

Study on prevalence of anemia and its risk factors among the antenatal mothers attending the antenatal OPD in a Tertiary Care Center, Dibrugarh¹Donna June Syngkli, Postgraduate, Department of Pathology, Assam Medical College and Hospital, Dibrugarh, Assam²Rashmi Deori, Associate Professor, Department of Pathology, Assam Medical College and Hospital, Dibrugarh, Assam**Corresponding Author:** Donna June Syngkli, Postgraduate, Department of Pathology, Assam Medical College and Hospital, Dibrugarh, Assam .**How to citation this article:** Donna June Syngkli, Rashmi Deori, “Study on prevalence of anemia and its risk factors among the antenatal mothers attending the antenatal OPD in a Tertiary Care Center, Dibrugarh”, IJMACR- April - 2023, Volume – 6, Issue - 2, P. No. 401 – 405.**Open Access Article:** © 2023, Donna June Syngkli, et al. This is an open access journal and article distributed under the terms of the creative common’s attribution license (<http://creativecommons.org/licenses/by/4.0>). Which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.**Type of Publication:** Original Research Article**Conflicts of Interest:** Nil**Abstract****Aim:** The aim of the study is to find out the prevalence of the anemia among the pregnant women and to find out its association with the demographic profile**Methodology:** A cross sectional study was done in the department of pathology from July 2021 to June 2022. Based on inclusion and exclusion criteria the final sample size obtained was 150. Baseline history line age, sex, religion, socioeconomic status, occupation was noted. Hemoglobin level noted from the patient’s record. The collected data was entered in MS Excel and statistics were done with the SPSS 16. Categorical variables were expressed in the terms of numbers and percentages. Value <0.05 is considered as significant.**Results:** Majority of the study participants belongs to 20-30 years of age 82(55%). Lower socioeconomic status was observed in 86(57%) most of the study participants. Moderate anemia was found more among the study

participants 90(60%). There is a difference observed between the socioeconomic status and the anemia but it is not statistically significant. Similarly, first antenatal visit had a strong statistically significant association with severity of anemia.

Conclusion: High prevalence of anemia observed in our study which is more than NHFS data 5. Through giving health education and motivating the pregnant mothers to consume iron rich food and supplementation we can reduce the anemia in pregnant which has an impact on maternal and fetal health**Keywords:** Anemia, pregnant, socioeconomic status, maternal, fetal.**Introduction**

Pregnant mothers encounter many health problems in India. Of which Anemia is the major public health problem. Among all the at-risk population it was observed that only in pregnancy women, anemia is a

major public health. The prevalence of anemia ranges from 41.96 % to 57.19% among the pregnant women according to World health organization report (1).Iron deficiency anemia is the most common cause of anemia during pregnancy. Globally 32 million women gets affects during pregnancy (2, 3). The increasing demand, reduced intake, metabolism which is altered along with the socio-demographic characteristics like illiteracy, low socioeconomic status, early age of marriage, susceptibility to hook worm infestations, Malaria and HIV will play a underlying role associated with the prevalence of anemia.

World health organizations stated that prevalence of anemia in developed countries will be around 14% whereas in developing countries like India it will ranges from 65-75% (4). The most common underlying risk factor which causes the Maternal and the Perinatal mortality among Pregnant women is Anemia(5).Maternal anemia had an impact on both the mothers and infants. The death rate of the mothers with anemia was twice compared to mothers without anemia (6). Severe hemorrhage during delivery or during postpartum, heart failure all contributes to anemia (7,8). In fetal component it causes low birth weight, preterm birth and iron deficiency in neonatal period(9,10,11).

WHO defines anemia as hemoglobin level less than 11gm/dl. It is further divided into mild anemia (10-10.9 gm/dl),moderate anemia(7-9.9 gm/dl) and severe anemia (7gm/dl) (12,13).

Methodology

Study setting: Hospital based cross sectional study was conducted in the Department of Pathology, which is a tertiary care Centre. The study was done for a period of one year, from July 2021 to June 2022.

Sample Size: Based on the inclusion and the exclusion criteria the eligible study participants were recruited throughout the study period. The finally obtained sample size is 150.

Inclusion criteria

- Pregnant women attending the antenatal OPD >18 years of age
- Pregnant women with different gestational weeks
- Pregnant women who is having the hemoglobin report

Exclusion criteria

- Pregnant women not willing to participate
- Pregnant women with major obstetrical complications
- Pregnant women with history of steroids intake in the last one year

After obtaining the Institutional Ethical committee clearance the study was conducted for one year. Baseline characteristics like Age, Sex, Religion, Socioeconomic status, occupation was noted. Socioeconomic status was assessed by Kuppusamyscale. Hemoglobin level is noted from the patients record. All hemoglobin level is estimated using the cyanmethemoglobin level. Based on WHO criteria Anemia was classified, where <7 gm/dl considered as severe anemia,7-9.9 gm/dl is considered as Moderate anemia and 10-10.99 gm/dl considered as mild anemia.

Statistical analysis

The collected data was entered in MS excel and Statistical analysis was done in SPSS 23. Continuous data were expressed in terms of Mean and Standard deviation. Categorical variable were expressed in terms of numbers (percentages).Association between categorical variables were done using Chi square test value of <0.05 is considered as significant.

Results

Table 3: Association of severity of anemia with first antenatal checkup

Anemia	First Trimester	Second Trimester	Third Trimester	Total	Chi Square	P Value
Moderate + Severe	7(7.6%)	40(43.5%)	45(48.9%)	92(100%)	45.39	<0.0001*
Mild Anemia + Normal	32(55%)	6(10%)	20(35%)	58(100%)		
Total	39(26%)	46(31%)	65(43%)	150(100%)		

The severity of the anemia was found to be associated with the first-time antenatal checkup and the difference found to be statistically significant.

Discussion

Anemia in pregnancy is still a major health problem. This may be due to less intake of iron and folic acid, malaria infection and hookworm infestations (12). The prevalence of Anemia in Assam according to NHFS V data projected that it raises to 52.2% from 50.4% in the year 2015 to 2016(13). This is lesser than the prevalence in our study which is 135(90%). Similar results also seen in the study conducted Gautam et al(14), Lokare et al(15), Toteja et al(16) and icmrtaskforce center study(17). Whereas studies done in the African continent stated lower prevalence of anemia in pregnant women which varies from 25.8% to 27.6%. This may be due to sociodemographic characteristics and comorbid illness which varies with individual (18,19).

In our study moderate anemia was most commonly found among the study participants 90(60%) followed by mild anemia 44(29%). This was similar to the results of the studies done by Sinha et al (20), Vindhya et al(21), Sarala V et(22) and Mahamud et al.(18).

As socioeconomic status increases the severity of anemia decreases in our study which is similar to results of Sinha et al(20), Toteja et al(16) and Lokarepo et al(15). The time at which the participant came for ANC visit has a role in reducing the maternal anemia. As soon as the study participant came to visit in the first trimester

the anemia status was assessed early, proper diet was advised and iron and folic acid tablet was supplied. This eventually reduces the severe anemia condition in our study. This is similar to results of Sinha et al and Mangala et al (23).

The compliance for consuming iron and folic acid tablet was found to be less among majority of the pregnant mothers. This may be due to low efficacy of policies laid by the government to supply iron folic acid regularly. Education related to the consumption of iron and folic acid and motivation to do it will help in reducing anemia. Other causes of the hook worm infestations and malarial infection should also be considered during pregnancy period.

Conclusion

Our study found quite a high prevalence of anemia in pregnancy. Anemia was found to be seen more in younger age group and in low socio-economic status. Late first antenatal visit also has an impact on the hemoglobin status of the study participants. Thus it is essential to give health education related to the antenatal visits and its uses to the mothers during their early visit. Health education related to iron rich foods should be given to the adolescent girls as they are the mothers tomorrow.

Recommendations

It is recommended to do a case control study to find the risk factors and its association with the anemia. Secondly, we have to find the etiology of anemia so that we can find the most common type of anemia during pregnancy and can take necessary preventive measures at the earliest possible.

Limitation

The main limitation of the study is the small sample size. We have not assessed the association between the anemia

and its risk factors as our study is a cross sectional design. No specific test was done to rule out hook worm infestations or malaria. Red blood cell morphology was not recorded as it will help us in finding the etiology of anemia.

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