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PREVALENCE OF ANEMIA DURING PREGNANCY IN A TERTIARY CENTRE OF UTTARAKHAND

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Abstract: Objective:the study was done to document the prevalence and severity of anaemia and its associated socio demographic factors in pregnant women in a tertiary centre of Kumaon region of Uttarakhand

Method – A retrospective observational study was done in the department of obstetrics and gynaecology of Dr Sushila Tewari hospital and medical college Haldwani for a period of two years from March 2018 to March 2020. A total 5877 cases were enrolled (OPD and Ward). A detailed clinical history, general examination and investigations were done. Anaemia was classified as mild moderate and severe based on peripheral smear findings.

Result – Prevalence of anaemia during pregnancy in a tertiary centre of Uttarakhand is high that is 66.78% with more cases in age group of 21 – 25 years gravida more than 2, 5th pass, mixed dietary habits, low socio economic status, non-working, from plain areas of Uttarakhand and Uttar Pradesh, gestational age more than 29 weeks, and had 1 to 2 years intervals between child birth. Among all 63.11% had mild 31.98% moderate and 4.9% had severe anemia out of which 90.56% had microcytic anemia.

INTRODUCTION

Anemia during pregnancy is a major health problem throughout the world and especially in developing countries

Anemia is the second most common cause of maternal death in India and high-risk factor for intrauterine growth retardation, preterm delivery, low birth weight and maternal and child mortality.

The incidence of anemia during pregnancy is 55.9%(WHO) and higher in developing countries (5-90%).

In India prevalence of anemia has been reported to be in the range of 33-89% and is mainly due to low dietary intake of iron leading to iron deficiency anemia.

MATERIAL & METHOD

A retrospective observational study was conducted in the obstetrics & gynecology department of Government medical college Haldwani Uttarakhand from March 2018-March2020.

Informed consent was taken from all pregnant female who were included in the study.

A detailed clinical history was taken from all cases who attended the O.P.D. or were admitted in the ward.

General examination was done with special emphasis on pallor, edema, koilonychia, lymphadenopathy & icterus.

The tests were done on first antenatal visit of the patient irrespective of the trimester.

Blood sample was collected in EDTA and send to the central lab (Department of pathology) for routine investigations that included Hb, PCV, complete hemogram, peripheral smear and reticulocyte count.

Anemia was classified as mild, moderate and severe based on Hb concentration of 10-10.9gm/dl, 7-9.9gm/dl and <7gm/dl.

Based on peripheral smear findings anemia was classified as microcytic hypochromic, macrocytic, dimorphic and normocytic normochromic anemia.

INCLUSION CRITERIA

- All pregnant women attending OPD and admitted in emergency
- Age group 18-40yrs.



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EXCLUSION CRITERIA

- >40 yrs
- Pregnant women with chronic medical disease
- Known case of hemolytic anemia
- bleeding diathesis
- APH

Table 1. Age wise distribution of cases

AGE IN YEARS	NO. OF CASES	PERCENT
18-20	68	1.10
21-25	2620	44.58
26-30	2280	38.79
31-35	810	13.78
36-40	32	0.54

Table 2. According to gravidity

GRAVIDITY	NO. OF CASES	PERCENT
Primigravida	1200	20.41
Gravida 2	1660	28.24
More than 2	3017	51.33

Table3-According to education

EDUCATION	No.	Percentage
Illiterate	1329	22.61
V th pass	2504	42.60
X th pass	1027	17.47
XIIth pass	915	15.56

Table 4. According to occupation

OCCUPATION	No.	Percentage
Non-working(housewife)	5437	92.51
Working	440	7.48

Table 5- According to region

REGION	No.	Percentage
Plain	4132	70.30
Hilly	1745	29.69

Table 6-According to religion

Religion	No	Percentage
Hindu	2972	50.57
Muslim	2603	44.29
Christian	302	5.13

Table7.According to socioeconomic status

Socioeconomic status	No.	Percentage
LSES	4039	68.72
MSES	1838	31.27
HSES	-	-



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Table 8-According to dietary habits

Type of diet	No.	Percentage
Vegetarian	1838	31.27
Mixed	4039	68.72

Table9-According to duration of pregnancy

Duration of pregnancy	No.	Percentage
<12 weeks	413	7.02
13-28 weeks	1740	29.60
>29 weeks	3724	63.36

Table10.Interval between child birth

Interval between child birth	No.	Percentage
<1 yr	33	0.56
1-2yr	2983	50.75
>2yr	1661	28.26

Table 11. According to severity of Anaemia

TYPE	NO. OF CASES	PERCENTAGE
Mild	3709	63.11
Moderate	1880	31.98
Severe	288	4.90

Table 12. According to morphological type of anemia

Type	No.	Percentage
Microcytic hypochromic	5269	90.56
Normocytic normochromic	523	8.98
Dimorphic	26	0.44

Discussion

Age: In our study the total number of cases were 5877 between 18-40 yrs and maximum (44.58%) were in age group of 20-25 yrs.

A study by Mangla M et al (5) in rural areas of Haryana showed maximum number of pregnant women in the age group 20-29 yrs. Similar results (77.3%) were also replied by Rajamouli et al (6)

Gravidity: In our study gravida more than 2 were 51.33%, more than 1 were 28.24% and primigravida 20.41% Sridevi (7) in her study found that 66.6% cases were gravid more than 2, gravida 2-20.8% and primigravida 12.5%

Education: Our study showed more no. of cases with anemia in females with lower level of literacy i.e., 42.6% who were 5th pass and 22.61% who were illiterate. Only 1.73% were graduates Mangla et al observed that 21.5% of the cases were illiterate while 19.76% and 16.7% had studied up to primary and secondary levels remaining 42.47% were graduate or post graduate.

Rajamouli et al also observed that majority of the patients suffering from anemia were illiterates (46.4%).

A study by Chowdhary et al (8) in Bangladesh also found that education of women was significantly associated with anemia in pregnancy.

Dietary habits: 68.72% cases had mixed dietary habits of vegetarian and non-vegetarian diet and only 31.27% were purely vegetarian. Sharma et al (9) found that different type of dietary habits had no effect on the prevalence of anemia in pregnant Indian women.



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Occupation: Majority (92.51%) were non-working and only 7.48% were working.

Region: 70.30% cases were from plain areas of Uttarakhand and Uttar Pradesh while 29.69% were from hilly region of Uttarakhand.

Socioeconomic status: 68.72% cases belonged to low socio-economic status and 31.27% from mid socioeconomic status.

A study by Shridevi also had the same observation

There is an inverse relationship of socioeconomic status and educational status with anemia and has been proved by many studies worldwide.

Religion: Among all 50.57% were Hindu, 44.29% were Muslim and 5.13% were Sikhs.

Lokare et al (10) in a study based in Karnataka found a low prevalence of anemia in Muslims when compared to Hindus.

Interval between child birth: In our study 50.75% cases had an interval of 1-2 years between two deliveries followed by 28.26% with more than 3 yrs interval and 13.56% with an interval of less than a yr.

Anemia was more common in women with short interval between deliveries and was noted by Shwetha and Prasad K N (11) and Lazovic N et al (12) in their studies

Duration of pregnancy: In our study most of the cases 63.36% came to the hospital when the duration of pregnancy was more than 29 weeks ,29.60% between 13-28 weeks and less than 12 weeks in 7.02% cases.

Suryanarayan et al (13) documented an increase in anemia in pregnant women with increasing gestational age however contrary to this decrease in anemia with increasing gestational age was observed by Vemulopatti and Rao (14)

Severity of anemia: In our study 63.11%had mild, 31.98%had moderate and 4.90%had severe anemia.

Mangla et al also reported mild, moderate, severe and very severe anemia in 41.76%,37.05%,15.88%and 3.29% cases respectively.

Rajamouli et al reported mild anemia in 28.0%, moderate in 36.8%and severe anemia in 6.9%of their cases.

Morphological type of anemia: 90.56% cases had microcytic hypochromic type followed by normocytic normochromic in 8.98% and dimorphic anemia in 0.44% cases. Due to some reason GBP was not possible in 59 cases.

During their study Babu et al (15) observed microcytic hypochromic anemia to be the commonest pattern in India whereas Hunshikatti and Vivek (16) documented normocytic normochromic anemia to be the most common type.

As reported by other authors 75% anemia during pregnancy is iron deficiency type

Our study showed an overall prevalence of 66.78% which was similar to a study done in Kolar dist. By Suryanarayan et al that showed a prevalence of 63%.

A similar study conducted in rural Tamil Nadu showed a prevalence of 69.3% Lokar et al (17) reported prevalence of anemia among pregnant women to be 87.2% whereas Mangla et al observed it to be 98.

Conclusion

Anemia during pregnancy is widely prevalent in our country and was seen in our study also. Iron deficiency anemia continues to be the commonest etiology of anemia in pregnancy and the prevalence is amongst the highest in the world. This could be due to lack of knowledge regarding importance of nutrition, early child bearing, high number of births, short interval between child births and poor access to antenatal care and is highly recommended that more effective guidelines be made regarding education, awareness, frequent visits by Anganwadi workers to pregnant woman, regular antenatal checkups, regular iron and folic acid intake,



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birth control, spacing between child birth, deworming etc. Only such measures will help to reduce burden of anemia among pregnant women in our country.

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