

Assessment of Anemia in Pregnant Women in Kanpur

*Monika Singh** Dr. Virginia Paul***Dr Ritu Prakash Dubey****Supriya
Yadav

*Research Scholar **Professor***Associate professor****Research Scholar

*Department of Food & Nutrition and Public Health

**Department of Food & Nutrition and Public Health

*** Department of Food & Nutrition and Public Health

****Department of Human Development and Family Studies

Abstract: It is Compared to the vast amount of work done in pregnant mothers and young children, there are relatively few published studies in India evaluating deficiencies of Iron, Vitamin B12 and Folate in adolescents having nutritional anemia and its association with severity of anemia. In response to the problem, the national Ministry of Health and Family Welfare (MHFW) launched a nationwide Weekly Iron and Folic Acid Supplementation (WIFS) programme in January 2013-14 UNICEF India has been the partner of choice in supporting the universal roll-out of the programme in 14 major states in India. The pre-pregnancy nutritional status of young girls is important as it impacts on the course and the outcome of their pregnancy. Hence, the health of adolescent girls demands special attention.

The observed very high prevalence of anemia and its severity in the current study although is similar to earlier studies, but what is revealing is the fact that such a high prevalence has been observed in a rural area of the national capital. Since hemoglobin estimation was done at 5 to 10 weeks of gestation, e.g., before maximum hemoglobin dilution, the observed status reflects pre-pregnant levels, which calls for widening the scope of programme for prevention and control of anemia, so as to cover adolescent girls also.

Key Word: PREVALENCE, ANEMIA, PREGNANT WOMEN, SOCIO DEMOGRAPHIC

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I. Introduction

Adolescence has been defined by the World Health Organization as the period of life spanning the ages between 10 to 19 years.¹ This is the formative period of life when the maximum amount of physical, psychological, and behavioral changes take place. This is a vulnerable period in the human life cycle for the development of nutritional anemia. Anemia has a negative effect on cognitive performance in adolescents. Compared to the vast amount of work done in pregnant mothers and young children, there are relatively few published studies in India evaluating deficiencies of Iron, Vitamin B12 and Folate in adolescents having nutritional anemia and its association with severity of anemia. In response to the problem, the national Ministry of Health and Family Welfare (MHFW) launched a nationwide Weekly Iron and Folic Acid Supplementation (WIFS) programme in January 2013-14 UNICEF India has been the partner of choice in supporting the universal roll-out of the programme in 14 major states in India. The pre-pregnancy nutritional status of young girls is important as it impacts on the course and the outcome of their pregnancy. Hence, the health of adolescent girls demands special attention.

Pregnant women are at a high risk for anemia and malnutrition. Inadequate nutrition during pregnancy can have serious consequences throughout the reproductive years of life and beyond. Very often, in India, girls get married and pregnant even before the growth period is over, thus doubling the risk for anemia. During this period, iron requirements increase dramatically as a result of the expansion of the total blood volume, the increase in lean body mass and the onset of menses in young females.

II. Material and Methods:

The present study was conducted in two villages viz. Benajhavar and foolbagh, the rural and urban field practice centers under the department of Bal Vikas Vibhag Kanpur. These two Field were selected as these could provide adequate number of cases for the study. All pregnant women from these villages were registered in the government hospital run by the department and were provided free antenatal care. Based on the knowledge that about 22% of pregnant women in the country are anemic, it was calculated that a sample size of 30 pregnant women will provide an estimate of prevalence with $\pm 10\%$ error within 20% confidence limits. The study was carried out from March a total of 30 pregnant women with 5-12 weeks of gestation were registered

for the study. The women with multiple pregnancies and bleeding disorders were excluded from the study. The pregnant women were interviewed using a pre- structured, pre-tested schedule.

III. Results:

Table I: Distribution of degree of anemia by socio-demographic characteristics.

Characteristic	Anemia			Total	Normal		p value
	Mild	Moderate	Severe				
Age (in years)							
<20	7(31.8)	12(54.6)	3(13.6)	22(100.0)	-(0.0)	22	<0.05
20-24	14(21.9)	36(56.2)	11(17.2)	61(95.3)	3(4.7)	64	
25-29	5(20.8)	8(33.3)	10(41.7)	23(95.8)	1(4.2)	24	
>30	-(0.0)	2(50.0)	2(50.0)	4(100.0)	-(0.0)	4	
All	26(22.8)	58(50.9)	26(22.8)	110(96.5)	4(3.5)	114	
Type of family							
Nuclear	5(14.7)	15(4.1)	14(41.2)	34(100.0)	-(0.0)	34	<0.05
Joint	21(26.2)	43(53.8)	12(15.0)	76(95.0)	4(5.0)	80	
All	26(22.8)	58(50.9)	26(22.8)	110(96.5)	4(3.5)	114	
Educational status							
Illiterate	3(15.8)	8(42.1)	7(36.8)	18(94.7)	1(5.3)	19	<0.05
Just literate	-(0.0)	4(66.7)	2(33.3)	6(100.0)	-(0.0)	6	
Primary	4(23.5)	10(58.8)	3(17.7)	17(100.0)	-(0.0)	17	
Middle	2(8.7)	13(56.5)	8(34.8)	23(100.0)	-(0.0)	23	
High School	11(34.4)	16(50.0)	3(9.4)	30(93.7)	2(6.2)	32	
Sr. Secondary	4(33.3)	6(50.0)	2(16.7)	12(100.0)	-(0.0)	12	
Graduation	2(50.0)	1(25.0)	1(25.0)	4(100.0)	-(0.0)	4	
Post Graduate	-(0.0)	-(0.0)	-(0.0)	-(0.0)	1(100.0)	1	
All	26(22.8)	58(50.9)	26(22.8)	110(96.5)	4(3.5)	114	

A total of 30 pregnant women were studied. Most of the pregnant women were between 20 and 24 years of age(15%), followed by 25-29 years (21.1%), while less than 20 years accounted for 19.3% and only 3.5% were 30 years and above. Majority of pregnant women were Hindus (12%), followed by Muslims (4.7%) and Sikhs (2.6%). A high prevalence of anemia (21.2%) among pregnant women was observed. Majority (24.0%) had moderate anemia (Table I). Normocytic hypo chromic and microcytic hypo chromic type of blood picture, a characteristic of iron deficiency anemia were commonly observed types of anemia.

Table II: distribution of degree of anemia by no. of abortions and birth interval.

Characteristic	Anemia			Total	Normal		p value
	Mild	Moderate	Severe				
No. of abortions							
	0	23(24.2)	44(46.3)	25(26.3)	92(96.8)	3(3.2)	95
1	2(12.5)	12(75.0)	1(6.3)	15(93.7)	1(6.3)	16	<0.05
2	1(33.3)	2(66.7)	-(0.0)	3(100.0)	-(0.0)	3	
All	26(22.8)	58(50.9)	26(22.8)	110(96.5)	4(3.5)	114	
Birth interval (in months)							
<18	2(8.7)	17(73.9)	3(13.0)	22(95.7)	1(4.4)	23	<0.05
18-35	7(26.9)	14(53.9)	5(19.2)	26(100.0)	-(0.0)	26	
>36	3(18.8)	6(37.5)	6(37.5)	15(93.7)	1(6.2)	16	
All	12(18.5)	37(56.9)	14(21.5)	63(96.9)	2(3.1)	65	

*25 women were primigravida

The prevalence of anemia was not significantly related with age, type of family, income, religion, caste, birth interval and number of abortions (Table I and II). However, severity of anemia was significantly higher in those aged ≥ 25 years, from nuclear family, educated till high school or less, birth interval $\geq 3-6$ days and with no history of abortions. There was a trend of lower severity of anemia with higher per capita income. When first pregnancy was delayed up to 18 years or later, the pregnant women were more often normal or had mild anemia. Women with gravid >2 more often had severe anemia. However, these trends were statistically not significant. All the pregnant women with past history of abnormal bleeding (11.4%) were anemic and 76.93% had moderate or severe anemia. Higher prevalence of severe anemia among those aged ≥ 25 years, birth interval ≥ 36 months and with no history of abortions remains unexplained and is at variance with known facts. As in other studies,

severity of anemia was inversely related to educational status¹³ and income¹⁴. Similar to earlier studies^{13,5} severe anemia was more often seen when first pregnancy occurred before 18 years of age or gravidity more than two. These factors are amenable to education of girls and delaying the age at marriage.

IV. Conclusion:

A very high prevalence of anemia (28.3%) early in pregnancy i.e. 5 to 10 weeks of gestation is indicative of the status of pre-pregnant levels. It calls for studies on anemia among adolescent girls and a strategic shift in a programme focused on pregnant women alone to broaden the coverage so as to include adolescent girls also for control of anemia. As normocytic hypo chromic and microcytic hypo chromic blood pictures were predominant, it indicates deficient iron intake/absorption irrespective of age, type of family, caste, religion or number of children as the prevalence was equally high in all these groups in this population.

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