Original Research Article

A study of prevalence of anaemia in pregnant women among rural population in Rajasthan

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ABSTRACT

Background: Anaemia in pregnancy is a major contributor in morbidity seen in pregnancy and childbirth. Prevalence of anaemia in India is still as high as 52%. Aim of the present study is to study the prevalence of anaemia and its socio demographic variables in rural population of Rajasthan.

Methods: This study was done in our tertiary care teaching institute in obstetrics and gynecology department in Rajasthan. 2384 women who came to the ANC clinic were screened for anaemia. 1442 women found anemic were enrolled for study. They were interviewed through a structured questionnaire and data thus obtained was analyzed.

Results: Prevalence of anaemia was found to be 60.4% in the study. Out of these 58.8% had mild anaemia, 39.8% had moderate anaemia, 1.04% severe anaemia and 0.2% had very severe anaemia. Maximum women were in the age group 20-24years (48.8%). A large proportion of women were from the lower socioeconomic strata 58.9%. Maximum anemic women had received primary education (63%), while 25% were illiterate and 12% received more than primary education. Prevalence of anaemia was almost similar in both primigravidas 49.1% and multigravidas 50.9%. Regular iron intake was seen in 56% women, 27.7% took iron folic acid (IFA) tablets but irregularly and 16.3% had not taken any supplements.

Conclusions: Anaemia is still highly prevalent among pregnant women in rural Rajasthan. So, there is a need for effective implementation of the existing programmes for prevention and treatment of anaemia for healthy future generation.

Keywords: Anaemia, Pregnancy, Maternal morbidity

INTRODUCTION

Anaemia is a global health problem affecting both developed and developing countries. It was and remains a significant cause of maternal morbidity and mortality globally. Anaemia is the reason behind a number of maternal and fetal complications. It decreases the woman's reserve to tolerate the blood loss during childbirth causing increased frequency of ICU admissions, surgical interventions and longterm morbidity. Besides the mother her fetus also suffers from low birth weight, prematurity, intrauterine growth restriction and low Apgar scores.[1]

According to World Health Organization (WHO) in 2019, 30% of nonpregnant, 37% pregnant women and 40% of all children aged 6-59 months were affected by anaemia globally.[2] Low and middle income countries like India bear the greatest burden of anaemia particularly affecting rural populations in poorer households and who have received no formal education.[2]

In India, according to the National Family Health Survey 5 (2019-21), 59.1% adolescent girls, 52.2% pregnant women (15-49 years), suffer from anaemia.[3] Government of India (GoI) is closely working with WHO in eradicating anaemia. In 2018, GoI launched Anaemia Mukt Bharat programme using 6×6×6 strategy. It included 6 target beneficiaries, 6 interventions and 6 institutional mechanisms to reduce anaemia in vulnerable groups like women, children and adolescents. According to National

Family Health Survey (2019-21), 46.3% women suffer from anaemia in the Rajasthan.

Despite all these measures, anaemia has defied all public health interventions and continues to affect a majority of pregnant women in state of Rajasthan.[4] This may be due to the lack of knowledge of importance of nutrition on maternal and fetal health and lack of resources to access health centres or obtain sources of nutrition.[5]

Anemia is considered as a major cause of maternal and fetal morbidity and mortality in developing countries.[6,7] It may lead to premature birth, low birth weight, fetal cognitive impairment, and fetal death.[7] Maternal complication includes preeclampsia, antepartum hemorrhage, puerperal sepsis, and thromboembolic complications leading to subinvolution of the uterus, failure of lactation, and delayed wound healing.[8]

Iron deficiency makes a larger contribution to anaemia, global efforts to reduce the anaemia burden have largely been directed towards increasing intake of iron through supplementation, food fortification and diversification.[9]

A recent meta-analysis showed that the risk of maternal mortality decreases by 20% for every 1 g/dl increase in the hemoglobin concentration. This decline is continuous between Hb levels between 5 and 12 mg/dl but not linear.[10]

The aim of the present study is to estimate the prevalence of anaemia and its demographic characteristics in pregnant women in rural population of Rajasthan.

METHODS

This study was conducted in the department of obstetrics and gynecology of our tertiary care teaching institute from May 2022 to April 2023, for a period of one year. A total of 2384 pregnant women attending antenatal care (ANC) outpatient department (OPD) were screened for anaemia using blood tests and 1442 women who were found anemic were enrolled.

Inclusion criteria

Pregnant women attending ANC OPD and Hb <11 gm/dl were included.

Exclusion criteria

Non pregnant women, indoor patients and Hb >11 gm/dl were excluded from the study.

Study population

Pregnant women attending ANC OPD between the ages of 15 to 45 years from nearby villages in Jaipur district were included. Study was initiated only after due approval from the institutional ethics committee. Informed consent was obtained from all the participants after explaining the

purpose of the study and the scope of the interview. Each woman was then given a structured questionnaire to obtain information about demographic factors like age, education, socioeconomic status, parity and iron folic acid intake. Severity of anaemia was estimated using the ICMR classification- mild: 10-10.9 gm/dl, moderate: 7-9.9 gm/dl, severe: 4-6.9 gm/dl, and very severe: <4 gm/dl.

Statistical analysis

The data obtained was tabulated according to severity of anaemia and socio-demographic factors. Data was entered and analyzed using Microsoft excel spread sheet and were expressed in percentage.

RESULTS

Total number of patients attending ANC OPD were 2384, out of which 1442 patients had haemoglobin less than 11 gm/dl and were enrolled in study. Prevalence of anaemia thus found to be 60.4%. Out of these 58.8% had mild anaemia, 39.88% had moderate anaemia, 1.04% severe anaemia and 0.28% had very severe anaemia (Figure 1).
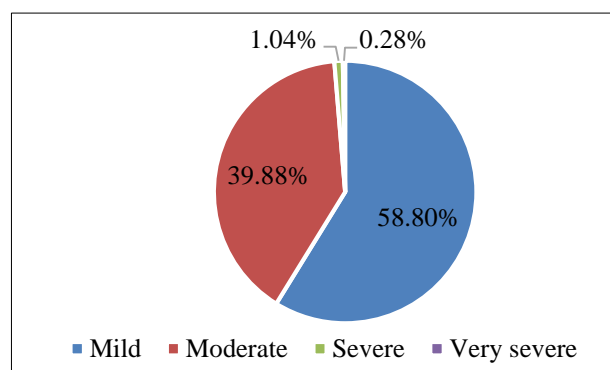
Figure 1: Prevalence of type of anaemia.

Most anemic women were in the age group 20-24 years (48.8%), almost similar prevalence in <20 years (23.7%) and 25-30 years (23.9%) groups. Least number was seen in >30 years group (3.46%) (Figure 2).
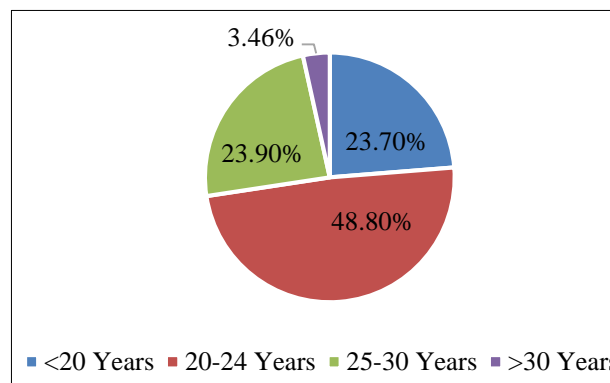
Figure 2: Distribution of study population according to age (years).

A large proportion of women were from the lower socioeconomic strata 58.9%, 31.1% from middle and only 10% from higher stratum.

Regular iron intake was seen in 56% women, 27.7% took iron folic acid (IFA) tablets but irregularly and 16.3% had not taken any supplements.

Table 1: Socio-demographic factors of the study population.

Socio-demographic factors	All pregnant anaemic women N=1442 (%)	Mild anaemia N=848 (58.80%)	Moderate anaemia N= 575 (39.88%)	Severe anaemia N=15 (1.04%)	Very severe anaemia N=4 (0.28%)
Age (years)					
<20	342 (23.7)	162 (19.1)	178 (31)	2 (13.3)	0 (0)
20-24	704 (48.8)	423 (49.9)	272 (47.3)	8 (53.4)	1 (25)
25-30	346 (23.9)	248 (29.2)	95 (16.5)	2 (13.3)	1 (25)
>30	50 (3.46)	15 (1.8)	30 (5.2)	3 (20.0)	2 (50)
Education status					
Uneducated	360 (25)	149 (17.6)	203 (35.3)	7 (46.7)	1 (25)
Primary	908 (63)	566 (66.7)	334 (58)	5 (33.3)	3 (75)
>Primary	174 (12)	133 (15.7)	38 (6.7)	3 (20)	0 (0)
Socio-economic status					
Low	849 (58.9)	553 (65.2)	283 (49.2)	10 (66.7)	3 (75)
Middle	449 (31.1)	219 (25.8)	224 (39.0)	5 (33.3)	1 (25)
High	144 (10)	76 (9)	68 (11.8)	0 (0)	0 (0)

Table 2: Distribution of the study population according to parity and IFA intake.

Socio-demographic factors	All pregnant anaemic women N=1442 (%)	Mild anaemia N=848 (58.80%)	Moderate anaemia N=575 (39.88%)	Severe anaemia N=15 (1.04%)	Very severe anaemia N=4 (0.28%)
Parity					
Primi	707 (49.1)	478(56.4)	224 (38.9)	4 (26.7)	1 (25)
Multi	735 (50.9)	370(43.6)	351 (61.0)	11 (73.3)	3 (75)
IFA intake					
No	235 (16.3)	135 (15.9)	88 (15.3)	9 (60)	3 (75)
Irregular	400 (27.7)	120 (14.1)	273 (47.5)	6 (40)	1 (25)
Regular	807 (56.0)	593 (70.0)	214 (37.2)	0 (0)	0 (0)

DISCUSSION

Prevalence of anaemia in our study was 60.4%. Out of this mild anaemia was highest 58.8% followed by moderate anaemia 39.88%. Similar findings were seen in the study by Mangla et al in rural Haryana in 2014.[1]

In our study maximum women (63%) had received only primary education. This was in contrast to findings in study by Mangla et al where maximum prevalence was seen in graduates and post graduates. However severe anaemia was seen in uneducated or primary educated women in both the studies.[1]

In our study maximum number of women were from age group of 20-24 (48.8%) similar to study by Sarla et al in which it was 47%.[5]

Maximum prevalence of anaemia in our study was seen in low socioeconomic status women 58.9% similar to study done by Sarla et al 63.75%.[5]

In our study prevalence of anaemia was not affected by parity whereas in study by Bansal et al prevalence was high in multiparas.[6]

Majority of women (56%) in our study were taking IFA regularly. In study by Bansal et al 74.8% women were taking IFA regularly although their prevalence of anaemia was much higher (81.8%) than our study.[6]

Reason for high prevalence of anaemia in women of rural Rajasthan may be due to patriarchal nature of our society, lack of financial independence and education of women. They have less knowledge of nutrition during pregnancy and many a times unable to afford proper food and support as evident from our study.

Limitations

The limitations of our study were that only women who were attending ANC OPD were included and study was conducted in one center so the prevalence of anaemia in other districts of Rajasthan could not be estimated.

CONCLUSION

GoI has been running several programmes for eradicating anaemia but need for reaching the remote populations seems to be unmet.

We counselled all the patients coming to our OPD for proper diet especially through inexpensive and locally available resources. Also, they were encouraged to take supplements regularly for a healthy outcome of mother and child.

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