow up appointments and regular monitoring of hemoglobin and iron levels post-treatment to ensure recovery and adjust treatment as necessary.
- While we reported higher incidence of postpartum anemia, further studies are warranted at population, state, and country levels to determine the incidence of postpartum anemia in India. Additionally, conducting comprehensive research across different demographics and regions is essential to gain a holistic understanding of the prevalence and impact of postpartum anemia.

SUMMARY-

The present study was conducted at K.L.E's Dr. Prabhakar Kore Hospital and Medical Research Centre(Department of Obstetrics and Gynaecology), Belagavi with an objective to determine the incidence of postpartum anemia and to find out the various interventions carried out for treatment of postpartum anemia. All women aged 18 years or more undergoing vaginal or caesarean sections at a gestational age of at least 28 weeks fulfilling the inclusion criteria were included in the study. A detailed information on demographics and patient history, gestational details and delivery details were recorded. Hemoglobin levels measured after 24 hours post-delivery of <10 g/dl was considered as postpartum anemia. All women were treated with different interventions including oral iron therapy, IV iron therapy and blood transfusion as deemed necessary. For the secondary analysis, 200 women were then followed up after 3 weeks of intervention and haemoglobin levels were assessed to document improvement. The efficacy of different interventions for treatment of anemia in those patients was evaluated.

A total of 4083 deliveries during the study period of 1 year were included to evaluate primary objective. Most of the patients belonged to the age group of 26-30 years (43.3%), belonged to middle class (49.3%), weighed between 61-70 Kg (24.4%) and 54.2% were multigravida, 50.0% were in gestational week 36-40 weeks. Most patients (34.6%) underwent full term emergency LSCS. Incidence of postpartum anemia in this study was 53.5%. Overall, 38.6% of patients with postpartum anemia underwent full term emergency LSCS. 59.4% were treated with oral iron supplements and remaining were treated with either IV or blood transfusion. However, since

follow up was short duration, only women treated with IV and/or blood transfusion were included for secondary analysis.

Among 200 women who followed up for secondary analysis, 94.5% received parenteral therapy and 5.5% received blood transfusion. Overall, 89.0% patients reported no adverse events. Nausea, fever and chills were reported by 2 patients each. All cases were treated with Inj Avil and Inj hydrocort. Compared to postpartum day 1 significant improvement was noted in the mean ± SD Hemoglobin level at the follow up visit (9.5±0.7 g/dL vs 10.5±0.7 g/dL; mean difference [95% CI]: 1.07[1.02 to 1.13]; p=0.000). Overall, Highest mean improvement in hemoglobin levels was noted with 2 pint blood transfusion (2.1 ±0.5 g/dL) followed by Inj Fe sucrose 200 mg x 5 doses (1.5± 0.4g/dL). The difference in improvement between groups was statistically significant (p=0.000). This was further confirmed by post hoc Tukey test which showed significance difference ($p<0.05$) in the mean improvement between 2 pint blood transfusion as compared to Inj FCM 1 gm IV in 250 ml NS x 1 dose mean difference, 95% CI: 1.0[0.4. 1.7]), Inj FCM 500 mg in 100 ml NS x 1 dose (0.9[0.1, 1.6]) Inj Ferrous sucrose 200 mg x 4 doses (1.1[0.4, 1.7])and 1 pint blood transfusion (0.8[0.1, 1.6]).

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ANNEXURE-I

KAHER'S JNMC BELAGAVI

INFORMED CONSENT FORM

"A PROSPECTIVE STUDY OF POSTPARTUM ANAEMIA- INCIDENCE AND INTERVENTIONS."

Name of Student/Principal Investigator: ----------

Name of Guide/Co Investigators: ----------

Objective: To assess the incidence of postpartum anaemia, find out the interventions done and compare the efficacy of different modes of intervention.

Introduction:

Anemia after the delivery of a child (postpartum anemia) isa common problem throughout the world. The prevalence of postpartum anemia is highest in developing countries like India where it is a major cause of maternal morbidity and mortality.

It has been estimated that of the ~500,000 maternal deaths occurring each year on a global scale in association with delivery, 20% are caused by peripartum hemorrhage and anemia. In India, the prevalence of postpartum anemia is considerably higher, in the range of 50%–60%. These figures emphasize that postpartum iron deficiency and anemia are continuing major health problems that should be given more attention.

Postpartum anaemias can be managed by oral iron supplements, or parentral injections including iron sucrose and ferric carboxymaltose.

Blood transfusions can be done in very severe cases.

Explanation of procedure

- ✓ After taking informed consent, haemoglobin levels of all pregnant women being admitted to KLES Dr. Prabhakar Kore Hospital fulfilling the inclusion criteria will be recorded at 24 hrs post delivery to assess the incidence of postpartum anaemia.
- ✓ The different modes of interventions done to correct this anaemia will be monitored and recorded, and their efficacy noted.
- ✓ Patients will be asked to follow up after 3 weeks of treatment to document their improvement in hemoglobin.

Withdrawal from participation in the study: Participation in this study is voluntary. You will be free to decide whether to participate in this study or continue participation once enrolled. In case you decide to withdraw your participation, you are free to do so. However, please convey the decision to the principal investigator.

Possible benefits from participating in the study: You will/will not have nor get any benefits by participating in this study. The data gathered will help the population at large.

Possible risks from participating in the study: There are no risks involved in participating in this study.

Privacy and confidentiality: The information collected from you will be coded, to prevent any person from identifying you. Your identity will never be revealed. The data collected from you will be kept confidential and only processed or aggregated data will be used for publication.

Financial incentives: You will not receive any payment for participating in this study.

Authorization for publication of aggregated data: Results obtained after processing of the aggregated data will be published for scientific purposes and or presented to scientific groups. However, your identity will never be revealed.

Questions: In case of any questions with regard to this study, you are free to contact: "Name of student/PI, mobile number, email ID" If you have any question or complaints with regard to your right as study participant you may contact Dr Harsha Hegde, Chairperson, Ethical committee of JNMC, 0831-2473777 Extension 4052.

Legal rights: By signing this consent form, we are not waving any of your legal rights.

CONSENT STATEMENT

I am making a voluntary decision to participate in the study "**A PROSPECTIVE STUDY OF POSTPARTUM ANAEMIA- INCIDENCE AND INTERVENTIONS.”**. My signature below indicates that I have decided to participate and I have read the information provided above or the information provided above has been read to me in the language that I understand best. I was given the opportunity to ask questions and that they have been answered to my satisfaction.

Name of the participant:

Signature or left thumb impression of the participant:

Name of the witness:

Signature or left thumb impression of the witness:

Name of the investigator:

Signature of the investigator:

ANNEXURE-II

STUDY PROFORMA

Serial Number-

Name- Age-

IP no- Address-

Occupation-

Income-

Socioeconomic status-

Obstetric score:

Gravida- LMP-

Para- EDD-

Live- Period of gestation-

Mode of delivery-

Presenting complaints-

H/o easy fatiguability/ giddiness-

H/o hook worm infestation-

H/o anorexia-

H/o breathlessness-

H/o puffiness of face-

H/o iron intolerance-

Past History-

H/o DM/ HTN/ Asthma/ Epilepsy/ TB/ Thyroid or Cardiac disorders-

H/o blood transfusion/ drug allergies/ previous surgeries-

Menstrual history-

Menarche at-

Past cycles-

Obstetric history-

Married life-

Score-

Details about previous pregnancy:

H/o antepartum haemorrhage-

H/o postpartum haemorrhage-

H/o blood transfusion-

H/o any other complications-

Present pregnancy-

1. H/o antepartum haemorrhage-

2. H/o postpartum Haemorrhage-

3. H/o blood transfusion-

4. H/o iron and folic acid intake-

General examination-

Features of chronic anaemia- Yes No

1. Pallor
2. Glossitis
3. Facial puffiness
4. Koilonychia

Vitals-

PR-

BP-

CVS-

RS-

Investigations-

1. Haemoglobin-
2. Urine routine and microscopy-
3. Blood- urea and creatinine
4. Peripheral Smear

Iron deficit-

Mode of intervention done-

Yes No

Oral Iron supplements

Inj Fe sucrose

Inj FCM

Blood transfusion

Adverse events noted during transfusion of the patient-

Yes No

1. Anaphylactic reaction

(Shivering, hypotension)

2.Nausea/ Vomiting

3. Thromophlebitis

4. Abdominal pain-

5. Diarrhoea-

6. Chills-

7. Joint pains-

Post therapy assessment-

Date of follow up-

Parameters assessed 3 weeks post therapy-

Mode of iron transfusion received-

1. Symptomatic improvement-
2. Haemoglobin-

ANNEXURE III – MASTER CHART

SL NO	IP NO	Age	Socioeconomic Status	Weight	DOA	Date of delivery	Date of sample collection	Obs Score	Mode of delivery	POG	Post delivery/ Post op Hb	Iron deficit	Intervention done	Parenteral iron supplementation	Blood transfusion	Adverse reactions	Follow up visit	Hb on follow up	Improvement in Hb
1	1194895	26 years	Middle class	60 kgs	08-02-2023	10-02-2023	11-02-2023	G2P1L1	FTND	39 weeks 4 days	9 g/dl	932mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nausea- Inj Avil and Inj hydrocort given	02-03-2023	10.2 g/dl	1.2 g/dl
2	1176420	30 years	Low class	50 kgs	18-04-2023	22-04-2023	23-04-2023	G2P1L1	FTND	39 weeks 4 days	9.2 g/dl	836 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	14-05-2023	10.2 g/dl	1 g/dl
3	1183640	35 years	Low class	58 kgs	16-05-2023	20-05-2023	21-05-2023	G4P3L2D1	PTD	31 weeks 5 days	7.5 g/ dl	1098 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	11-06-2023	8.2 g/dl	0.7 g/dl
4	1176543	29 years	Middle class	67 kgs	12-03-2023	15-03-2023	16-03-2023	Primigravida	FT emergency LSCS	38 weeks 2 days	10 g/dl	1056 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose					
5	1198567	21 years	Low class	50 kgs	11-03-2023	13-03-2023	14-03-2023	G2A1	FT emergency LSCS	39 weeks	8.6 g/dl	908 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-02-2023	10 g/dl	1.4 g/dl
6	1187690	22 years	Low class	80 kgs	12-06-2023	13-06-2023	14-06-2023	G2A1	FTND	37 weeks 0 days	10 g/dl	760 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	01-04-2023	11 g/dl	1 g/dl
7	1198763	28 years	Middle class	70 kgs	09-04-2023	12-04-2023	13-04-2023	Primigravida	PTD	32 weeks 2 days	7.5 g /dl	1256 mg	Yes	No	Yes - 2 pint PCV	Nil	08-05-2023	10 g/dl	2.5 g/dl
8	1197652	30 years	Low class	89 kgs	12-02-2023	14-02-2023	15-02-2023	G3P2L2	FTND	37 weeks 1 day	8 g/dl	880 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-03-2023	9 g/ dl	1 g/dl
9	1000191	32 years	Middle class	60 kgs	17-08-2023	18-08-2023	19-08-2023	G2P1L1	FT Elective LSCS	37 weeks	9.8 g/dl	816 mg	Yes	Inj FCM 500 mg in 100 ml NS x 1 dose	No	Nil	06-09-2023	11.6 g/dl	1.8 g/dl
10	1000102	28 years	Low class	68 kgs	17-08-2023	18-08-2023	19-08-2023	G2P1L1	FT Elective LSCS	37 weeks 2 days	10 g/dl	793.76 mg	Yes	Inj FCM 500 mg in 100 ml NS x 1 dose	No	Nil	07-09-2023	10.8 g/dl	0.8 g/dl
11	1176456	30 years	Low class	70 kgs	18-02-2023	21-02-2023	22-02-2023	G2A1	PTD	35 weeks 2 days	9.9 g/dl	854 mg	Yes	Inj FCM 500 mg in 100 ml NS x 1 dose	No	Nausea- Inj Avil and Inj hydrocort given	14-03-2023	11.2 g/dl	1.3 g/dl
12	1198760	28 years	Middle class	48 kgs	20-03-2023	20-03-2023	21-03-2023	G3P2L2	PT Emergency LSCS	36 weeks 0 days	10 g/dl	730 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	11-04-2023	10.2 g/dl	0.2 g/dl
13	1120891	32 years	Middle class	80 kgs	22-01-2023	22-01-2023	23-01-2023	G2A1	PT Emergency LSCS	34 weeks 2 days	10 g/dl	789 mg	Yes	Inj FCM 500 mg in 100 ml NS x 1 dose	No	Nil	14-02-2023	11 g/dl	1 g/dl
14	1145890	30 years	Low class	77 kgs	24-03-2023	26-03-2023	27-07-2023	Primigravida	PTD	31 weeks 5 days	9.9 g/dl	876 mg	Yes	Inj Fe sucrose 200 mg x 2 doses	No	Nil			

15	1178321	30 years	Middle class	50 kgs	22-09-2023	22-09-2023	23-09-2023	G3P1L1A1	FT Emergency LSCS	38 weeks 0 days	9.2 g/dl	836 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	12-10-2023	10 g/ dl	0.8 g/dl
16	1189667	31 years	Low class	52 kgs	29-05-2023	30-05-2023	31-05-2023	G2P1L1	PTD	32 weeks	10 g/dl	1065 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil			
17	1182567	30 years	Middle class	62 kgs	18-05-2023	19-05-2023	20-05-2023	G3P2L2	PT Emergency LSCS	36 weeks 0 days	9.8 g/dl	1085 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil			
18	1198754	28 years	Middle class	70 kgs	22-06-2023	24-06-2023	25-06-2023	G3A2	FT emergency LSCS	38 weeks 6 days	10 g/dl	836 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	20-07-2023	11 g/dl	1 g/dl
19	1109876	20 years	Low class	72 kgs	18-07-2023	19-07-2023	20-07-2023	Primigravida	FT Elective LSCS	39 weeks 2 days	9.8 g/dl	832 mg	Yes	Inj FCM 500 mg in 100 ml NS x 1 dose	No	Nil			
20	1176542	28 years	Middle class	76 kgs	20-07-2023	22-07-2023	23-07-2023	G2P1L1	PT Emergency LSCS	32 weeks 3 days	10 g/dl	786 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil			
21	1298760	34 years	Low class	58 kgs	22-07-2023	25-07-2023	26-07-2023	G4P3L3	FT emergency LSCS	39 weeks	9.2 g/dl	856 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil			
22	1134567	21 years	Low class	66 kgs	18-06-2023	19-06-2023	20-06-2023	G2A1	FT Elective LSCS	38 weeks	9.8 g/dl	768 mg	Yes	Inj Fe sucrose 200 mg x 3 doses	No	Nil			
23	1178090	22 years	Low class	54 kgs	08-06-2023	11-06-2023	12-06-2023	Primigravida	PTD	33 weeks 2 days	10 g/dl	870 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil			
24	1120000	28 years	Middle class	69 kgs	10-06-2023	10-06-2023	11-06-2023	G2P1L1	FT emergency LSCS	37 weeks 3 days	10 g/dl	984 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil			
25	1119800	24 years	Low class	58 kgs	11-08-2023	14-08-2023	15-08-2023	G3P1L1A1	PT Emergency LSCS	34 weeks 5 days	10 g/dl	744 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil			
26	1173280	21 years	Middle class	62 kgs	10-04-2023	13-04-2023	14-04-2023	Primigravida	PT Emergency LSCS	36 weeks 2 days	10 g/dl	860 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil			
27	1184320	22 years	Middle class	67 kgs	11-02-2023	13-02-2023	14-02-2023	Primigravida	FT Elective LSCS	38 weeks 3 days	9.8 g/dl	780 mg	Yes	Inj FCM 500 mg in 100 ml NS x 1 dose	No	Nil			
28	1109345	24 years	Middle class	71 kgs	16-03-2023	18-03-2023	19-03-2023	G3A2	PTD	34 weeks	9.8 g/dl	846 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil			
29	1140239	30 years	Low class	59 kgs	15-03-2023	17-03-2023	18-03-2023	G3P2L2	FTND	38 weeks 3 days	10 g/dl	680 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil			
30	1120789	37 years	Low class	61 kgs	16-04-2023	17-04-2023	18-04-2023	G2A1	PTD	32 weeks	9.2 g/dl	720 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil			
31	1143225	29 years	Middle class	67 kgs	01-08-2023	07-08-2023	08-08-2023	G3P2L2	PT Emergency LSCS	32 weeks 1 day	9 g/dl	932 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil			
32	1198043	26 years	Low class	65 kgs	03-08-2023	04-08-2023	05-08-2023	G2P1L1	FTND	37 weeks	9.7 g/dl	890 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil			
33	1174324	28 years	Low class	73 kgs	11-06-2023	12-06-2023	13-06-2023	G2P1L1	FT emergency LSCS	38 weeks	10 g/dl	680 mg	Yes	Inj FCM 500 mg in 100 ml NS x 1 dose	No	Nil			
34	1187520	27 years	Middle class	63 kgs	10-08-2023	11-08-2023	12-08-2023	G2P1L1	PT Emergency LSCS	31 weeks 2 days	9.4 g/dl	840 mg	Yes	Inj Fe sucrose 200 mgx 4 doses	No	Nil			
35	1176520	19 years	Low class	59 kgs	12-07-2023	12-07-2023	13-07-2023	G2A1	PTD	32 weeks 4 days	9.7 g/dl	784 mg	Yes	Inj Fe sucrose 200 mgx 4 doses	No	Nil			

36	1189034	28 years	Middle class	55 kgs	19-07-2023	19-07-2023	20-07-2023	G2P1L1	FTND	38 weeks 3 days	9.6 g/dl	830 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil			
37	1198028	30 years	Low class	59 kgs	11-07-2023	12-07-2023	13-07-2023	G2P1L1	FT Elective LSCS	39 weeks 0 days	9.4 g/dl	820 mg	Yes	Inj FCM 500 mg in 100 ml NS x 1 dose	No	Nil			
38	1209878	34 years	Middle class	48 kgs	10-08-2023	11-08-2023	12-08-2023	G3P1L1A1	PTD	32 weeks 3 days	9.6 g/dl	740 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil			
39	1113246	29 years	Low class	52 kgs	12-06-2023	13-06-2023	14-06-2023	G3A2	PTD	33 weeks 1 day	10 g/dl	794 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil			
40	1196856	26 years	Middle class	60 kgs	14-06-2023	19-06-2023	20-06-2023	Primigravida	FTND	39 weeks 2 days	9.8 g/dl	824 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	10-07-2023	11 g/dl	1.2 g/dl
41	1196160	28 years	Middle class	64 kgs	29-05-2023	01-06-2023	02-06-2023	Primigravida	FTND	39 weeks 2 days	9.4 g/dl	780 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	21-06-2023	10.2 g/dl	0.8 g/dl
42	1197238	23 years	Middle class	60 kgs	17-06-2023	20-06-2023	21-06-2023	Primigravida	PT Emergency LSCS	36 weeks	9.8 g/dl	816 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-07-2023	10.7 g/dl	0.9 g/dl
43	1197237	22 years	Middle class	80 kgs	15-06-2023	20-06-2023	21-06-2023	G2P1L1	FTND	37 weeks 1 day	9.2 g/dl	1037 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	12-07-2023	10.2 g/dl	1 g/dl
44	1197140	23 years	Middle class	69 kgs	15-06-2023	20-06-2023	21-06-2023	G2P1L1	FT emergency LSCS	40 weeks 1 day	8.6 g/dl	1089 mg	Yes	No	1 pint PCV transfused	Chills, fever noted- Inj Avil and Inj Hydrocort given	10-07-2023	9.8 g/dl	1.2 g/dl
45	1199636	28 years	Middle class	52 kgs	26-06-2023	01-07-2023	02-07-2023	Primigravida	FTND	38 weeks 1 day	10.2 g/dl	728 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	29-07-2023	11.8 g/dl	1.6 g/dl
46	1200150	28 years	Middle class	80 kgs	01-07-2023	04-07-2023	05-07-2023	G2P1L1	FTND	37 weeks 1 day	9.6 g/dl	925 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	01-08-2023	10.8 g/dl	1.2 g/dl
47	1200355	29 years	Middle class	62 kgs	01-07-2023	04-07-2023	05-07-2023	G2P1L1	FT emergency LSCS	39 weeks 3 days	9.8 g/dl	828 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	NIl	01-08-2023	10.2 g/dl	0.4 g/dl
48	1200858	24 years	Low class	80 kgs	01-07-2023	06-07-2023	07-07-2023	G2P1L1	FT Elective LSCS	39 weeks 5 days	9.6g/dl	960.8 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	01-08-2023	10.2 g/dl	0.6 g/dl
49	1201144	21 years	Middle class	48 kgs	03-07-2023	07-07-2023	08-07-2023	Primigravida	FT emergency LSCS	37 weeks 4 days	10.2 g/dl	707 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	29-07-2023	10.8 g/dl	0.6 g/dl
50	1202611	27 years	Middle class	50 kgs	10-07-2023	13-07-2023	14-07-2023	G3P2L2	FT Elective LSCS	38 weeks 4 days	8.6 g/dl	908 mg	Yes	No	1 pint PCV transfused	Nil	01-08-2023	10 g/dl	1.4 g/dl
51	1203071	22 years	Middle class	62 kgs	10-07-2023	15-07-2023	16-07-2023	Primigravida	FT emergency LSCS	39 weeks 6 days	9.4 g/dl	886 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	08-08-2023	10.2 g/dl	0.8 g/dl
52	1202993	21 years	Middle class	65 kgs	11-07-2023	15-07-2023	16-07-2023	Primigravida	FT emergency LSCS	40 weeks 5 days	9.8 g/dl	843 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	01-08-2023	11.2 g/dl	1.4 g/dl
53	1202714	21 years	Middle class	60 kgs	16-07-2023	20-07-2023	21-07-2023	Primigravida	FT emergency LSCS	40 weeks 2 days	10 g/dl	788 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	12-08-2023	11.2 g/dl	1.2 g/dl
54	1196603	28 years	Middle class	56 kgs	14-06-2023	17-06-2023	18-06-2023	G2P1L1	FT emergency LSCS	38 weeks 3 days	10 g/dl	768 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	11-07-2023	11.2 g/dl	1.2 g/dl
55	1196438	25 years	Middle class	80 kgs	14-06-2023	19-06-2023	20-06-2023	G2P1L1	FTND	38 weeks 3 days	9.2 g/dl	828 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	01-07-2023	10.4 g/dl	1.2 g/dl
56	1195966	27 years	Low class	60 kgs	11-06-2023	15-06-2023	16-06-2023	G2P1L1	FTND	39 weeks 1 day	9.2 g/dl	903.2 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-07-2023	10 g/dl	0.8 g/dl
57	1195830	36 years	Low class	80 kgs	11-05-2023	15-05-2023	16-05-2023	G4P2L2A1	FT emergency LSCS	37 weeks	7.4 g/dl	1383 mg	Yes	No	2 pint PCV transfused	Nil	12-06-2023	9 g/dl	1.6 g/dl

58	1196027	24 years	Low class	78 kgs	11-05-2023	15-05-2023	16-05-2023	Primigravida	FTND	38 weeks 2 days	9.2 g/dl	1028 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	12-06-2023	10 g/ dl	0.8 g/dl
59	1195564	28 years	Low class	90 kgs	11-05-2023	12-05-2023	13-05-2023	G2P1L1	FT emergency LSCS	37 weeks 2 days	8.4 g/dl	828 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	01-06-2023	9.6 g/dl	1.2 g/dl
60	1196674	30 years	Low class	50 kgs	14-07-2023	17-07-2023	18-07-2023	Primigravida	FTND	39 weeks 1 day	9 g/dl	824 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	11-08-2023	10.2 g/dl	1.2 g/dl
61	1186412	28 years	Middle class	60 kgs	14-03-2023	17-03-2023	18-03-2023	Primigravida	FTND	39 weeks 2 days	9.2 g/dl	828 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	12-04-2023	10.8 g/dl	1.6 g/dl
62	1182741	20 years	Middle class	50 kgs	16-04-2023	16-04-2023	17-04-2023	G2P1D1	FT emergency LSCS	39 weeks 6 days	8.6 g/dl	908 mg	Yes	Inj FCM 500 mg in 100 ml NS x 1 dose	No	Nil	10-05-2023	9.4 g/dl	0.8 g/dl
63	1194418	29 years	Middle class	60 kgs	16-04-2023	16-04-2023	14-04-2023	G3P1L1A1	FTND	37 weeks 4 days	9.4 g/dl	740 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	17-05-2023	10 g/dl	0.6 g/dl
64	1195771	25 years	Middle class	60 kgs	10-06-2023	10-06-2023	11-06-2023	G3P2L2	FTND	38 weeks 2 days	9.8 g/dl	818.8 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	NIl	01-07-2023	10.4 g/dl	0.6 g/dl
65	1196090	22 years	Low class	62 kgs	09-06-2023	10-06-2023	11-06-2023	Primigravida	FT emergency LSCS	37 weeks 2 days	9.8 g/dl	830 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	01-07-2023	10.4 g/dl	0.6 g/dl
66	1196119	27 years	Middle class	68 kgs	10-06-2023	11-06-2023	12-06-2023	Primigravida	FTND	39 weeks	9.2 g/dl	840 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	01-07-2023	10.2 g/dl	1 g/dl
67	1196004	19 years	Middle class	68 kgs	10-06-2023	15-06-2023	16-06-2023	Primigravida	FTND	39 weeks 4 days	9.2 g/dl	832 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	11-07-2023	9.4 g/dl	0.2 g/dl
68	1196436	23 years	Middle class	70 kgs	10-06-2023	14-06-2023	15-06-2023	Primigravida	FTND	39 weeks 6 days	9.8 g/dl	819 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-07-2023	10.4 g/dl	0.6 g/dl
69	1196470	27 years	Low class	82 kgs	14-06-2023	17-06-2023	18-06-2023	Primigravida	FT emergency LSCS	39 weeks	9.2 g/dl	908 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	08-07-2023	10.2g/dl	1 g/dl
70	1196488	32 years	Middle class	80 kgs	15-06-2023	17-06-2023	18-06-2023	G3P2L2	FTND	39 weeks 2 days	9.4 g/dl	832 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	01-07-2023	10 g/dl	0.6 g/dl
71	1196392	28 years	Low class	60 kgs	17-06-2023	17-06-2023	18-06-2023	G2P1L1	FTND	39 weeks 1 day	9.8 g/dl	932 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	02-07-2023	10.4 g/dl	0.6 g/dl
72	1196303	30 years	Low class	60 kgs	14-06-2023	16-06-2023	17-06-2023	Primigravida	FTND	39 weeks	9.8 g/dl	728 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	02-07-2023	10.2 g/dl	0.4 g/dl
73	1196490	22 years	Low class	60 kgs	06-06-2023	10-06-2023	11-06-2023	G2P1L1	FT emergency LSCS	38 weeks 2 days	9.2 g/dl	832 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	01-07-2023	10.2 g/dl	1 g/dl
74	1203435	26 years	middle class	50 kgs	11-07-2023	17-07-2023	18-07-2023	G2P1L1	FT emergency LSCS	38 weeks	10 g/dl	644 mg	Yes	Inj FCM 500 mg in 100 ml NS x 1 dose	No	Nil	08-08-2023	11.2 g/dl	1.2 g/dl
75	1156821	30 years	Low class	62 kgs	14-03-2023	16-03-2023	17-03-2023	Primigravida	FTND	39 weeks 4 days	9.6 g/dl	828 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	01-04-2023	10.2 g/dl	0.6 g/dl
76	1182414	32 years	Low class	60 kgs	27-08-2023	30-08-2023	31-08-2023	Primigravida	FTND	40 weeks 4 days	10 g/dl	678 mg	Yes	Inj FCM 500 mg in 100 ml NS x 1 dose	No	Nil	21-09-2023	11.4 g/dl	1.4 g/dl
77	1000717	26 years	Middle class	60 kgs	30-10-2023	01-11-2023	02-11-2023	G2P1L1	FT emergency LSCS	37 weeks	10 g/dl	788 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	24-11-2023	10.8 g/dl	0.8 g/dl
78	1001718	21 years	Low class	60 kgs	27-11-2023	29-11-2023	30-11-2023	Primigravida	FTND	38 weeks 2 days	10 g/dl	788 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	21-12-2023	10.8 g/dl	0.8 g/dl

79	1195802	27 years	Middle class	55 kgs	13-06-2023	14-06-2023	15-07-2023	Primigravida	FT emergency LSCS	39 weeks 3 days	9.8 g/dl	790.4mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	05-07-2023	10.4 g/dl	0.6 g/dl
80	1104727	30 years	Low class	50 kgs	11-05-2023	13-05-2023	14-05-2023	G3P2L2	FTND	39 weeks	9 g/dl	860 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	06-06-2023	10 g/ dl	1 g/dl
81	1198078	28 years	Low class	50 kgs	13-06-2023	13-06-2023	14-06-2023	G2P1L1	FTND	38 weeks 4 days	9.4 g/dl	812 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	01-07-2023	10 g/dl	0.6 g/dl
82	1002367	30 years	Middle class	70 kgs	22-07-2023	22-07-2023	23-07-2023	G3P2L2	FTND	40 weeks	10 g/dl	836 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	14-08-2023	11 g/dl	1 g/dl
83	1008219	28 years	Low class	68 kgs	19-09-2023	19-09-2023	20-09-2023	G2P1L1	FT emergency LSCS	39 weeks 4 days	10.2 g/dl	793.76 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	12-10-2023	10.8 g/dl	0.6 g/dl
84	1001102	30 years	Middle class	42 kgs	17-08-2023	18-08-2023	19-08-2023	G2P1L1	FT emergency LSCS	37 weeks 2 days	10.2 g/dl	680 mg	Yes	Inj FCM 500 mg in 100 ml NS x 1 dose	No	Nil	09-09-2023	11.4 g/dl	1.2 g/dl
85	1007284	18 years	Low class	58 kgs	24-08-2023	24-08-2023	25-08-2023	Primigravida	FTND	39 weeks 2 days	10 g/dl	778 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	15-09-2023	10.8 g/dl	0.8 g/dl
86	1028417	24 years	Low class	50 kgs	20-09-2023	26-09-2023	27-09-2023	Primigravida	FTND	40 weeks 2 days	9 g/dl	860 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	17-10-2023	10 g/ dl	1 g/dl
87	1248007	28 years	High	60 kgs	30-09-2023	30-09-2023	01-10-2023	Primigravida	PTD	34 weeks 2 days	10.2 g/dl	759 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	22-10-2023	10.8 g/dl	0.6 g/dl
88	1082742	28 years	Low class	60 kgs	03-07-2023	07-07-2023	08-07-2023	G2P1L1	FT emergency LSCS	38 weeks 4 days	9 g/dl	932 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	28-07-2023	10.4 g/dl	1.4 g/dl
89	1082417	20 years	Middle class	82 kgs	10-04-2023	17-04-2023	18-04-2023	Primigravida	FT emergency LSCS	40 weeks	9.8 g/dl	938 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	08-05-2023	12.4 g/dl	2.6 g/dl
90	1008218	24 years	Middle class	86 kgs	16-08-2023	16-08-2023	17-08-2023	Primigravida	FTND	38 weeks 3 days	8.6 g/dl	1200 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	07-09-2023	10.2 g/dl	1.6 g/dl
91	1008241	27 years	Low class	83 kgs	11-03-2023	15-03-2023	16-03-2023	Primigravida	PTD	32 weeks 4 days	9.8 g/dl	1200 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	06-04-2023	10.4 g/dl	0.6 g/dl
92	1008412	28 years	Low class	92 kgs	11-02-2023	14-02-2023	14-02-2023	G2P1L1	FTND	39 weeks 2 days	8 g/dl	1400 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	08-03-2023	9.4 g/dl	1.4 g/dl
93	1174611	26 years	Middle class	72 kgs	01-03-2023	04-03-2023	05-03-2023	G2P1L1	FT emergency LSCS	38 weeks 2 days	10 g/dl	845 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	26-03-2023	11 g/dl	1 g/dl
94	1134218	30 years	Low class	70 kgs	30-01-2023	08-02-2023	09-02-2023	G2P1L1	FTND	38 weeks 1 day	9 g/dl	760 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	28-02-2023	10 g/ dl	1 g/dl
95	1003418	30 years	Low class	82 kgs	14-04-2023	14-04-2023	15-04-2023	G2P1L1	FTND	38 weeks 2 days	10 g/dl	980 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	06-05-2023	11 g/dl	1 g/dl
96	1012147	30 years	Middle class	62 kgs	01-12-2023	10-12-2023	11-12-2023	G3P2L2	FT emergency LSCS	39 weeks 2 days	8.8 g/dl	976 mg	Yes	No	1 pint PCV transfused	Nil	01-01-2024	10 g/ dl	1.2 g/dl
97	1178749	28 years	Low class	70 kgs	17-08-2023	17-08-2023	18-08-2023	G2P1L1	FT emergency LSCS	40 weeks	7 g/dl	1340 mg	Yes	No	2 pint PCV transfused	Chills, fever noted- Inj Avil and Inj Hydrocort given	09-09-2023	9.2 g/dl	2.2 g/dl
98	1008217	22 years	Middle class	68 kgs	01-08-2023	07-08-2023	08-08-2023	G2P1L1	FTND	40 weeks	9.2 g/dl	956 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	28-08-2023	10.2 g/dl	1 g/dl
99	1008271	19 years	Middle class	50 kgs	01-09-2023	10-09-2023	11-09-2023	G2P1L1	FTND	39 weeks 2 days	10.2 g/dl	716 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	01-10-2023	11.4 g/dl	1.2 g/dl
100	1196701	29 years	Low class	52 kgs	15-06-2023	22-06-2023	23-06-2023	G3P2L2	FTND	38 weeks 1 day	10.2 g/dl	642 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	13-07-2023	11 g/dl	0.8 g/dl
101	1196715	27 years	Middle class	72 kgs	19-06-2023	19-06-2023	20-06-2023	G3P2L2	PT Emergency LSCS	34 weeks 4 days	9.2 g/dl	990 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	11-07-2023	10 g/ dl	0.8 g/dl

102	1196612	21 years	Middle class	62 kgs	11-06-2023	19-06-2023	20-06-2023	Primigravida	FTND	38 weeks 6 days	10 g/dl	738 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	11-07-2023	11 g/dl	1 g/dl
103	1196794	20 years	Middle class	80 kgs	19-06-2023	19-06-2023	20-06-2023	G3P1L1A1	FTND	37 weeks 5 days	9.2 g/dl	1037 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	11-07-2023	10 g/ dl	0.8 g/dl
104	1191786	27 years	Low class	80 kgs	27-05-2023	27-05-2023	28-05-2023	G2P1L1	FTND	39 weeks 2 days	10.2 g/dl	924 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	18-06-2023	10.8 g/dl	0.6 g/dl
105	1192124	25 years	Low class	70 kgs	20-05-2023	29-05-2023	30-05-2023	G2P1L1	FTND	38 weeks 2 days	8.4 g/dl	1104 mg	Yes	No	1 pint PCV transfused	Nil	20-06-2023	9.6 g/dl	1.2 g/dl
106	1192205	26 years	Low class	72 kgs	22-05-2023	29-05-2023	30-05-2023	Primigravida	FT emergency LSCS	39 weeks 1 day	8.4 g/dl	1122 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	19-06-2023	9.8 g/dl	1.4 g/dl
107	1191818	24 years	Middle class	60 kgs	28-05-2023	28-05-2023	29-05-2023	Primigravida	FTND	39 weeks 4 days	9.4 g/dl	874.4 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	19-06-2023	11 g/dl	1.6 g/dl
108	1192752	23 years	Low class	60 kgs	01-06-2023	01-06-2023	02-06-2023	G3P2L2	FTND	37 weeks 2 days	9.2 g/dl	903.2 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	21-06-2023	10 g/ dl	0.8 g/dl
109	1192161	28 years	Low class	82 kgs	04-06-2023	04-06-2023	05-06-2023	G3P1L1A1	FT emergency LSCS	40 weeks 1 day	10.2 g/dl	854.2 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	29-06-2023	10.8 g/dl	0.6 g/dl
110	1105218	30 years	Low class	68 kgs	18-03-2023	18-03-2023	19-03-2023	G2P1L1	FT emergency LSCS	40 weeks 2 days	10.2 g/dl	793 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-04-2023	11.4 g/dl	1.2 g/dl
111	1194756	20 years	Low class	60 kgs	17-03-2023	17-03-2023	18-03-2023	Primigravida	FT emergency LSCS	39 weeks 2 days	10 g/dl	730 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	08-04-2023	11 g/dl	1 g/dl
112	1194871	20 years	Low class	50 kgs	01-04-2023	12-04-2023	13-04-2023	Primigravida	FT emergency LSCS	39 weeks 2 days	9.4 g/dl	812 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	03-05-2023	10.2 g/dl	0.8 g/dl
113	1120489	20 years	Middle class	54 kgs	18-03-2023	18-03-2023	19-03-2023	Primigravida	FT emergency LSCS	38 weeks 2 days	8.6 g/dl	940 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	09-04-2023	9.4 g/dl	0.8 g/dl
114	1000924	28 years	Low class	58 kgs	12-09-2023	12-09-2023	13-09-2023	Primigravida	FTND	40 weeks	9 g/dl	896 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-10-2023	10 g/dl	1 g/dl
115	1198421	30 years	Low class	60 kgs	16-04-2023	16-04-2023	17-04-2023	G2P1L1	FT emergency LSCS	39 weeks 2 days	9.8 g/dl	816 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-05-2023	10.2 g/dl	0.4 g/dl
116	1178902	28 years	Low class	60 kgs	13-04-2023	16-04-2023	17-04-2023	G3P1L1A1	FT emergency LSCS	40 weeks 1 day	10.2 g/dl	832 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-05-2023	11 g/dl	0.7 g/dl
117	1189845	22 years	Low class	60 kgs	27-06-2023	27-06-2023	28-06-2023	G3P1L1A1	FTND	39 weeks 2 days	9.4 g/dl	920 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	18-07-2023	10 g/ dl	0.6 g/dl
118	1190532	30 years	Low class	60 kgs	17-05-2023	18-05-2023	19-05-2023	G2P1L1	FT emergency LSCS	39 weeks 2 days	9.1 g/dl	917.6 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	09-06-2023	10 g/ dl	0.9 g/dl
119	1178121	25 years	Low class	60 kgs	15-05-2023	20-05-2023	21-05-2023	Primigravida	FTND	39 weeks 2 days	10 g/dl	774 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-06-2023	11 g/dl	1 g/dl
120	1178030	25 years	middle class	62 kgs	10-04-2023	16-04-2023	17-04-2023	G2P1L1	FTND	37 weeks 4 days	9.2 g/dl	916.64 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	09-05-2023	10 g/ dl	0.8 g/dl
121	1178622	24 years	Low class	60 kgs	15-06-2023	15-06-2023	16-06-2023	G3P1L1A1	FTND	39 weeks	9 g/dl	828 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	06-07-2023	10 g/ dl	1 g/dl
122	1189954	22 years	Low class	62 kgs	18-05-2023	21-05-2023	22-05-2023	G2P1L1	FTND	40 weeks 2 days	9.6 g/dl	858 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	12-06-2023	11 g/dl	1.4 g/dl
123	1108214	30 years	Low class	60 kgs	03-03-2023	03-03-2023	04-03-2023	Primigravida	FTND	39 weeks	10 g/dl	788 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	25-03-2023	10.8 g/dl	0.8 g/dl
124	1001247	34 years	Low class	60 kgs	16-04-2023	17-04-2023	18-04-2023	G4P3L3	FTND	39 weeks 2 days	8 g/dl	1076 mg	Yes	Inj Fe sucrose 200 mg x 5 doses	No	Nil	07-05-2023	9.8 g/dl	1.8 g/dl
125	1008218	27 years	Low class	70 kgs	01-08-2023	07-08-2023	08-08-2023	G3P1L1A1	FTND	37 weeks	8.1 g/dl	1165 mg	Yes	No	1 pint PCV transfused	Nil	31-08-2023	9.4 g/dl	1.3 g/dl
126	1008412	24 years	Middle class	50 kgs	06-06-2023	06-06-2023	07-06-2023	Primigravida	FTND	39 weeks 2 days	9.4 g/dl	912 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	30-06-2023	10.8 g/dl	1.4 g/dl

127	1108111	32 years	Low class	48 kgs	03-04-2023	03-04-2023	04-04-2023	G3P1L1A1	FT emergency LSCS	40 weeks	9 g/dl	845.6 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	25-04-2023	10 g/ dl	1 g/dl
128	1107877	29 years	Middle class	68 kgs	11-04-2023	16-04-2023	17-04-2023	G2P1L1	FTND	40 weeks	10.2 g/dl	793.76 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-05-2023	10.8 g/dl	0.6 g/dl
129	1005682	30 years	Middle class	80 kgs	04-07-2023	07-07-2023	08-07-2023	Primigravida	PTD	36 weeks 6 days	7.2 g/dl	1421 mg	Yes	No	1 pint PCV transfused	Nil	01-08-2023	8.4 g/dl	1.2 g/dl
130	1100569	30 years	Middle class	48 kgs	06-07-2023	06-07-2023	07-07-2023	Primigravida	FTND	37 weeks 4 days	9 g/dl	845.6 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	27-07-2023	10 g/ dl	1 g/dl
131	1204182	28 years	Middle class	60 kgs	01-12-2023	13-12-2023	13-12-2023	Primigravida	FT emergency LSCS	38 weeks	9.8 g/dl	816 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-01-2024	10.2 g/dl	0.4 g/dl
132	1178429	32 years	Middle class	70 kgs	01-08-2023	07-08-2023	08-08-2023	G2P1L1	FTND	40 weeks	8 g/dl	1172 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	30-08-2023	9.4 g/dl	1.4 g/dl
133	1168783	27 years	Middle class	68 kgs	04-02-2023	04-02-2023	05-02-2023	Primigravida	FT emergency LSCS	40 weeks	10.2 g/dl	793 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	25-02-2023	11 g/dl	0.8 g/dl
134	1000721	32 years	Middle class	60 kgs	12-09-2023	12-09-2023	13-09-2023	Primigravida	FTND	39 weeks 3 days	8.9 g/dl	946 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1 dose	No	Nil	04-10-2023	9.4 g/dl	0.5 g/dl
135	1000823	30 years	Middle class	50 kgs	08-09-2023	09-09-2023	10-09-2023	G2P1L1	FTND	37 weeks 4 days	9.9 g/dl	752 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	30-09-2023	10.4 g/dl	0.5 g/dl
136	1007842	28 years	Low class	60 kgs	11-09-2023	11-09-2023	12-09-2023	Primigravida	FTND	39 weeks 1 day	10.2 g/dl	1191.2 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	03-10-2023	11 g/dl	0.8 g/dl
137	1006421	30 years	Low class	59 kgs	13-02-2023	13-02-2023	14-02-2023	G2P1L1	FTND	38 weeks 2 days	10 g/dl	958 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	04-03-2023	11.4 g/dl	1.4 g/dl
138	1177781	28 years	Low class	81 kgs	11-03-2023	19-03-2023	20-03-2023	G2P1L1	FT emergency LSCS	38 weeks 2 days	8.2 g/dl	1400 mg	Yes	No	1 pint PCV transfused	Nil	09-04-2024	9.4 g/dl	1.2 g/dl
139	1177072	24 years	Low class	63 kgs	20-03-2023	25-03-2023	26-03-2023	Primigravida	FT emergency LSCS	37 weeks 1 day	10 g/dl	1100 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	15-04-2023	11 g/dl	1 g/dl
140	1081712	34 years	Low class	77 kgs	15-08-2023	17-08-2023	18-08-2023	G3P2L2	FTND	40 weeks 2 days	9.4 g/dl	1200 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	09-09-2023	11 g/dl	1.6 g/dl
141	1163339	19 years	Middle class	60 kgs	15-03-2023	16-03-2023	17-03-2023	G2P1L1	FTND	39 weeks 2 days	9.2 g/dl	903.2 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	07-04-2023	10.2 g/dl	1 g/dl
142	1160413	30 years	Low class	60 kgs	09-03-2023	09-03-2023	10-03-2023	G3P1L1A1	FT emergency LSCS	40 weeks 2 days	10 g/dl	730.4 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	30-03-2023	11 g/dl	1 g/dl
143	1182141	30 years	Middle class	62 kgs	01-03-2023	08-03-2023	09-03-2023	G2P1L1	FTND	40 weeks 2 days	10.2 g/dl	767.8 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	30-03-2023	10.8 g/dl	0.6 g/dl
144	1164821	30 years	Middle class	65 kgs	01-04-2023	07-04-2023	08-04-2023	Primigravida	FTND	39 weeks 2 days	9.4 g/dl	905.6 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	28-04-2023	10.8 g/dl	1.4 g/dl
145	1162727	32 years	Middle class	72 kgs	01-03-2023	07-03-2023	08-03-2023	G2P1L1	FTND	40 weeks 2 days	8.8 g/dl	1052.96 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	28-03-2023	9.7 g/dl	0.9 g/dl
146	1162843	29 years	Middle class	82 kgs	28-02-2023	07-03-2023	08-03-2023	G2P1L1	FTND	39 weeks	10.2 g/dl	814.88 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	28-03-2023	11 g/dl	0.8 g/dl
147	1162657	31 years	Low class	62 kgs	01-03-2023	05-03-2023	06-03-2023	G2P1L1	FTND	39 weeks 4 days	8.6 g/dl	708.32 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	26-03-2023	9.8 g/dl	1.2 g/dl
148	1162516	28 years	Low class	74 kgs	06-03-2023	06-03-2023	07-03-2023	Primigravida	FTND	40 weeks 2 days	10 g/dl	713.12 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	NIl	27-03-2023	11.4 g/dl	1.4 g/dl
149	1162444	25 years	Low class	62 kgs	01-03-2023	04-03-2023	05-03-2023	G2P1L1	FTND	40 weeks 1 day	9.2 g/dl	916.64 mg	Yes	Inj Fe sucrose 200 mg x 5 doses	No	Nil	25-03-2023	10.4 g/dl	1.2 g/dl
150	1161993	28 years	Low class	60 kgs	01-03-2023	16-03-2023	17-03-2023	Primigravida	FTND	39 weeks 2 days	10.2 g/dl	759.2 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	08-04-2023	11 g/dl	0.8 g/dl
151	1161991	19 years	Low class	68 kgs	01-03-2023	04-03-2023	05-03-2023	Primigravida	FT emergency LSCS	39 weeks 2 days	10 g/dl	826.4 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	27-03-2023	11 g/dl	1 g/dl

152	1163844	24 years	Middle class	68 kgs	15-04-2023	16-04-2023	17-04-2023	Primigravida	FTND	37 weeks	10.2 g/dl	793.76 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	08-05-2023	11.8 g/dl	1.6 g/dl
153	1164530	22 years	Low class	60 kgs	15-05-2023	17-05-2023	18-05-2023	G2P1L1	FTND	39 weeks 4 days	9.6 g/dl	845.6 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-06-2023	11 g/dl	1.4 g/dl
154	1164973	27 years	Low class	72 kgs	15-05-2023	17-05-2023	18-05-2023	G2P1L1	FTND	40 weeks	10 g/dl	764 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	07-06-2023	11 g/dl	1 g/dl
155	1165011	25 years	Middle class	50 kgs	01-06-2023	17-06-2023	18-06-2023	Primigravida	FTND	40 weeks 5 days	8 g/dl	980 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	08-07-2023	10 g/ dl	2 g/dl
156	1165338	24 years	Low class	80 kgs	01-06-2023	18-06-2023	19-06-2023	Primigravida	FTND	39 weeks 2 days	10.2 g/dl	845.6 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	10-07-2023	11 g/dl	0.8 g/dl
157	1166054	27 years	Low class	70 kgs	11-07-2023	19-07-2023	20-07-2023	G3P1L1A1	FTND	40 weeks 5 days	9.6 g/dl	903.2 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	07-08-2023	10.4 g/dl	0.8 g/dl
158	1166061	27 years	Low class	62 kgs	11-04-2023	16-04-2023	17-04-2023	Primigravida	FTND	39 weeks 4 days	10.2 g/dl	767.8 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-05-2023	10.8 g/dl	0.6 g/dl
159	1166055	25 years	Low class	60 kgs	01-04-2023	13-04-2023	14-04-2023	G2P1L1	FT emergency LSCS	39 weeks 4 days	9.8 g/dl	816.8 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	04-05-2023	10.6 g/dl	0.8 g/dl
160	1165975	26 years	Low class	52 kgs	01-07-2023	18-07-2023	19-07-2023	Primigravida	FT emergency LSCS	40 weeks 4 days	8.4 g/dl	949.28 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	08-08-2023	10 g/ dl	1.6 g/dl
161	1166151	23 years	Low class	48 kgs	01-03-2023	16-03-2023	17-03-2023	Primigravida	FTND	39 weeks 2 days	10 g/dl	730.4 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	06-04-2023	12 g/dl	2 g/dl
162	1166281	28 years	Low class	40 kgs	16-04-2023	16-04-2023	17-04-2023	Primigravida	FTND	39 weeks 3 days	8.6 g/dl	826.4 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-05-2023	10 g/ dl	1.4 g/dl
163	1166718	23 years	Low class	62 kgs	13-06-2023	18-06-2023	19-06-2023	Primigravida	FTND	40 weeks	9 g/dl	932 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	08-07-2023	10 g/ dl	1 g/dl
164	1167251	25 years	Middle class	60 kgs	06-08-2023	07-08-2023	08-08-2023	G2P1D1	FT Elective LSCS	37 weeks	10 g/dl	788 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	28-08-2023	11 g/dl	1 g/dl
165	1167224	24 years	Middle class	60 kgs	30-06-2023	01-07-2023	02-07-2023	Primigravida	FT emergency LSCS	40 weeks 2 days	9 g/dl	932 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	NIl	23-07-2023	10.2 g/dl	1.2 g/dl
166	1167273	21 years	Middle class	60 kgs	18-09-2023	19-09-2023	20-09-2023	Primigravida	FTND	39 weeks 4 days	9.6 g/dl	845.6 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-10-2023	11 g/dl	1.4 g/dl
167	1104215	28 years	Low class	88 kgs	18-08-2023	19-08-2023	20-08-2023	Primigravida	FTND	39 weeks 4 days	8.2 g/dl	1302 mg	Yes	No	1 pint PCV transfused	Nil	11-09-2023	9.8 g/dl	1.6 g/dl
168	1103921	30 years	Low class	60 kgs	10-03-2023	11-03-2023	12-03-2023	Primigravida	FTND	39 weeks 2 days	10.2 g/dl	759.2 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	01-04-2023	11 g/dl	0.8 g/dl
169	1208414	28 years	Middle class	69 kgs	18-02-2023	19-02-2023	20-02-2023	G2P1L1	PTD	36 weeks 6 days	9 g/dl	990 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	10-03-2023	10 g/ dl	1 g/dl
170	1208271	38 years	Low class	70 kgs	11-04-2023	13-04-2023	14-04-2023	G3P2L2	FTND	40 weeks 1 day	9 g/dl	1004 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	04-05-2023	10.2 g/dl	1.2 g/dl
171	1107979	28 years	Middle class	68 kgs	20-10-2023	21-10-2023	22-10-2023	G3P1L1A1	FTND	40 weeks 2 days	10 g/dl	761.12 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	13-11-2023	10.8 g/dl	0.8 g/dl
172	1108736	28 years	Middle class	48 kgs	18-03-2023	19-03-2023	20-03-2023	Primigravida	FT emergency LSCS	38 weeks 2 days	9.9 g/dl	741. 92 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	11-04-2023	11.6 g/dl	1.7 g/dl
173	1107319	36 years	Middle class	52 kgs	18-12-2023	19-12-2023	20-12-2023	G3P1L1A1	FTND	39 weeks 5 days	10 g/dl	749.6 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-01-2024	11 g/dl	1 g/dl
174	1204178	32 years	Low class	60 kgs	11-11-2023	19-11-2023	20-11-2023	G2P1L1	FTND	37 weeks 4 days	10.2 g/dl	759.2 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-12-2023	11 g/dl	0.8 g/dl
175	1108653	30 years	Low class	68 kgs	16-08-2023	17-08-2023	18-08-2023	Primigravida	FTND	40 weeks	10 g/dl	826.4 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	07-09-2023	11 g/dl	1 g/dl
176	1108498	21 years	Middle class	60 kgs	11-06-2023	15-06-2023	16-06-2023	Primigravida	FTND	40 weeks	9.8 g/dl	816.8 mg	Yes	Inj FCM 500 mg in 100 ml NS x 1 dose	No	Nil	06-07-2023	11.2 g/dl	1.4 g/dl

177	1206719	30 years	Middle class	60 kgs	16-02-2023	16-02-2023	17-02-2023	G3P2L2	FTND	38 weeks 4 days	10.2 g/dl	759.2 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	07-03-2023	11 g/dl	0.8 g/dl
178	1287413	30 years	Middle class	47 kgs	16-08-2023	16-08-2023	17-08-2023	Primigravida	PTD	36 weeks 4 days	10 g/dl	775.36 mg	Yes	Inj Fe sucrose 200 mgx 4 doses	No	Nil	07-09-2023	11.4 g/dl	1.4 g/dl
179	1207422	23 years	Low class	42 kgs	18-09-2023	18-09-2023	19-09-2023	Primigravida	FTND	40 weeks	10 g/dl	701.96 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-10-2023	11.4 g/dl	1.4 g/dl
180	1108422	32 years	Middle class	60 kgs	19-07-2023	19-07-2023	20-07-2023	G5P2L2A2	FTND	38 weeks 2 days	8.8 g/dl	960.8 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	10-08-2023	10 g/ dl	1.2 g/dl
181	1107419	30 years	Low class	45 kgs	19-07-2023	19-07-2023	20-07-2023	Primigravida	FTND	39 weeks 2 days	9.8 g/dl	629.6 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-08-2023	11.4 g/dl	1.6 g/dl
182	1204153	24 years	Low class	50 kgs	19-08-2023	19-08-2023	20-08-2023	Primigravida	FTND	39 weeks 4 days	10.2 g/dl	716 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-08-2023	11 g/dl	0.8 g/dl
183	1107320	30 years	Middle class	72 kgs	23-09-2023	24-09-2023	25-09-2023	G2P1L1	FT emergency LSCS	38 weeks 4 days	10 g/dl	707.36 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	16-10-2023	12 g/dl	2 g/dl
184	1134712	18 years	Middle class	60 kgs	29-10-2023	30-10-2023	31-10-2023	Primigravida	FTND	39 weeks	9.6 g/dl	845.6 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	21-11-2023	10.6 g/dl	1 g/dl
185	1208762	32 years	Low class	60 kgs	17-09-2023	18-09-2023	19-09-2023	G3P1L1A1	FTND	37 weeks 4 days	10 g/dl	788 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-10-2023	11 g/dl	1 g/dl
186	1183143	28 years	Middle class	58 kgs	18-04-2023	19-04-2023	20-04-2023	G2P1L1	FTND	40 weeks 2 days	9.2 g/dl	889.76 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-05-2023	10 g/ dl	0.8 g/dl
187	1207412	30 years	Low class	60 kgs	12-02-2023	16-02-2023	17-02-2023	G2P1L1	FTND	37 weeks 4 days	9.2 g/dl	903.2 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-Mar	10.6 g/dl	1.4 g/dl
188	1103412	30 years	Low class	62 kgs	20-09-2023	20-09-2023	21-09-2023	G2P1L1	FTND	40 weeks	9.8 g/dl	827.36 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	11-10-2023	12 g/dl	2.2 g/dl
189	1201182	19 years	Low class	70 kgs	10-10-2023	10-10-2023	11-10-2023	Primigravida	FTND	39 weeks 4 days	9.8 g/dl	869 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	01-11-2023	10.8 g/dl	1 g/dl
190	1201183	32 years	Middle class	52 kgs	22-07-2023	31-07-2023	01-08-2023	G3P2L2	FT emergency LSCS	39 weeks	9.2 g/dl	728 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	22-08-2023	10 g/ dl	0.8 g/dl
191	1204175	30 years	Middle class	72 kgs	16-04-2023	19-04-2023	20-04-2023	G2P1L1	FTND	39 weeks 2 days	9.8 g/dl	818 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-05-2023	10.8 g/dl	1 g/dl
192	1140218	20 years	Low class	70 kgs	11-05-2023	17-05-2023	18-05-2023	Primigravida	FT emergency LSCS	40 weeks 3 days	9.8 g/dl	988 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	07-06-2023	11 g/dl	1.2 g/dl
193	1204157	32 years	Low class	60 kgs	29-11-2023	30-11-2023	01-12-2023	G4P2L2A1	FTND	40 weeks	8.2 g/dl	692 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	23-12-2023	10 g/ dl	1.8 g/dl
194	1174121	21 years	Low class	60 kgs	12-09-2023	12-09-2023	13-09-2023	Primigravida	PTD	34 weeks 2 days	10.2 g/dl	816 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	04-10-2023	11 g/dl	0.8 g/dl
195	1187912	35 years	Low class	68 kgs	13-04-2023	16-04-2023	17-04-2023	G3P2L2	FTND	40 weeks	9.2 g/dl	967 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-05-2023	10 g/ dl	0.8 g/dl
196	1184124	28 years	Low class	60 kgs	13-02-2023	14-02-2023	15-02-2023	Primigravida	FTND	40 weeks 3 days	9.2 g/dl	646 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	05-03-2023	10.3 g/dl	1.1 g/dl
197	1134212	30 years	Middle class	60 kgs	08-12-2023	08-12-2023	09-12-2023	G2P1L1	FTND	40 weeks	9.2 g/dl	828 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	31-12-2023	10.7 g/dl	1.5 g/dl
198	1128742	22 years	Middle class	60 kgs	15-09-2023	17-09-2023	18-09-2023	Primigravida	FTND	39 weeks 4 days	9.8 g/dl	828 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	08-10-2023	11 g/dl	1.2 g/dl
199	1182741	24 years	Middle class	80 kgs	01-07-2023	08-07-2023	09-07-2023	G2A1	FTND	39 weeks 4 days	9.4 g/dl	1003.4 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	31-07-2023	10.6 g/dl	1.2 g/dl
200	1107492	24 years	Low class	60 kgs	13-03-2023	14-03-2023	15-03-2023	G3P1L1A1	FTND	39 weeks 2 days	9.8 g/dl	816 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	06-04-2023	12 g/dl	2.2 g/dl
201	1165380	24 years	Middle class	50 kgs	09-06-2023	10-06-2023	11-06-2023	G3P1L1A1	FTND	39 weeks 2 days	9 g/dl	860 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	02-07-2023	10.2 g/dl	1.2 g/dl

202	1152812	29 years	Low class	60 kgs	18-10-2023	19-10-2023	20-10-2023	G3A2	FTND	37 weeks 6 days	10.2 g/dl	759.2 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-11-2023	11 g/dl	0.8 g/dl
203	1160314	30 years	Middle class	70 kgs	01-03-2023	07-03-2023	08-03-2023	G3P2L2	FTND	39 weeks 4 days	10.2 g/dl	802.4 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	30-03-2023	11 g/dl	0.8 g/dl
204	1164513	30 years	Middle class	60 kgs	19-09-2023	19-09-2023	20-09-2023	Primigravida	FT emergency LSCS	40 weeks 2 days	9.8 g/dl	816.8 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	11-10-2023	10.7 g/dl	0.9 g/dl
205	1108914	38 years	Middle class	60 kgs	07-04-2023	07-04-2023	08-04-2023	Primigravida	PTD	36 weeks 4 days	10 g/dl	868.2 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	30-04-2023	11 g/dl	1 g/dl
206	1161982	32 years	Low class	86 kgs	12-06-2023	13-06-2023	14-06-2023	G4P2L2A1	FTND	37 weeks 4 days	10 g/dl	1013.2 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	03-07-2023	11.2 g/dl	1.2 g/dl
207	1165013	24 years	Middle class	72 kgs	17-08-2023	17-08-2023	18-08-2023	G2P1L1	FTND	38 weeks 2 days	9.2 g/dl	983.84 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	09-09-2023	10.3 g/dl	1.1 g/dl
208	1187412	19 years	Low class	60 kgs	07-06-2023	07-06-2023	08-06-2023	Primigravida	FTND	37 weeks 2 days	9.6 g/dl	862 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	30-06-2023	10.4 g/dl	0.8 g/dl
209	1206482	32 years	Middle class	79 kgs	08-06-2023	09-06-2023	10-06-2023	G4P1L1A2	FTND	39 weeks 2 days	10.2 g/dl	841.28 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	01-07-2023	11 g/dl	0.8 g/dl
210	1205841	34 years	Middle class	62 kgs	09-07-2023	10-07-2023	11-07-2023	G2P1L1	FT emergency LSCS	40 weeks	9 g/dl	946.4 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	01-08-2023	10.2 g/dl	1.2 g/dl
211	1206534	21 years	Middle class	50 kgs	19-08-2023	19-08-2023	20-08-2023	Primigravida	FT emergency LSCS	40 weeks 2 days	8.9 g/dl	872 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-09-2023	10 g/ dl	1.1 g/dl
212	1120113	31 years	Middle class	70 kgs	09-05-2023	09-05-2023	10-05-2023	G3P1L1A1	FTND	39 weeks 1 day	9 g/dl	1004 mg	Yes	Inj FCM 1 gm in 250 ml NS x 1	No	Nil	30-05-2023	10.2 g/dl	1.2 g/dl
213	1120839	30 years	Middle class	60 kgs	07-06-2023	10-06-2023	11-06-2023	G2P1L1	FTND	39 weeks 4 days	9.2 g/dl	762.4 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	01-07-2023	10 g/ dl	0.8 g/dl
214	1164158	32 years	Middle class	70 kgs	17-02-2023	17-02-2023	18-02-2023	G4P1L1A2	FTND	40 weeks 4 days	9.2 g/dl	892 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-03-2023	10 g/ dl	0.8 g/dl
215	1163147	35 years	Middle class	70 kgs	17-02-2023	17-02-2023	18-02-2023	G4P3L3	FTND	40 weeks 1 day	9 g/dl	904 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	10-03-2023	10 g/ dl	1 g/dl
216	1164124	20 years	Middle class	60 kgs	08-02-2023	09-02-2023	10-02-2023	Primigravida	FTND	40 weeks 1 day	10 g/dl	724 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	04-03-2023	11.6 g/dl	1.6 g/dl
217	1164312	19 years	Middle class	72 kgs	24-09-2023	24-09-2023	25-09-2023	G2P1L1	PTD	36 weeks 4 days	9.4 g/dl	920 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	15-10-2023	11.8 g/dl	2.4 g/dl
218	1165430	32 years	Middle class	82 kgs	19-07-2023	19-07-2023	20-07-2023	Primigravida	FTND	37 weeks 6 days	8.6 g/dl	1169 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	10-08-2023	10 g/ dl	1.4 g/dl
219	1208711	30 years	Low class	70 kgs	17-08-2023	17-08-2023	18-08-2023	G3P1L1A1	FTND	40 weeks 2 days	10 g/dl	728 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	08-09-2023	11 g/dl	1 g/dl
220	1108371	24 years	Middle class	70 kgs	03-12-2023	10-12-2023	11-12-2023	Primigravida	FTND	39 weeks 4 days	8.9 g/dl	1020 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	02-01-2024	10 g/ dl	1.1 g/dl
221	1160413	32 years	Low class	69 kgs	16-03-2023	17-03-2023	18-03-2023	G4P3L3	FTND	39 weeks 2 days	10.2 g/dl	692 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	07-04-2023	11 g/dl	0.8 g/dl
222	1208419	18 years	Low class	69 kgs	01-03-2023	03-03-2023	04-03-2023	Primigravida	FT emergency LSCS	39 weeks 1 day	10.2 g/dl	798.08 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	26-03-2023	11 g/dl	0.8 g/dl
223	1171498	19 years	Middle class	68 kgs	01-07-2023	07-07-2023	08-07-2023	Primigravida	FTND	39 weeks	9.6 g/dl	928 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	29-07-2023	10.2 g/dl	0.6 g/dl
224	1187413	30 years	Low class	68 kgs	01-10-2023	07-10-2023	08-10-2023	G2P1L1	FTND	40 weeks 2 days	10 g/dl	826 mg	Yes	Inj FCM 1 gm IV in 250 ml NS x 1 dose	No	Nil	29-10-2023	11 g/dl	1 g/dl
225	1201516	28 years	Low class	50 kgs	01-02-2023	07-02-2023	08-02-2023	G4P3L3	FTND	37 weeks 4 days	9 g/dl	860 mg	Yes	Inj Fe sucrose 200 mg x 4 doses	No	Nil	28-02-2023	10.8 g/dl	1.8 g/dl