



## PRACTICE AND SIGNIFICANCE OF IRON FOLIC ACID SUPPLEMENTATION IN POST-PARTUM WOMEN ATTENDING A TERTIARY CARE HOSPITAL IN SOUTHERN RAJASTHAN

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**Financial Support:** None declared  
**Conflict of interest:** None declared  
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### How to cite this article:

Singhal YK, Fatehpuriya CM, Bhatnagar R, Jain R, Rajendran K, Kaushik PB. Practice and Significance of Iron Folic Acid Supplementation in Post-Partum Women Attending a Tertiary Care Hospital in Southern Rajasthan. Ntl J of Community Med 2015; 6(4):614-617.

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**Date of Submission:** 26-07-15

**Date of Acceptance:** 31-10-15

**Date of Publication:** 31-12-15

## ABSTRACT

**Background:** The objective of the current study was to overlook the real picture of Iron Folic acid supplementation by establishing a relationship between the practice of Iron Folic acid supplementation & the mean change in haemoglobin level antepartum and postpartum.

**Methods:** Two hundred and ninety pregnant women were interviewed using a structured questionnaire at 6 weeks postpartum. Women who had Haemoglobin report done between 36-38 week of gestation period and agreed for Haemoglobin estimation at 6<sup>th</sup> week postpartum were included in study. The data were fed into SPSS version 16.0 and analyzed. Mean haemoglobin concentrations during the antepartum and postpartum periods were compared using the paired t-test.

**Results:** The proportion of study subjects who were anemic at 36 weeks' gestation was 64.48% and at 6 weeks postpartum was 90.68%. The mean haemoglobin at 36-38 weeks' gestation was  $10.28 \pm 1.54$  g/dL and at 6 weeks postpartum was  $9.31 \pm 1.35$  g/dL. Women taking IFA in antepartum period were 75.51% while women taking IFA in postpartum period were 11.03% only. Total 85.38% women were dropout in using IFA supplementation.

**Conclusion:** Despite the better availability and coverage of maternal health facilities, attitude and practice towards IFA supplementation in postpartum women is significantly ignored.

**Keywords:** anemia, haemoglobin, postpartum, iron folic acid

## INTRODUCTION

Postpartum Anemia is a major cause of maternal morbidity, mortality and complication for future pregnancy worldwide.<sup>1</sup> Recent studies have reported that issue of postpartum iron deficiency and anemia are bigger than expected worldwide.<sup>2-7</sup> Postpartum anemia prevalence in developing countries ranges from 50% to 80%.<sup>8</sup> More than 70%

women in the postpartum period were found to be anemic in a survey from a north Indian village.<sup>9</sup> About 29.8% of women who were not previously anemic during pregnancy become anemic after delivery.<sup>10</sup> This estimates indicates postpartum anemia as a public health problem that requires greater attention.

Postpartum Anemia can lead to postnatal depression, delayed wound healing, urinary tract infections, increased susceptibility to ductitis and mastitis, Fatigue and exhaustion, Insufficient and reduced milk quality, low immunity.<sup>11,12,13</sup> In India, postpartum haemorrhage or anemia accounts for about 36% of the total maternal deaths.<sup>14</sup>

The objective of the current study was to overlook the real picture of Iron Folic acid supplementation by establishing a relation between the practice of Iron Folic acid supplementation & the mean change in hemoglobin level from 36-38 week's gestation to 6<sup>th</sup> weeks postpartum in postpartum women attending a tertiary care hospital of Udaipur, Rajasthan, India.

## METHODS

This was a cross sectional, interview based and facility based study of women who delivered in the Maharana Bhupal Government Hospital & came along with their children for 6<sup>th</sup> week vaccination. Haemoglobin levels of the pre-partum levels were taken from secondary data (records of mother). These Women were advised for Haemoglobin estimation at the time of interview. A 24 hour running central laboratory is located in the campus Maharana Bhupal Government Hospital which is providing free of cost investigation under Mukhyamantri Nishulka Jaanch Yojna to all patients.

Women who agreed for consent, women who have haemoglobin report between 36-38 week of gestation period and women who had agreed for Haemoglobin estimation at 6<sup>th</sup> week postpartum were included in the study. Women who have history of complication in pregnancy or delivery and women who have anemia of chronic illness or hemoglobinopathies were excluded from the study.

Assuming the prevalence of Anemia in the postpartum period is 58%, with a 95% confidence interval and absolute precision of 10% using the formula for infinite population, a sample size of 290 was obtained.

A semi-structured proforma was devised to collect the following components of information by interviewing the postpartum women: (1) Basic socio-demographic information (such as socioeconomic status, mode of delivery, outcome of delivery, parity, etc.). (2) Details of consumption of iron and folic acid tablets during antenatal and postnatal period. (3) Haemoglobin level at 36-38 week of gestation period. (4) Haemoglobin estimation at the time of interview.

### Operational definitions

1. Postpartum period was taken to be 6 weeks.

2. Hemoglobin% of 10-11 g/dl was considered as "mild", 6-<10 g/dl "moderate" and <6 g/dl as "severe" anemia.

After obtaining written informed consent the postpartum women were interviewed using a structured pretested questionnaire, when these women came to immunisation clinic along with their children for 6<sup>th</sup> week vaccination. These Women were advised for Hemoglobin estimation at the time of interview. Details including sociodemographic information, obstetric history, Haemoglobin level between 36-38 week of gestation period & details of consumption of iron and folic acid tablets during antenatal and postnatal period were collected.

The data were fed into SPSS version 16.0 and analyzed. The mean interval rise and fall in haemoglobin and the overall direction of change in haemoglobin were determined in the study population. Mean haemoglobin concentrations during the antepartum and postpartum periods were compared using the paired t-test. Changes in women classified as having a rise in haemoglobin after delivery and those who had a fall in haemoglobin were assessed separately.  $P < 0.05$  was considered to be significant.

## RESULTS

Two hundred and ninety pregnant women were included in the study. Mean haemoglobin at 36-38 weeks' gestation was  $(10.28 \pm 1.54 \text{ g/dL})$  and at 6 weeks postpartum was  $(9.31 \pm 1.35 \text{ g/dL})$ . The mean fall in haemoglobin between 36 weeks' gestation and 6 weeks postpartum was  $(0.97 \text{ g/dL})$  (95% CI, range 0.73-1.2,  $P < 0.001$ ). Rise in Haemoglobin was seen in 8.27% (24/290) of participants. The findings suggested that 74.03% (77/104) of women who were not anemic previously in antepartum period become anemic after delivery.

The women taking IFA in antepartum period were 75.51% (219/290) while only 11.03% (32/290) of women were taking IFA in postpartum period. Total 85.38% (187/219) of women were dropout in using IFA supplementation.

Mean haemoglobin in the women taking IFA in antepartum was  $(10.88 \pm 1.14 \text{ g/dL})$  and at postpartum was  $(12.72 \pm 1.60 \text{ g/dL})$ . The mean fall of  $(0.8 \text{ g/dL})$  in haemoglobin was observed in women not taking IFA in postpartum while mean rise of  $(1.84 \text{ g/dL})$  in haemoglobin was observed in women who were taking IFA in postpartum. Women on traditional diet in postpartum period had less fall in Haemoglobin level while who are not on traditional diet had significant fall in haemoglobin level.

Women on IFA and traditional diet both were 5.86% (17/290) and had a mean rise of 1.15 g/dl in

haemoglobin level. Proportion of women on traditional diet but not on IFA was 51.72% (150/290) and had a mean fall of 0.97 g/dl in haemoglobin level while proportion of women not on both IFA and traditional diet was 37.24% (108/290) had a mean fall of 1.44 g/dl in haemoglobin level.

In response of reason of not taking IFA, 64.82% (188/290) said they didn't take IFA by their own wish, 8.96% (26/290) of women said they were not informed or counselled effectively by health professionals and 26.20% (76/290) of women said they have poor compliance in the antepartum period.

Women of low socioeconomic status had antepartum anemia were 39.6% (115/290) while 50.3% (146/290) had anemia in postpartum period. Women of upper socioeconomic status had antepartum anemia were 24.5% (71/290) while 40.3% (117/290) had anemia in postpartum period.

Non-anemic women of low socioeconomic status in antepartum period were 24.34% (37/152) among them 83.78% (31/37) became anemic after delivery while non-anemic women of average socioeconomic status in antepartum period were 48.55% (67/138) among them 68.65% (46/67) became anemic after delivery. It reflected that women of low socioeconomic status had more chances of developing anemia in postpartum.

Women of rural background with antepartum anemia were 32.06% (93/290) while 48.27% (140/290) had developed anemia in postpartum. Women of urban background with antepartum anemia were 32.06% (93/290) while who had developed postpartum anemia were 42.41% (123/290).

About twenty seven percent (78/290) women delivered their baby by caesarean and they had mean haemoglobin level of (10.41±1.35 g/dL) and (9.72±1.35 g/dL) in antepartum and postpartum period respectively, a mean fall in haemoglobin of (0.69 g/dL, range 0.5-0.9,  $p < 0.001$ ).

Women classified as having anemia in third trimester were 64.48% (187/290) while 90.68% (263/290) of women were classified as having anemia at 6 week postpartum. The proportion of women who were mild, moderate and severe anemic at 36-38 weeks' gestation was 22.06% (64/290), 42.06% (122/290) and 0.34% (1/290) respectively. At 6 weeks postpartum, proportion of women who were mild, moderate and severe anemic was 24.48% (71/290), 65.86% (191/290) and 0.34% (1/290) respectively.

## DISCUSSION

This study highlights anemia in postpartum period as a public health problem significantly. It also identified the paucity of awareness regarding IFA supplementation in postpartum women. The mean fall in hemoglobin at 6 weeks postpartum from the value at 36 weeks' gestation was 0.97 g/dL (0.1-3.5) in our study population.

Postpartum anemia is due to excessive blood loss during and after delivery and due to inadequate production of red blood cells in postpartum period, which could be due to depleted iron reserve. So IFA supplementation in this period is essential for erythropoiesis.

IFA supplementation in pregnant women has been emphasized in ANC visits routinely but IFA supplementation in postpartum women is not effectively advised and monitored due to irregular PNC visits and casual approach of patients for follow-up after delivery.

Antepartum anemia is also an established risk factor for postpartum anemia as proven by several other studies.<sup>15,16</sup> World Health Organization recommends 3 months IFA supplementation among the postpartum women in anemia prevalent areas<sup>17</sup>. The American Congress of Obstetricians and Gynaecologists', the Institute of Medicine and the Centers for Disease Control and Prevention have guidelines for the control and prevention of anemia in postpartum period<sup>18,19,20</sup>. However, there are no clear-cut guidelines to deal with this problem in India. The number of postpartum visits appears inadequate and ineffective. Health workers should be trained to identify the clinical features of anemia during postpartum visits and they should understand the problem of postpartum anemia in community.

## CONCLUSION

Postpartum anemia is a significant public health problem, and the fall in haemoglobin in postnatal period was justifying the IFA supplementation practice in our study population. Despite the better availability and coverage of maternal health facilities, attitude and practice towards IFA supplementation in PNC women is significantly ignored.

## RECOMMENDATION

To overcome the situation, proper counselling by health professionals, PNC visits at home by health workers and compulsory PNC visit at the time of vaccination of child can be introduced. Anemia in postpartum period is itself a risk factor for next pregnancy so to deal with this situation by extensive measures.

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