EFFECT OF BIRTH INTERVAL AND ABORTION STATUS ON ANEAMIA AMONG PREGNANT WOMEN: AN URBAN AND RURAL COMPARATIVE STUDY

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ABSTRACT

Background: Anaemia is one of the important factors which decide the outcome of pregnancy. Worldwide, it is estimated that anaemia contributes to 20% of maternal deaths. Among these; about half of the global maternal deaths occur in South Asian countries out of which 80% is contributed by India. This study is planned to study the relationship between anaemic status with abortion and birth interval. **Material & Methods**: Cross sectional study conducted during the period of July 2016 to December 2016. 200 Pregnant women were selected from by simple random sampling 100 from rural area and 100 from urban area.The data were collected by interview with each pregnant woman after taking the proper consent, in a predesigned, pretested, multiple response type questionnaire.**Results:** In present study the prevalence of severe anaemia was more among pregnant women who had birth interval of less than two years in rural areas i.e. 20% (p value < 0.001). Majority of pregnant women who had nil or one abortion before had no anaemia in both urban and rural areas (38.2%, 37.5%) and (21.5%, 33.3%) respectively and prevalence of severe anaemia was more among pregnant women who had two abortions before in rural areas i.e. 33.3% (p value < 0.001).**Conclusions:** This study reveals a highly significant association of anemic status with abortion status and birth interval among pregnant women. Public health education has to be a cornerstone for the successful national campaign to prevent, detect, evaluate, and treat anemia among pregnant women.

Key words: anaemia, pregnancy, abortion, birth interval.

INTRODUCTION:

Anaemia is derived from Greek word an- 'not', haima- 'blood', meaning 'no blood'. Anaemia is not a disease by itself but merely an objective sign of the presence of disease. Anaemia during pregnancy is a major public health problem throughout the world, particularly the developing countries. Women during pregnancy are more vulnerable for anaemia not only because of the synergistic effects of physiological increase in plasma volume (haemodilution) but also because of increased demand and poor bioavailability of iron.**(1)**

Anaemia is one of the important factors which decide the outcome of pregnancy. It is a silent epidemic, as compelling and harmful as Epidemics of infectious diseases. Worldwide, it

is estimated that anaemia contributes to 20% of maternal deaths.**(2)** Among these; about half of the global maternal deaths occur in South Asian countries out of which 80% is contributed by India.**(3)** There is a greater risk of reproductive morbidity and mortality such as abortion, still birth, low birth weight baby, high perinatal mortality, infant mortality, postpartum haemorrhage, undercurrent infection and maternal mortality.**(4)**

Regarding this context of combating anaemia during pregnancy, with far reaching benefits in terms of safe motherhood and healthier future generations, an attempt has been made to know the magnitude of anaemia among urban and rural pregnant women along with to study the relationship between anaemia and contributory factors birth interval and abortion status to meet the challenge of protecting maternal and neonatal health.

MATERIAL & METHODS

The present study was carried out in SRG hospital, Jhalawar medical college, Jhalawar (Rajasthan) during the period of July 2016 to December 2016. 200 Pregnant women of present study were selected from outdoor, antenatal clinic and from ward by simple random sampling 100 from rural area and 100 from urban area. Sample size calculated by the use of Epi Info v7.

The data were collected by interview with each pregnant woman (above 18 years of age and beyond 12 weeks of amenorrhea) after taking the proper consent, in a predesigned, pretested, multiple response type of questionnaire designed for the study. The questionnaire was address on the topics of anaemia, study variable on the contributory factors were age, gravida, parity, birth intervals and abortions. The data were analyzed using MS Excel 2010 and SPSS v22.

RESULT

In the present study the majority of pregnant women who were primigravida, parity status of para 0 means no birth interval had no anaemia in both urban and rural areas 59.7% and 47.8% respectively. The prevalence Moderate anaemia was more among pregnant women had birth interval of more than two years in both urban and rural areas 72.7% and 54.2% respectively. Mild anaemia was more among pregnant women who had birth interval of less than two years in urban area (68.7%) and had birth interval of more than two years in rural areas (45.8%). Prevalence of severe anaemia was more among pregnant women who had birth interval of less than two years in rural areas i.e. 20%. This difference was statistically highly significant (p value < 0.001). [Table 1]

In the present study majority of pregnant women who had nil or one abortion before had no anaemia in both urban and rural areas (38.2%, 37.5%) and (21.5%, 33.3%) respectively. Mild anaemia was more among pregnant women had no abortion before both urban and rural areas 37.1% and 39.8% respectively. Moderate anaemia was more among pregnant women who had two abortions before in urban area and had one abortion before in rural areas. Prevalence of severe anaemia was more among pregnant women who had two abortions before in rural areas i.e. 33.3%. This difference was statistically significant (p value < 0.05). [Table 2]

Table 1: Relationship between birth interval and severity of anaemia among urban and rural pregnant women

Birth interval (years)	Severity								
	No anaemia		Mild anaemia		Moderate anaemia		Severe anaemia		Total
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	
None	37	22	19	17	6	7	0	0	108
	(59.7%)	(47.8%)	(30.6%)	(37%)	(9.7%)	(15.2%)	(0%)	(0%)	(100%)
<2	0	0	11	10	5	14	0	6	46
	(0%)	(0%)	(68.7%)	(33.3%)	(31.2%)	(46.6%)	(0%)	(20%)	(100%)
>2	0	0	5	11	16	13	1	0	46
	(0%)	(0%)	(22.7%)	(45.8%)	(72.7%)	(54.2%)	(4.5%)	(0%)	(100%)
Total	37	22	35	38	27	34	1	6	200
	(37%)	(22%)	(35%)	(38%)	(27%)	(34%)	(1%)	(6%)	(100%)

Urban (χ^2 = 41.750, p < 0.001); Rural (χ^2 = 49.458, p < 0.001)

Table 2: Relationship between abortions and severity of anaemia among urban and rural pregnant women

Abortion	Severity								
	No anaemia		Mild anaemia		Moderate anaemia		Severe anaemia		Total
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	
Nil	34	20	33	37	22	31	0	5	182
	(38.2%)	(21.5%)	(37.1%)	(39.8%)	(24.7%)	(33.3%)	(0%)	(5.4%)	(100%)
1	3	2	2	1	3	3	0	0	14
	(37.5%)	(33.3%)	(25%)	(16.7%)	(37.5%)	(50%)	(0%)	(0%)	(100%)
2	0	0	0	0	2	0	0	1	3
	(0%)	(0%)	(0%)	(0%)	(66.7%)	(0%)	(0%)	(33.3%)	(100%)
>2	0	0	0	0	0	0	1	0	1
	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(100%)	(0%)	(100%)
Total	37	22	35	38	27	34	1	6	200
	(37%)	(22%)	(35%)	(38%)	(27%)	(34%)	(1%)	(6%)	(100%)

Urban (χ^2 = 106.249, p < 0.001); Rural (χ^2 = 17.708, p = 0.007)

DISCUSSION

The present study was conducted in the field practicing areas under SRG hospital, Jhalawar

medical college, Jhalawar (Rajasthan) to assess the magnitude of anaemia along with its contributory factors birth interval and abortion status and their comparison among urban and rural pregnant women. This study was conducted among 200 pregnant women out of them 100 belonged to urban area and 100 to rural area.

Their age varied from 19 to 38 years. The mean age of the study subjects was 24.88 ± 3.45 years. There were no teenage pregnant women as they were excluded from the study. In the present study the prevalence of anaemia was more in the rural areas (77%) as compared to that of the urban areas (62%) and difference in the prevalence of anaemia was significant ($p < 0.05$) Odds of anaemia was 1.58 times more in rural than urban pregnant mothers. Which were nearly similar to surveys of India by National Family Health Survey (NFHS-3), District Level Household Survey (DLHS-3).**(5)(6)** The results were also similar to study conducted by Toral M. Goswami et al in 2014 on Maternal anaemia during pregnancy and its impact on perinatal outcome.**(7)**

In the present study, the prevalence Moderate anaemia was more among pregnant women had birth interval of more than two years in both urban and rural areas 72.7% and 54.2% respectively. Prevalence of severe anaemia was more among pregnant women who had birth interval of less than two years in rural areas i.e. 20%. This difference was statistically highly significant (p value < 0.001).Our findings were comparable to the study conducted by Abbasi RM et al showed that the prevalence of anaemia was found statistically significant with birth interval between 1 to 3 years.**(8)**

Similar results were found in studies conducted by Vijay Kumar et al in 2014 on status of anaemia in pregnant women at ranchi that a

statistically significant association of anaemia (p < 0.05) was found with birth interval from last birth.**(9)** However these findings were contradictory with study conducted by Gautam VP et al in 2002 at rural areas of Delhi showed that the overall prevalence of anaemia was found not statistically significant with birth interval.**(10)**

In our study it was found that moderate anaemia was more among pregnant women who had two abortions before in urban area and had one abortion before in rural areas. Prevalence of severe anaemia was more among pregnant women who had two abortions before in rural areas i.e. 33.3%. This difference was statistically significant (p value < 0.05). Similar results were found in study conducted by RG Viveki et al in 2012 on Prevalence of Anaemia and Its Epidemiological Determinants in Pregnant Women at Karnataka showed that significant association of the prevalence of anaemia and its severity with parity status of with two or more abortions. **(11)** However these findings were contradictory with study conducted by Gautam VP et al in 2002 on Prevalence of anaemia amongst pregnant women and its socio-demographic associates in a rural area of Delhi showed that the overall prevalence of anaemia was found not statistically significant with number of abortions.**(10)**

In present study magnitude of anaemia had been based only on a single occasion measurement of haemoglobin and also results of the present study cannot be generalized to the population of India even though the study was done using appropriate sample size estimation due to differences in socio-economic variables, literacy level, dietary habits and cultural practices existing in the country.

CONCLUSION

This study reveals a majority of pregnant of were anaemic and more numbers are in rural population this difference was found statistically significant. We draw the inference that severity of anaemia was more in women who had more abortions and lesser birth interval. Public health education has to be a cornerstone for the successful national campaign to prevent, detect, evaluate, and treat anemia among pregnant women.

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