Impact of Interventional Package during Pregnancy on Low Birth Weight and Foetal Distress in Anaemic Pregnant Women

Jeelani Saima Habeeb * and Marfa Banoo

Obstetrics and Gynaecological Nursing

*Corresponding author
Jeelani Saima Habeeb, Department of Obstetrics and Gynaecological Nursing, Baba Ghulam Shah Badshah University Rajouri, Jammu and Kashmir; E-mail: saimahabeeb786@gmail.com

Abstract

Anaemia is a common complication associated with pregnancy which threatens the life of a woman and her unborn baby. Studies have revealed higher incidence of haemorrhages, infections, early labour and reduced birth weight of baby who are prone to neonatal morbidity and mortality. Therefore the present study using quasi-experimental time series design was conducted at 16 weeks of gestation till Ist week of delivery on 66 anaemic pregnant women in a selected hospital of Kashmir (J&K, India) to determine the effectiveness of interventional package on their pregnancy outcome in order to have better pregnancy outcome. The study revealed a significant difference in pregnancy outcome of anaemic pregnant women.

Methodology: A quasi experimental research approach with time series design was adopted.

Results: The findings indicated that interventional package improved pregnancy outcome in anaemic pregnant women.

Finding of study reveals that Implementation of interventional package was found to be effective in improving pregnancy outcome in anaemic pregnant women.

Keywords: Anaemia in pregnancy, Pregnancy outcome, Interventional package

Introduction

Iron deficiency Anaemia (IDA), a common complication associated with pregnancy causes a major health concern in developing world due to maternal mortality. According to WHO around 5, 00,000 maternal deaths per year and 20,000,000 morbidity cases per year are attributed to iron deficiency anaemia [1]. In India, the prevalence of iron deficiency anaemia (IDA) is perhaps highest in the world and includes 50% adult women and 80% pregnant women [2,3].

According to a standard laid down by WHO, anaemia in pregnancy is present when the haemoglobin concentration in peripheral blood is 11g% or less. However, because of haemodilution and socio-economic deprivation in developing countries, the level is brought down to 10g%. Kalaivani et al., reported that major factors responsible for anaemia in India included inadequate dietary iron, folate, low vegetable consumption, low vitamin B12 intake and poor bioavailability of dietary iron from fibre [4]. Indian diets are found responsible for high prevalence of anaemia and causes 40% of maternal deaths. A doubling of low birth weight rate and 2-3 fold increase in the perinatal mortality rates is seen when haemoglobin

is less than 8g/dl. There is 8-10 fold increase in maternal mortality rate when haemoglobin falls below 5g/dl. Maternal anaemia is also associated with poor intra uterine growth of fetus and increased risk of preterm birth and low birth weight rates which is an independent risk factor for neonatal deaths, because lower the weight at birth, higher the neonatal deaths [5].

Pregnancy is an especially good time to promote good nutrition, since most expectant women are highly motivated to change poor eating habits. Dietary advises during pregnancy should focus on improving the quality of woman's overall dietary intake. The effects of under-nutrition on fetal development should be pointed out to the mother. Much valuable information can be given by providing women with written pamphlets (information). According to National Academy of Sciences good maternal nutrition and the importance of promoting healthful eating practices during pregnancy is utmost important to improve birth weight of baby by improving maternal weight and fetal growth [6-8].

Materials and Methods

A quasi experimental research approach with time series design was used to study 66 pregnant anaemic women at antenatal clinic (ANC), labour room and postnatal wards of Govt. Maternity Hospital

Anantnag. The interview-schedule was used to collect data about socio-demographic characteristics, clinical profile and nutritional status; assessment proforma and observation checklist was used to assess pregnancy outcome. Intervention package consisted of information about low birth weight (audio-visual supported), antenatal and dietary advises and information booklet. Instruments like weighing machine, fetoscope, measuring tape were also used while conducting physical and antenatal examination.

The initial/baseline assessment was done 16 weeks of gestation. Intervention was administered systematically during 16th weeks of gestation by providing information about low birth weight and preterm birth (audio-visual supported), giving antenatal and dietary counselling, and providing information booklet. Each woman was provided with Self Care Activity Compliance Checklist and was advised to fill it up when she performs any activity. Subjects were observed for maternal outcome by monthly observation and assessment at 24th, 28th, 32nd and 36th weeks of gestation; and neonatal outcome during intrapartum period and within 24 hours of delivery.

Results
The mean age of subjects was 26.32±4.40 years. Majority of subjects (57.58%) belonged to age group of 20-30 years. Maximum numbers of subjects belonged to middle socio economic class, had moderate exposure to smoke, average nutritional status, no living child and were primigravida.

Table 1: Comparison between Experimental Group and Control Group in Terms of Subject's Body Weight (Kg) at Various Weeks of Gestation N=66

Maternal parameters	Experimental Group (N = 66) Mean ± SD	P-Value
Body weight in Kg		
At 16 weeks	54.59±8.70	0.051
At 24 weeks	57.68±8.84	0.027*
At 28 weeks	59.50±8.93	0.019*
At 32 weeks	61.25±8.95	0.018*
At 36 weeks	63.15±9.08	0.001**
Haemoglobin g%		
At 16 weeks	8.13±1.04	0.0251*
At 24 weeks	8.72±1.00	0.001**
At 28 weeks	9.41±0.89	0.001**
At 32 weeks	9.99±0.91	0.001**
At 36 weeks	10.5±0.91	0.001**
Fundal Height in cm	16.69±0.96	0.9531
At 16 weeks	23.57±1.62	0.9723
At 24 weeks	28.36±0.90	0.4391
At 28 weeks	32.9±0.83	0.4085
At 32 weeks	35.71±0.45	0.384
Fetal Heart Rate (bpm)		
At 16 weeks	141.88±2.13	0.014*
At 24 weeks	142.27±1.64	0.8107
At 28 weeks	142±1.64	0.9192
At 32 weeks	141.67±1.80	0.7885
At 36 weeks	142.58±5.85	0.001**
Presence of Fetal Movements		
At 24 Weeks	66 (100%)	1.000
At 28 Weeks	66 (100%)	1.000
At 32 Weeks	66 (100%)	0.4345
At 36 Weeks	66 (100%)	1.000

**significant at 0.01 level   * significant at 0.05 level

Data presented in Table 1 indicates that the mean weight at 16 weeks of gestation did not show any significant difference. The mean weight from 24-36 weeks of gestation was found higher i.e., (X=57.68 ± 8.84 to 63.15 ± 9.08). The mean haemoglobin level from 24-36 weeks of gestation was found to be higher i.e., (X=8.13 ± 1.04 to 10.5 ± 0.91) 't' value was statistically significant indicating that the intervention was effective. The mean fundal height from 16-36 weeks of gestation did not show any significant difference; the mean fetal heart rate varied at various weeks but was within normal limits. Fetal movements were present in all the subjects.

Findings have indicated significant association (p<0.05) of:
* Low gain in weight with age group of 20-30 years.
* Good gain in weight with good nutritional status.
* Mode of delivery with socio-economic status.
* Birth status with socio-economic status.
* Gestational age with socio-economic status and gravidity.
* Birth weight with gravidity.
* Early neonatal condition with nutritional status

Conclusion
The burden of nutritional anaemia in pregnant population is alarmingly high. Severe maternal anaemia is associated with preterm birth, low birth weight and small for gestational age infants, as well as low APGAR score and high perinatal mortality. The findings revealed the highest association of gain in weight in subjects with good nutritional status and good maternal status during pregnancy in subjects from middle socio economic status. Thus interventional package during pregnancy is essential aspect to improve pregnancy outcome. Primigravida subjects delivered more full term babies than multigravida subjects and second gravida was significantly associated with low birth weight which indicates that high parity leads to delivery of baby who is preterm and has low birth weight. It is found that supplementations lonely do not improve the birth outcome but should be supported with verbal information, discussion, and written information. It indicates that nurses are not able to address to the problems of high risk group of women in highly crowded antenatal clinics and cannot counsel them, which may be probably due to posting of one staff nurse in antenatal clinic who remains busy in immunizing and giving iron infusions.

References
1. World Health Organization (2002) Making pregnancy safer. Biennial report 2000-2001. Geneva: WHO.
2. Mother care: prevalence of maternal anaemia in developing countries. Arlington: 1992.
3. Kuklina KR (2011) Prevalence of anaemia among women in community health centre, Bengalkot. Asian J of Obs and Gynae Practice.
4. Kalaivani K (2009) Prevalence and consequences of anaemia

in pregnancy. Ind J of Medical Research 130: 5.

5. Neville Hacker, J George Moore, Joseph Gambone (2004) Essentials of obstetrics and gynaecology. 4th ed. New Delhi.

6. Amin Sugra and Imtiayaz Ali (2001) Influence of various epidemiological correlates on nutritional status of pregnant women. JK Practitioner 8: 33-36.

7. Ali Imtiyaz et al. Pregnancy weight gain in relation to various socio-medical factors and perinatal outcome. JK Practitioner. May June, 2009;9: 106-109.

8. National Academy of Sciences. Institute of Medicine' Nutrition during pregnancy.