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**Original article:**

**Comparative study of iron supplements: Its efficacy and tolerability**

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**Abstract**

**Introduction:** Increased iron requirements to supply the expanding blood volume of the mother and the rapidly growing fetus and placenta can cause iron deficiency anemia.Plenty of oral iron formulations are available.A comparative study was planned to find out the best oral iron supplement for improving iron deficiency anemia in pregnant females as well as to compare their tolerability, as this ultimately influences the patient compliance and the therapeutic outcome. In present study, 2 conventional marketed formulation (ferrous sulphate, ferrous fumarate) are compared with a newer iron supplement (carbonyl iron) in the antenatal women for correction of anemia of pregnancy.

**Materials and methods:** 90 Pregnant women between 20 to 40 years of gestational age 14-20 weeks (judged by ultrasonographic and clinical inspection) and serum hemoglobin (Hb) levels between 9 - 11gm/dl were included to participate in study.3 groups of 30 participants each were formed. Group A participants received Carbonyl Iron formulation 100 mg once daily, Group B received ferrous sulphate 200 mg thrice daily and Group C received Ferrous fumarate 200 mg twice daily for a period of 2 months.

**Results:** Increase in Hb levels at the end of 2 months therapy was significant (p < 0.05) for all the 3 groups. Differences in the mean hemoglobin levels between the 3 groups at the end of therapy of 2 months showed statistically significant difference (p<0.05).However, no significant difference was found between the mean Hb values of patients receiving ferrous sulphate and ferrous fumarate (p>0.05) as compared to carbonyl iron receiving patients who had significant difference with other two groups.

**Conclusion:** Carbonyl iron is effective in the treatment of iron deficiency anemia in pregnant women as compared to the conventional iron formulations because of its superior efficacy in elevating haemoglobin levels as well as it is better tolerated than other iron formulations.

**Key Words:** Antenatal women, carbonyl iron, hemoglobin concentration, iron deficiency anemia