

Safety and Efficacy of Intravenous Iron Therapy in Postnatal Patients with Iron Deficiency Anemia

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ABSTRACT

Objective: This prospective study was conducted to establish safety and efficacy of intravenous iron therapy in postnatal anemic patients.

Results: Around 217 anemic women were included in the study. Most of these patients (82.2%) were of 21 to 30 years of age having parity of 2 to 4 (53.9%). Almost 71% of patients had moderate anemia with Hb of 7 to 9 gm/dl. Around 208 patients (95.86%) required two to four injections of intravenous iron to build up Hb to optimum acceptable level. Only seven patients (3.22%) suffered from minor complications of local rash, while three (1.38%) had more severe allergic reactions but were managed successfully.

Conclusion: Intravenous iron is a safe and effective alternative in postnatal patients as it ensures iron therapy in low resource and noncompliant patients.

Keywords: Puerperium, Anemia, Intravenous iron.

INTRODUCTION

Anemia is a common medical disorder that contributes significantly to maternal morbidity and mortality, intrauterine growth retardation, preterm delivery, and perinatal morbidity and mortality.¹ The prevalence of iron deficiency anemia in pregnancy is 35 to 75% in developing countries and 18% in industrialized countries.²⁻⁴ The prevalence of postpartum anemia varies from 4 to 27%.⁵⁻⁷ Postpartum hemoglobin (Hb) levels of < 10 gm/dl are observed in up to 30% of women with more severe anemia (Hb < 8 gm/dl) seen in 10%.⁸

The symptoms of postpartum anemia vary and may include breathlessness, fatigue, palpitation, dizziness and infection; lactation failure and prolonged hospital stay depending upon the severity of blood loss and related anemia.⁹ Maternal iron deficiency anemia has also been shown to be strongly associated with depression, stress and cognitive function in the postpartum period,¹⁰ and may result in difficulty for the mother to care for her baby, thereby influencing the emotional mother-infant bond.

Most of the females in our community enter pregnancy with low hemoglobin, thus resulting in further fall in Hb postnatally. Inadequate antenatal care along with poor knowledge of dietary need of pregnant woman, and overall poor socioeconomic conditions are all responsible for this in our country.¹¹ Most of these patients are brought to the hospital during pregnancy or in labor. So, a patient who is anemic after delivery and

discharged without correction of anemia will be received in next pregnancy with further fall in Hb. Although, we advise oral iron therapy during puerperium, but most of our patients discontinue because of poor compliance, financial constraints and side effects. So, correction of anemia by giving injectable iron in postpartum period, before sending the patient to home, is a convenient and useful option.

OBJECTIVE

The aim of this study was to establish safety and efficacy of intravenous iron therapy (iron sucrose) in postnatal patients with iron deficiency anemia.

STUDY DESIGN AND DURATION

This was a single center prospective study conducted during the month of January 2007 to December 2007 in Gynecology Unit I and II, Jinnah Hospital, Lahore, Pakistan.

MATERIALS AND METHODS

Around 320 women with Hb < 9.5 gm/dl, 48 to 72 hours postpartum were included in this study initially. Their data were filled on a predesigned performa. Depending upon Hb deficit, two to six injections (1-3 doses) of parenteral iron were given on alternate days. Only 217 of these patients came for follow-up, so these patients were included in this study finally.

RESULTS

Although, study was started with 320 postpartum ladies but, because of their personal problems, 103 ladies could not come for repeated injections and follow-up Hb estimation, therefore 217 women were included in this study finally. All the women were hemodynamically stable at the time of inclusion into the study. Most of our patients were between 21 and 30 years of age, i.e. 178 (82%) and 23 (10.59%) were between 31 and 40 years (Table 1). Most of these patients, i.e. 117 (53.91%) were P2-P4, while 51 (23.50%) were P1 and 49 (22.58%) were > P4. Around 154 patients (70.96%) were having moderate anemia with Hb 7 to 9 gm/dl, 57 patients (26.26%) had Hb < 7 and only six patients (2.76%) had Hb > 9. The administration of two ampoules results in hemoglobin, which is equivalent to one unit of blood, therefore two injections (one dose) were given to raise Hb to 1%. Around three to four injections were given in 83 (38.24%) patients, two to three injections in 125 (57.60%) patients (Table 2). Response was seen by rise in Hb, which was > 3 gm/dl in 86 cases (39.63%), 1.5 to 2.9 in 123 patients (56.68%), and 0.5 to 1.4 gm/dl in 8 cases (3.68%). Very few complications were seen during this study (Table 3). Seven (3.22%) patients had local rash or phlebitis. Only three (1.38%) patients had anaphylactic reaction, which was diagnosed at an early stage and managed timely. Most of these patients had improvement in their symptoms like breathlessness, fatigue, palpitation, dizziness and feeling of well-being.

DISCUSSION

The puerperium is the time when the mother’s body is returning to its prepregnant stage. Although, it is a time of great importance for mother and baby, it is an aspect of maternity care that has received little attention. Mild postnatal anemia is common. However, determination of postnatal hemoglobin level or iron supplementation is not routine in many obstetric units.

Complications	No.	Percentage
Local rash/phlebitis	7	3.22
Anaphylactic reaction	3	1.38
No complications	207	95.39

In many patients, it may be a major cause of maternal morbidity and mortality.¹² Treatment of IDA (iron deficiency anemia) includes iron (oral and parenteral) and blood transfusion. However, most of these have their disadvantages. Orally administered iron is not always absorbed or well-tolerated because of gastrointestinal disturbances, and is slow acting requires long time (months) to reach target of Hb as compared with weeks required in the case of treatment with ISC¹³ (iron sucrose complex). Intravenously administered iron can cause anaphylactic shock, and all safeguards, such as hospital admission with resuscitation equipment available by the bedside. The use of correct techniques, and correct infusion rate as advised by the manufacturer, should be followed.⁴⁻¹⁵ Parenteral administration of iron is more expensive than oral administration. In addition to the cost of injections, the cost of medical training of doctors and nurses, construction of tertiary care facilities, and resuscitation equipment should also be factored into the cost of parenteral administration. When parenteral iron therapy causes adverse reactions and injection abscesses that result in hospital stays, the cost of parenteral therapy increases significantly. There is a risk of blood-borne diseases because of the use of recycled syringes and needles.¹⁶

CONCLUSION

Intravenous iron is a safe and effective alternate in postpartum anemic patients. It replenishes iron, stores more rapidly and ensures iron therapy in population with poor compliance. It is free from risks associated with blood transfusion.

Age (years)	No.	Percentage	Parity	No.	Percentage
< 20	9	4.14	P1	51	23.50
21-30	178	82.02	P2-P4	117	53.91
31-40	23	10.59	> P4	49	22.58
> 40	7	3.22			

Hb (gm/dl)	No.	Percentage	Dose 2 (inj/dose)	No.	Percentage	Rise in Hb (gm/dl)	No.	Percentage
< 7	57	26.26	3-4	83	38.24	> 3	86	39.63
7-9	154	70.96	2-3	125	57.60	1.5-2.9	123	56.68
> 9	6	2.76	1-2	9	4.14	0.5-1.4	8	3.68

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