Prevalence and Determinants of Anemia in Pregnancy at Private Hospital Of Bareilly District

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Abstracts: Back ground: Anemia in pregnancy continues to be the major public health problem in the world & is the commonest medical disorder in pregnancy that has a varied prevalence, etiology and degree of severity in different populations. Objective: To find out the prevalence of anemia amongst pregnant women and socio-demographic factors associated with anemia in pregnancy. Methods: The present cross sectional study was carried out in obstetric and gynae OPD of one of the private hospital of Bareilly district during the month of Jan.2010 to May2010. Chi square test was applied for statistical analysis. Results: prevalence of anemia was 43.38% Anemia was found to be more prevalent in women age more than 30 years (80.39%), illiterate (49.53%), working (83.82%) & those belonging to Muslim community. Multiparous women (45%), women with poor personal hygiene (48%) and non-vegetarian diet were slightly more anemic as compare to their contrary one. Conclusion: Despite the measures taken to control anemia in pregnancy in the last two decades, the severity of nutritional anemia continues to remain a public health issue of great magnitude, suggesting that these measures have been largely ineffective. [Agarwal K et al NJIRM 2011; 2(4) : 29-32]

Key Words: Anemia, hemoglobin, Cyanmeth-hemoglobin, iron deficiency

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Introduction: Anemia in pregnancy continues to be the major public health problem in the world. Despite decades of proposed solutions women in developing countries are still suffering the effects of having to go through pregnancy in anemic state[1]. Anemia is the commonest medical disorder in pregnancy that has a varied prevalence, etiology and degree of severity in different populations. Of the 600,000 deaths from pregnancy related complications world over, anemia is responsible for 40-60% of them[2]. Anemia causes direct as well as indirect maternal deaths from cardiac failure, hemorrhage, infection and pre-eclampcia. Among anemia, iron deficiency anemia is the most common. Nutritional deficiency is the commonest cause for iron deficiency anemia, especially in developing countries like ours[3].

Anemia in pregnancy is defined by WHO as a hemoglobin concentration below 11g/dl[4]. Although only 15% of pregnant women are anemic in developed countries[5], the prevalence of anemia in developing countries is relatively high (33% to 75%)[4,6]. According to NFHS-III (2005-2006) prevalence of anemia among pregnant women in India is 58%[7] which is higher as compare to the previous survey (NFHS-II). In India most of the population is vegetarian and food stuff off Indian diet contain significant amount of phytates, phosphates, oxalates and tannates, which form insoluble complexes with iron and reduces iron absorption[8].

In view of the above, the present study was carried out to find out the prevalence of anemia amongst pregnant women and socio-demographic factors associated with anemia in pregnancy.

Material and Methods: The present study was conducted in one of the private hospital of Bareilly district after taking ethical approval. A cross sectional study on prevalence of anemia among pregnant women and socio-demographic factors associated with it was carried out in Obstetrics & Gynaecology OPD of hospital during the month of Jan.2010 to May2010.

The respondents were the pregnant women attending Obstetrics & Gynaecology OPD in the hospital. All the women attending the antenatal

clinic from Jan 2010- May 2010 were screened for anemia by hemoglobin estimation by Cyanmeth-hemoglobin method. All the female included in the study were informed about the purpose of study. After verbal consent had been given, a capillary blood sample (finger prick) was obtained and hemoglobin concentration was determined. All the pregnant women were offered screening and no one refused to undergo finger prick. The necessary information was collected on a semi structured pre tested performa. A total of 968 pregnant women were registered for the study during this period. The women with multiple pregnancies and bleeding disorders were excluded from the study. Anemia was classified as per WHO criteria[9].

A hemoglobin value of less than 11.0 g/dL was considered to be anemia in pregnancy. The degrees of anemia studied were mild anemia (9.0–10.9 g/dL), moderate anemia (7.0–8.9 g/dL), and severe anemia (less than 7.0 g/dL).The data thus collected was computerized in specific programme developed on Microsoft excel 2007 soft ware. The data base so prepared was analyzed with the help of SPSS statistical software and the results were transferred to predesigned classified tables prepared according to the aims and objectives of the study valid inference were drawn from the information and the results were discussed with the available studies. Chi square test were used as applicable.

Result: A total of 968 pregnant women were studied. Most of the pregnant women were between 20-30yrs of age (93.49%), while >30yrs accounts for 5.26% and only 1.2% were less than 19yrs. Majority of the pregnant women were Hindu (67.15%), followed by Muslims (31.2%) and others (1.65%). Prevalence of anemia was found to be 43.38%. Anemia was found to be more among women age >30yrs (80.39%), illiterate (49.53%) and among those who were working (83.82%). Religion wise among Hindu and Muslim anemia was found to be more among Muslim. Prevalence of anemia was found to be statistically highly significantly associated (p<0.001) with age, occupation and religion (Table 1).

Table 2 shows that the prevalence of anemia increased with parity (42.12% in nullipara, 45% in multipara) but the relationship was not statistically significant (p>0.05).

Table 1: Prevalence of anemia according to socio demographic groups

Groups	No.	%	Total	P value
1)Age (yrs)				
<19	3	25	12	p<0.001
20-30	376	41.54	905	
>30	41	80.39	51	
2)Education				P>0.05
Illiterate	53	49.53	107	
Literate	367	42.62	861	
3)occupation				
Working	57	83.82	68	P<0.001
Not working	363	40.33	900	
4) Religion				
Hindu	247	38	650	P<0.001
Muslim	162	53.64	302	
Others	11	68.75	16	
Total	420	43.38	968	

Table 2: Prevalence of anemia by parity group

Parity	Anaemia Present				Total
	Yes		NO		
	No.	%	No.	%	
Nulliparous	222	42.12	305	57.87	527
1	134	44.00	170	56.00	304
2	41	42.27	56	57.73	97
>=3	23	57.00	17	43.00	40
Total	420	43.38	548	56.62	968

p>0.05

No significant association of anemia was found with hygienic condition and dietary habit (Table3).

Table: 3 Relationship of Hygiene and dietary habit with anemia

Variable	Anemic group	Non-nemia group	Total	p-value
1)Personal hygiene				p>0.05
-Good	369(42.8)	493(57.2)	862	
-Bad	51(48.1)	55(51.9)	106	
2)Dietary Habit				
- Vegetarian	205(41.3)	291(58.7)	496	p>.05
- Non vegetarian	215(45.6)	257(54.4)	472	
Total	420(43.38)	548(56.62)	968	

Discussion: In present study the prevalence of anemia was found to be 43.38%, this was in accordance with the study conducted by Dim Cyril C[10] at Enugu (40.4%). However higher prevalence of anemia (58, 57.23, 96.5 and 84.9% respectively) had been reported by various other studies[7, 11, 12, 13]. This difference is perhaps the present study was limited to the hospital and that to in urban area. Saxena Vartika et al[14] in their study conducted in rural area of Lucknow had reported a lower prevalence of anemia (36.7%) among pregnant women. This might be due to the difference in selection criteria of pregnant women. Anemia was found to be more among women age more than 30 years(80.39%) and in those who are illiterate (49.53%), similar findings were reported by Gautam Virender P[12] et al in their study conducted in two rural villages in Delhi (100 and 81% respectively). More than three fourth of the working women were suffering from anemia (83.82%). As in a previous studies[10,14] parity had no statistical relationship with the prevalence of anemia. Although in our study anemia was found to be slightly more in women whose personal hygienic condition was not good and among those who are non vegetarian, but statistically no significant difference was observed.

Conclusion: Despite the various measures like national nutritional anemia prophylaxis programme, ANC check up etc taken by government of India to control anemia in pregnancy in the last two decades, the severity of nutritional anemia continues to remain a public health issue of great magnitude, suggesting that these measures have been largely ineffective. Although the prevalence of anemia in present study was found to be low as compare to the national data but still it is very high and there is a need to give special attention to the pregnant women above 30 years of age, working and belongs to Muslim community and to improve the hemoglobin status of pregnant women through dietary modification along with preventive supplementation and nutrition education. All of these efforts would help to ensure safe motherhood and to achieve the relevant targets of the Millennium Development Goals.

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