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Burden of Anemia in Pregnancy based on Maternal Hemoglobin- a Data based descriptive study in rural block of Central Kashmir

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ABSTRACT

Background
Anemia is a big public health problem in India affecting all the stage groups particularly the pregnant women. The study was conducted to get an idea about the burden of anemia in pregnancy in one block of central Kashmir.

Methods
The study was conducted in one of the clusters of a medical block in central Kashmir. All the pregnant women registered in the facilities of the selected cluster from April 2018 to January 2019 were included. Data regarding the variables were obtained from the hospital records.

Results
Out of the 380 study subjects. Anemia according to WHO criteria was found in 98% of selected study subjects. Moderate anemia being the common type (83%). About 72%of the females were in the age group of 26 to 35 years.

Conclusion
A high burden of anemia was found in the study area.

Keywords: Pregnancy, Anemia, Kashmir

INTRODUCTION

Anemia is a major public health problem affecting children, adolescents, women of reproductive age group, and lactating mothers worldwide. As per NFHS-4, the prevalence of anemia in India is 53% in reproductive age group (15-49) [1]. Anemia, which is a condition in which there is insufficient oxygen carrying ability of blood either due to change in Red blood cell morphology or number [2]. According to the definition of World Health Organization (WHO),anemia in women who are pregnant, is defined as a condition in which Hemoglobin concentration is less than 11g/dl.[3] WHO further divides anemia in pregnancy into mild(Hb 10 - 10.9gm/dl).

(9.9gm/dl), moderate (Hb 7-9.9gm/dl) and severe(Hb <7gm/dl) [3]. It is estimated that 52% of pregnant women and 23% of the pregnant women

are anemic living in developing and developed countries respectively, as per the WHO report [4]. In developing countries, there are various factors responsible for the anemia particularly in pregnancy as nutritional deficiencies like iron, folate and vitamin B12. Other causes include parasitic infestation, such as malaria and hookworm. Geographical location, season and dietary practice also have an effect on the health of pregnant women. Common causes of anemia in pregnant women in Sub-Saharan Africa is iron and folic acid deficiency. India being the highest in the list accounts for 80% of maternal deaths due to anemia in South Asia. In contrast, only 4-12 % of women of childbearing age in developed countries suffer from anemia [5-8]. Prevalence of anemia is also high in this part of the country particularly in pregnant women besides other non-communicable diseases [9]. There is limited data available regarding the prevalence of anemia in the study area. This study was conducted to provide an overview of the burden of anemia in pregnant women in one of the rural medical blocks of central Kashmir.

METHODS

Study setting

The present study was conducted in block khansahib in District Budgam of Kashmir Valley. Block Khansahib is one of the ten blocks of the district Budgam. There are two Community Health Centres (CHC) in the said block. For the purpose of sampling, the block was divided into two clusters based on the catchment area of the Community Health Centres (CHC). One cluster under Community Health Centres (CHC) Krimshore was selected for the study. All the sub centers and Primary Health Centres in the selected cluster were included in the study.

Study design

The study is a data-based descriptive cross sectional study. All the pregnant women registered from April 2018 to January 2019 in the selected centres were included. Data regarding the socio-demographic variables (age, residence, etc.) was collected from the records of these centres. The hemoglobin level at the time of registration was taken to avoid repeated measurements. Anemia was classified as per the WHO classification based on the maternal hemoglobin concentration Permission was obtained from the Block Medical Officer Khansahib, Budgam.

Results

Records of 380 pregnant women were taken from the sub-centres and primary health centres of the cluster. The mean age of the study subjects was 30 year with minimum age of 19 years and maximum of 44 years with Standard deviation of 4.5. About 72%of the females were in the age group of 26 to 35 years. (table1). The percentage of primigravida women was 40% followed by gravida 2 which were 33% (table 2). About 14% of the females gave history of previous abortions. (Table3). The mean hemoglobin level was 9.0gm/dl with standard deviation of 0.98 with minimum of 6 gm/dl and maximum of 11.4gm/dl. According to WHO criteria, 98% of the pregnant women were having anemia based on the maternal hemoglobin. The percentage of moderate anemia was 83% followed by mild anemia in 11.4% of pregnant women and severe anemia was found in 13%. (Table1). Most common Blood group found was B type (40%) and 95% were having positive Rh factor. (Table 4 and Table 5)

Table 1: Distribution of pregnant women according to the age and severity of anemia

Age group	Anemia				Total
	Severe (hb.<7 gm/dl)	Moderate (hb. 7-9.9 gm/dl)	Mild (hb.10-10.9 gm/dl)	No anemia (hb. ≥11 gm/dl)	
<20	0	1	0	0	1 (0.3%)
20-25	0	42	6	0	48 (12.6%)
26-30	9	123	24	4	160 (42.0%)
31-35	3	99	7	4	113 (30.0%)
36-40	1	47	7	0	55 (14.4%)
>40	0	3	0	0	3 (0.7%)

Total	13	315	44	8	380
Percentage	(3.4%)	(83%)	(11.6%)	(2.6%)	(100%)

Table 2: Distribution of pregnant women according to parity

Parity	No of case	Percentage
Primigravida	151	40
Gravid 2	125	33
Gravid 3	72	19
Gravid 4	23	6
More than 4	9	2
Total	380	100

Table 3: Distribution of the pregnant women according to previous history of abortions

No of previous Abortions	Frequency	Percentage
None	327	86.1
One	43	11.3
Two	7	1.8
Three	3	0.8
Total	380	100

Table 4: Distribution of pregnant women according to blood group

Blood group	Frequency	Percent
A	78	20.5
B	151	39.7
AB	21	5.5
O	130	34.2
Total	380	100.0

Table 5: Distribution of pregnant women according to Rh factor

Rh factor	Frequency	Percent
NEGATIVE	18	4.7
POSITIVE	362	95.3
Total	380	100.0

DISCUSSION

Our study demonstrates that anemia is highly prevalent among pregnant women of rural population of central Kashmir region, with the prevalence rate of 90% among the registered pregnanciess. The prevalence rate is same as that estimated by Mehbooba Rasool et.al (2017) [10] and Kaul et.al 2013 [11] who found a prevalence rate of 90.4 %and 91% respectively in their studies. It is observed that majority of pregnant women (42%)were in age group of 26-30 years. The similar study was conducted in a rural block (Hajin) of Kashmir valley, by Kaulet.al, and it was found that maximum subjects were above 25 years of age.[10]Some other studies have also shown a high prevalence of anemia in age groups above 25 years.[12,13,13 14]. In our study 84% of the patients suffered with moderate anemia, 11.4% patients with mild anemia, and 2.6% women had severe anemia. Our results were comparable with Mehbooba et.al who showed a %age of 75.4%, 13.6% of moderate and severe anemia respectively. Kaul et.al reported 51.4% moderate anemia, and 22.8% severe anemia [9]. Local dietary habits, lack of knowledge and awareness about importance the nutrition in pregnancy may be the cause for such huge burden.

LIMITATIONS

The limitations of the study are that we took the maternal hemoglobin level based on the secondary data from the hospital records. The actual reason

for such high burden could not be found out as the study was conducted to have an idea about the burden of anemia in pregnancy.

CONCLUSION

The study found high burden of anemia in pregnancy in the area. Further studies are advocated to find out the cause of such burden. The stakeholders of the various national programmes concerned with the issue should address the various factors associated with this burden of anemia.

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Conflict of interest: None declared

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