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ASIAN JOURNAL OF SCIENCE AND TECHNOLOGY

ISSN: 0976-3376

Asian Journal of Science and Technology
Vol. 10, Issue, 04, pp.9618-9619, April, 2019

RESEARCH ARTICLE

INTRAVENOUS IRON TREATMENT IN PREGNANCY: FERRIC CARBOXYMALTOSE FOR CORRECTION OF IRON DEFICIENCY ANAEMIA

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ARTICLE INFO

Article History:
Received 12th January, 2019
Received in revised form
16th February, 2019
Accepted 20th March, 2019
Published online 30th April, 2019

Key words:
Anaemia, Intravenous Ferric Carboxy maltose, Pregnancy, Hb, Second and third trimester.

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ABSTRACT

Iron deficiency is the most common nutritional deficiency state of women in pregnancy. Iron deficiency anaemia (IDA) is associated with significant maternal, morbidity. Current options for treatment include oral iron supplements, which are poorly tolerated, and whole blood transfusion, which carries an inherent risk, should be avoided during pregnancy. Intravenous ferric carboxymaltose is a new treatment option. The study was designed to assess the safety and efficacy of intravenous ferric carboxymaltose for correction of IDA in pregnant women in second and third trimester. It was a prospective study where 50 anaemic pregnant women received Injection ferric carboxymaltose, as a total dose of 800-1000 mg in 2nd and 3rd trimester of pregnancy. Safety was assessed by analyzing adverse drug reactions. Ferric carboxy maltose significantly increased Hb level in all women in this study group. Increased Hb value was observed 3-4 weeks after infusion. No serious adverse effects were found and minor side effects occurred in patients. Our study revealed that the Hb level increased significantly, was well tolerated and without significant side effects.

***Citation: Dr. Divya J. Tekani and Dr. Hardipsinh Takhatsinh Parmar,* 2019.** "Intravenous iron treatment in pregnancy: Ferric carboxymaltose for correction of iron deficiency anaemia", *Asian Journal of Science and Technology*, 10, (04), 9618-9619.

INTRODUCTION

Iron deficiency is the most common deficiency disorder in the world, affecting, with pregnant women particularly more at risk. Anaemia in pregnant women is 14 percent in developed and 51 percent in developing countries, out of which 65-75 per cent in India. Half of the global maternal deaths due to anaemia occur in South Asian countries; India contributes to about 80 per cent of the maternal deaths due to anaemia in South Asia. The WHO (1972) defines anemia – regardless of its cause – as Haemoglobin (Hb) level of less than 11.0 g/dl during pregnancy and less than 10.0g/dl during the postpartum period Postpartum anaemia is result of both, deficiency during pregnancy and haemorrhage during delivery. It has been associated with depression, stress, anxiety, cognitive impairment, decreased mother-infant attachment, and infant developmental retardation. The routine management of iron deficiency anemia is oral supplementation. But even under the best of circumstances, oral iron is not well tolerated, and patients are often non-compliance for a variety of reasons, including intolerable side effects and the need for multiple daily doses. The frequently poor absorption of oral iron, moreover, can contribute to suboptimal patient response. Blood transfusion is reserved for more severe or symptomatic cases and is associated with numerous risks. Given the proven effectiveness as well as safety profile of IV iron, particularly of Iron Sucrose and FCM in a broad spectrum of diseases associated with IDA, the current paradigm of oral iron as first line therapy in moderate cases of postpartum anaemia should be reconsidered.

MATERIALS AND METHODS

This was a prospective study carried out in an obstetrics and gynecology department of C.U. Shah medical college, Surendranagar during July 2018 to December 2018. A total of 50 pregnant women with diagnosed Iron Deficiency Anemia were treated with intravenous ferric carboxymaltose. Informed written consent was taken from all patients & ethical clearance was taken from appropriate authority. All pregnant women in this group were in second trimester of pregnancy. They were screened for presence of anaemia. Here anaemia was defined by Hb level less than 10.5gm/dl. Further it was subdivided as 8-10.5gm/dl(mild), 6.5-8gm/dl (moderate) and <6.5gm/dl (severe). All women in this study group (n=50) were treated with intravenous ferric carboxymaltose as a single dose (800-1000mg) in an infusion time of 20minutes. Maternal pulse rate was recorded at every five minutes interval during infusion and fetal heart rate was assessed before and after the infusion. All patients were reassessed after 4 weeks clinically, by Hb level. Any adverse effect happened during infusion was recorded and a telephone interview was recorded after injection.

Exclusion criteria: Patients having kideny abnormalities and infection.

DISCUSSION

Iron deficiency anaemia is the most common cause of postpartum anaemia in India. It is due to preexisting iron deficiency, repeated pregnancy at short intervals, poor dietary intake, malaria and worm infestations. The aim for the treatment of anaemia is to improve the Hb level as well as to replenish the iron store. There are various modalities for the treatment like oral formulations and injectable iron preparations. Oral iron is preferred due to ease of administration, but the non-compliance and side effects make them unpopular. Parenteral iron therapy is expensive and invasive but helps to restore Hb and iron stores rapidly and efficiently. For moderate grade parenteral iron like Dextran used in past were associated with adverse reactions making them unsafe. Blood transfusion is associated with hazards, so the search for alternative is always welcomed. Inj FCM & inj. Fe Sucrose are better than IM preparation with less side effects. There are many studies which has been conducted to compare the efficacy and safety of oral iron(sulphate) with inj. Fe sucrose and Inj. FCM, but there are only few studies which has compared oral iron (ascorbate)with both inj FCM and inj Sucrose. In both the studies the age group of the cases are comparable to our studies.

Conclusion

Administration of ferric carboxymaltose for correction of IDA in second and third trimester of pregnancy is likely to be safe and effective and hemoglobin level increased significantly according to previous studies. In this study we also found, correction of IDA by single large dose of ferric carboxymaltose is significant. No serious adverse were observed in this study. Our findings suggested that corrections of anemia with ferric carboxy maltose before labour can reduce the maternal and neonatal morbidity significantly.

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