

Original Research Article

A study on prevalence of anemia among antenatal females registered at rural health training centre, Budhi in district Kathua

Nazuk Razdan¹, Sonika Sangra^{1*}, Asha Kiran²

¹Department of Community Medicine, GMC Kathua, Jammu and Kashmir, India

²Department of Health, RHTC Budhi, Jammu and Kashmir, India

Received: 29 October 2021

Accepted: 04 December 2021

*Correspondence:

Dr. Sonika Sangra,

E-mail: sonikasangra@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Anemia has been recognized as the most common form of nutritional deficiency worldwide, particularly in developing countries like India. Anemia is a public health problem in both developed and developing countries. It affects 1.62 billion people globally, which corresponds to 24.8% of the world population. Though anemia is easily treatable and preventable disease, it continues to be significantly associated with pregnancy. The aims of the study were to determine the magnitude of anemia in pregnant women according to severity and to find out association of anemia with different variables.

Methods: The present study was a retrospective type of study which was conducted over a period of 2 years. A total of 109 antenatal females were registered over the period of 2 years.

Results: The most common age group seen was 26-30 years (45%), majority of females were Hindu (95.4%) and belonged to lower socio-economic status (52.3%). The obstetrics history of the antenatal females' shows, majority of them registered themselves in their 1st trimester (73.4%) and around 22.1% of the females had birth interval between 2-3 years, followed by 1-2 years. Majority of them had moderate anemia (82%), followed by mild anemia (10%). Only 1% of females had severe anemia while rest had no anemia (7%).

Conclusions: This study revealed a high prevalence of anemia in antenatal females, irrespective of religion, socio-economic status, etc. anemia is found to be endemic in this region, due to various unfavorable socio-demographic factors. Strengthening of the existing adolescent and maternal health interventions focusing towards anemia screening and prevention among reproductive age group.

Keywords: Anemia, Antenatal, Hemoglobin

INTRODUCTION

Anemia has been recognized as the most common form of nutritional deficiency worldwide, particularly in developing countries like India.¹ Anemia is a public health problem in both developed and developing countries. It affects 1.62 billion people globally, which corresponds to 24.8% of the world population.

Global prevalence of anemia in pregnant women is 41.8%. Approximately 50% of cases of anemia are considered to be due to iron deficiency. Anemia resulting

from iron deficiency in pregnancy is an important factor associated with an increased risk of maternal, fetal, and neonatal mortality; poor pregnancy outcomes such as low birth weight and preterm birth; impaired cognitive development, reduced learning capacity, and diminished school performance in children; and decreased productivity in adults.² In India, anemia is the second most common cause of maternal death, accounting for 20% of total maternal death.³ Iron deficiency is common during pregnancy because of greater iron demand and several pregnant females start their pregnancy with low iron stores. The amount of iron absorbed from the diet,

along with that mobilized from stores is frequently inadequate to meet the demands of pregnant females.⁴

Maternal problems which occurs due to anemia in pregnancy are poor weight gain, less exercise tolerability, pregnancy induced hypertension, cardiac failure, preterm labour, placenta previa, placental abruption, eclampsia, premature rupture of membranes, thromboembolic problems, postpartum hemorrhage, sub involution of uterus and puerperal sepsis.⁵

Though anemia is easily treatable and preventable disease, it continues to be significantly associated with pregnancy. Diminished intake and increased demand, excess demand in case of multigravida woman and altered metabolism along with the background characteristics like low socioeconomic status, illiteracy, and early age of marriage associated with increase in susceptibility to infectious diseases like hookworm infestations may serve to be the underlying factors associated with prevalence of anemia during pregnancy. According to the World Health Organization (WHO) prevalence of anemia among pregnant women varies from 14% in developed countries to 65%–75% in India.⁶

The ministry of Health, Government of India has recommended intake of 100mg of elemental iron with 500 mcg folic acid tablets in second half of the pregnancy for a period of at least 100 days.⁷

The key for safe motherhood is reduction of maternal anemia. The risk factors of anemia particularly during pregnancy are multifactorial and complex. Primary health care physicians are the first contact physician in the community who can play a very important role in identification and treatment of anemia. Hence, this study was undertaken with the following aims and objectives: 1) to determine the magnitude of anemia in pregnant women according to severity, 2) to find out association of anemia with different variables.

METHODS

The present study is a retrospective type of study which was conducted over a period of 2 years i.e. 1st April 2019 to 31st March 2021 in the field practice area of Department of Community Medicine, GMC Kathua at Rural Health and Training Center, Budhi. The data was collected from the ANC registers at the Rural Health and Training Center. The total population of the village Budhi is 3656, out of which 109 antenatal females were registered over the period of 2 years. Data regarding their age, religion, socio-economic status, gestational age at the time of registration, gravida, para, birth interval and hemoglobin level was taken from the registers and classified according to the WHO classification, where hemoglobin value <11 gm/dl is defined as anemia in pregnancy. It can be further divided as mild, moderate and severe anemia for hemoglobin level 10.0-10.9 gm/dl, 7-9.9 gm/dl and severe <7 gm/dl.⁸ Data was entered in

Microsoft excel and analysed using Statistical Package for Social Science (SPSS) version 22 statistical software. Descriptive statistics such as frequency, percentages were used to describe dependent and independent variables. P value less than 0.05 was considered statistically significant.

RESULTS

In our present study, 109 antenatal females were included. The demographic characteristics of these females were shown in Figure 1. The most common age group seen was 26-30 years (45%), majority of females were Hindu (95.4%) and belonged to lower socioeconomic status (52.3%).

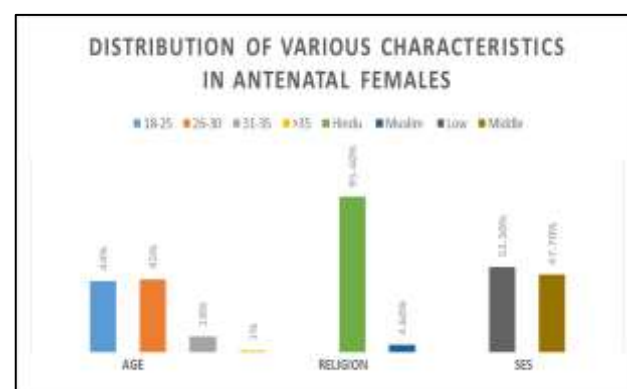


Figure 1: Distribution of antenatal females according to different variable characteristics.

Table 1: Distribution of antenatal females according to their obstetrics history.

Gestational age at the time of registration	Percentage
1 st trimester	73.4
2 nd trimester	26.6
3 rd trimester	-
Gravida	
Primi	36.7
2	45.9
3	17.4
>3	-
Para	
0	42.2
1	47.7
2	10.1
3	-
>3	-
Birth interval	
<1	12.8
1-2	20.2
2-3	22.1
>3	11.0
Not applicable	33.9

Table 2: Association of anemia in antenatal females with age group, religion, socio-economic status, parity, period of gestation and birth interval.

Age/anemia classification	No anemia	Mild	Moderate	Severe	P value
18-25	04	06	38	-	0.01
26-30	02	02	45	-	
31-35	21	02	06	01	
>35	-	-	-	-	
Religion					
Hindu	08	10	85	01	0.81
Muslim	-	01	04	-	
Others	-	-	-	-	
SES					
Lower class	04	05	47	01	0.76
Middle class	04	06	42	-	
High class	-	-	-	-	
Gravida					
Primi	05	02	33	-	0.31
2	02	07	39	01	
3	-	02	17	-	
>3	-	-	-	-	
Para					
Primi	06	03	37	-	0.41
1	02	07	42	01	
2	-	01	10	-	
3	-	-	-	-	
>3	-	-	-	-	
Period of gestation					
1 st trimester	12	09	65	01	0.80
2 nd trimester	03	02	24	-	
3 rd trimester	-	-	-	-	
Birth interval					
<1	01	01	12	-	0.26
1-2	04	02	15	01	
2-3	-	05	19	-	
>3	-	01	11	-	
Not applicable	03	02	32	-	

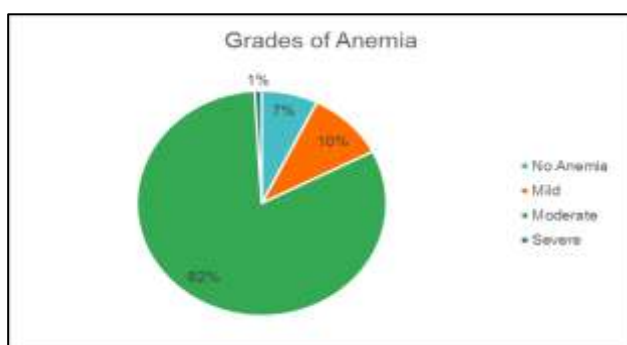
**Figure 2: Distribution of severity of anemia among the antenatal females according to WHO classification.**

Table 1 shows the obstetrics history of the antenatal females, where majority of the females registered themselves in their 1st trimester (73.4%) and around

22.1% of the females had birth interval between 2-3 years, followed by 1-2 years. Among the pregnant females registered, majority of them had moderate anemia (82%), followed by mild anemia (10%). Only 1% of females had severe anemia while rest had no anemia (7%) (Figure 2).

When it comes to the association of anemia in antenatal females with age group, religion, socio-economic status, parity, period of gestation and birth interval, only association with age group came out to be statistically significant ($p=0.01$).

DISCUSSION

Anemia in pregnancy is a major health issue in our country. The reason being low socioeconomic status, less dietary intake of iron and folic acid, short spacing of multiple pregnancies, excessive bleeding during labor, infections like malaria and hookworm infestations which leads to higher morbidity and mortality of both mothers and child.⁹ In present study prevalence of anemia found was 92.7%; which is similar to other Indian studies done by Sinha et al, Lokare et al, Gautam et al, Toteja et al and ICMR Taskforce Multicenter Study.^{1,10-13} On the contrary prevalence was found on the lower side in studies done in Africa by Mahamud et al, Omete et al, and in southern India by Vindhya et al.¹⁴⁻¹⁶ This could be because of the difference in geographical area, socio-economic status, dietary habits, utilization of health care services, etc.

Majority of our antenatal females had moderate anemia (82%) mild anemia (10%) and only one case of severe anemia was found and was similar to the studies done by Sinha et al, Vindhya et al, Mahamud et al, Viveki et al, Sarla et al, Singh et al.^{1,16-19}

Association of anemia with age group was found statistically significant (Table 2) which was similar to the study done by Viveki et al, whereas there was no significant association found between religions, SES which was similar to the studies done by Elhassan et al.^{17,20} Increase in parity is another major risk factor for developing gestational anemia when compared with those who were nulliparous, similar results were found in study done by Baksh et al.^{21,22} This may be owing to the loss of iron, decrease intake and repeated pregnancies.

As a record based study, it cannot reflect all socio-demographic variables, and antenatal factors like maternal education status, occupation, actual iron folic acid consumption, pre-pregnancy hemoglobin status, antenatal nutrition, etc. a prospective design will give more valid results.

CONCLUSION

This study revealed a high prevalence of anemia in antenatal females, irrespective of religion, socio-

economic status, etc. anemia is found to be endemic in this region, due to various unfavorable socio-demographic factors. Although iron-folic acid supplementation is available under National Health Program to address this issue, it is important for primary care physicians to consider and address other risk factors when designing and implementing target intervention for anemia control in selected population. However, mere use of the supplementation during pregnancy cannot solely serve the purpose, as other etiologies like hookworm infestation, malarial infection and other infections may be an issue which needs to be taken under consideration. Health education to create awareness about the importance of early booking for antenatal care are recommended to reduce anemia. Strengthening of the existing adolescent and maternal health interventions focusing towards anemia screening and prevention among reproductive age group. As we all know prevention is the key, therefore, these findings may help our policy makers and health care providers to change policies, add new strategies and educates the society to save from maternal anemia.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Sinha A, Adhikary M, Phukan JP, Kedia S, Sinha T. A study on anemia and its risk factors among pregnant women attending antenatal clinic of a rural medical college of West Bengal. *J Fam Med Prim Care*. 2021;10:1327-31.
2. Gebreweld A, Tsegaye A. Prevalence and factors associated with anemia among pregnant women attending antenatal clinic at St. Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia. *Adv Hematol*. 2018;2018.
3. National Family Health Survey (NFHS-4) 2015-16. Available from: <https://dhsprogram.com/pubs/pdf/FR339/FR339.pdf>. Accessed on 2 February 2021.
4. Haggaz AD, Radi EA, Adam I. Anemia and low birth weight in western Sudan. *Trans R Soc Trop Med Hyg*. 2010;104:234-6.
5. Tadesse SE, Seid O, G/Mariam Y, ÊFekadu A, Wasihun Y, Endris K, et al. Determinants of anemia among pregnant mothers attending antenatal care in Dessie town health facilities, northern central Ethiopia, unmatched case-control study. *PLoS One*. 2017;12:e0173173.
6. Demayer EM, Tegman A. Prevalence of anemia in the world. *World Health Organ Qlty*. 1998;38:302-18.
7. Ministry of Health and Family Welfare. Guidelines for Control of Iron Deficiency Anemia. 2013. Available from: <https://www.nhm.gov.in/images/pdf/programmes/child-health/guidelines/Control-of-Iron-Deficiency-Anaemia.pdf>. Accessed on 2 February 2021.
8. De Benoist B, McLean E, Egli I, Cogswell M. Worldwide prevalence of anaemia 1993-2005: WHO Global Database on Anaemia. Geneva: World Health Organization; 2008.
9. Tolentino K, Friedman JF. An update on anaemia in less developed countries. *Am J Trop Med Hyg*. 2007;77:262-7.
10. Lokare PO, Karanjekar VD, Gattani PL, Kulkarni AP. A study of prevalence of anemia and sociodemographic factors associated with anemia among pregnant women in Aurangabad city, India. *Ann Niger Med*. 2012;6:30-4.
11. Gautam VP, Bansal Y, Taneja DK, Saha R. Prevalence of anemia amongst pregnant women and its socio-demographic associates in a rural area of Delhi. *Indian J Community Med*. 2002;27:157-60.
12. Toteja GS, Singh P, Dhillon BS, Saxena BN, Ahmed FU, Singh RP, et al. Prevalence of anemia among pregnant women and adolescent girls in 16 districts of India. *Food Nutr Bull*. 2006;27:311-5.
13. Toteja GS, Singh P, Dhillon BS, Saxena BN. Micronutrient deficiency disorders in 16 districts of India-Part 1 Report of ICMR Task Force Study. District Nutrition Project. Ansari Nagar, New Delhi: Indian Council of Medical Research; 2001.
14. Mahamoud NK, Mwambi B, Oyet C, Segujja F, Webbo F, Okiria JC, et al. Prevalence of anemia and its associated socio-demographic factors among pregnant women attending an antenatal care clinic at Kisugu health center IV, Makindye Division, Kampala, Uganda. *J Blood Med*. 2020;11:13-8.
15. Omete V, Ukwamedua HA, Bini N, Kashibu E, Ubandoma JR, Ranyang A. Prevalence, severity, and correlates of anaemia in pregnancy among antenatal attendees in Wari, South-Southern Nigeria: A cross-sectional and hospital-based study. *Anemia* 2020;2020.
16. Vindhya J, Nath A, Murthy GV, Metgud C, Sheeba B, Shubhashree V, et al. prevalence and its risk factors of anemia among pregnant women attending a public-sector hospital in Bangalore, South India. *J Fam Med Prim Care*. 2019;8:37-43.
17. Viveki RG, Halappanavar AB, Viveki PR, Halki SB, Maled VS. Prevalence of anaemia and its epidemiological determinants in pregnant women. *Al Ameen J Med Sci*. 2012;5:216-23.
18. Sarala V, Gopalan U. A study on prevalence of anemia in pregnancy in South India. *Int J Reprod Contracept Obstet Gynaecol*. 2020;9:34-7.
19. Singh K, Gupta N, Kapoor A. Retrospective study on prevalence of anemia among pregnant women registered in a urban health training centre in Krishna colony, Kathua, J&K. *Int J Scient Res*. 2020;9(3).
20. Elhassan EM, Abbaker AO, Haggaz AD, Abubaker MS, Adam I. Anaemia and low birth weight in Medani, Hospital Sudan. *BMC Res Notes*. 2010;3(1):1-5.

21. Baksh FM, Bibi S, Mushtaq R, Gul K. Anemia in pregnant women. *J Surg Pak*. 2019;24(3):144-7.
22. Elzahrani SS. Prevalence of iron deficiency anemia among pregnant women attending antenatal clinics at Al-Hada Hospital. *Canadian J Med*. 2012;3:10-4.

Cite this article as: Razdan N, Sangra S, Kiran A. A study on prevalence of anemia among antenatal females registered at rural health training centre, Budhi in district Kathua. *Int J Community Med Public Health* 2022;9:258-62.