Frequency of Anemia in Pregnant Females Presenting in Gynae Outdoor, Shalamar Hospital Lahore

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ABSTRACT

Background: Anemia is decreased oxygen transferring capacity of blood to meet the physiological needs of the body. There are multiple factors which increase the risk of anemia in pregnancy.
Aim: To determine the frequency of anemia and factors related to anemia in pregnant women.
Methodology: The study design of our research was cross-sectional. The study was conducted in gynae OPD, Shalamar Hospital Lahore. The subjects of our study were pregnant women.
Results: We found that out of 70 patients 72.85% were anemic and 27.14% were non anemic. Hb level of the most of anemic women was between 9-7g/dl. 94.7% patients above the age of 30 were anemic. Only 12 patients were illiterate and 83.33% patients, were anemic whereas 58 patients were literate (with 17 non-anemic and 41 anemic). Out of women having past history of pregnancy 40(76.9%) of were anemic and 12(23.1%) were non anemic. Those presented with anemia 38(74.5%) had not taken any iron supplement while 13 (25.5%) had taken some iron supplement. Similarly those presented without anemia only 2(10.5%) had taken any iron supplement while 17(89.5%) had not taken some iron supplement. 35 patients were in 9-7 month of pregnancy were anemic, 68.6% patients were anemic, 11 patients (21.5%) in 4-6 months of pregnancy were anemic.
Conclusion: Anemia was found more in multigravida, pregnant women above the age of 30, not taking any iron supplements and during third trimester and no relationship was observed between milk consumption and anemia. Majority had the complaint of shortness of breath.
Keywords: Anemia, pregnant female, illiterate

INTRODUCTION

Anemia is defined as decreased oxygen carrying capacity of blood due to decreased RBCs or decreased hemoglobin in the blood. Anemia is classified into mainly three types:1. Due to: 1. Blood loss. 2. decreased red blood cell production and 3. increased hemolysis or hemodilution[1].

Anemia is an important global public health problem affecting most of the pregnant females[1]. In developing countries, among childbearing women anemia prevalence ranges from 22.8%[2] to 73%[3], indicating malnutrition and poor health.

During pregnancy the amount of blood increases upto 20-30% than usual to support the growth of baby, which increases the need to make hemoglobin. Iron being the integral part of hemoglobin, is required more in body to make hemoglobin. If woman lack the sufficient amount of iron and vitamins (B12 and folic acid) needs, can become anemic.

Normal value of hemoglobin range is different among males, females normally or during pregnancy and children. Males are anemic if their Hb level is less than 130- 140g/L or 13-14g/dl and non pregnant

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females are anemic if their Hb level is less than 120-130g/l or 12-13g/dl and pregnant females are nemic if their Hb level is less than 11-12g/dl. While in children it ranges from 11-16 g/dl and in newborn it ranges from 14-24g/dl.

Antenatal examination and blood tests are helpful for diagnosis of anemia. Hemoglobin test and hematocrit test are prescribed to find out anemia. Mild anemia is normal in pregnancy. Mild anemia causes pale, cold skin, lips, nails, dizziness, shortness of breath, rapid heartbeat, palpitations, low blood pressure, splenomegaly, changed stool color muscular weakness, lethargy and inability to concentrate or confusion. While in severe anemia there may be fainting, chest pain, angina, heart attack accompanied with other symptoms. Maternal anemia is a common pregnancy complication worldwide. WHO has defined anemia as Hemoglobin concentration <11/g/dl in pregnancy[1].

WHO suggests classification of the public significance of anemia according to the prevalence estimates of blood Hb levels and proposes four grades of significance for countries including "normal" (<5%), "mild" (50-19.9%), "moderate" (20.0-39.9%) and "severe" (≥40%) anemia[1].

Maternal Anemia is common in developing countries. Nutritional anemia is the most common

type of anemia worldwide and mainly includes iron, folic acid, vitamin B_{12} and vitamin C deficiencies[1,5].

Majority of these conditions can be averted by creating awareness & providing timelyinterventions[7-10] Mild iron-deficiency anemia can be treated by oral iron supplementations. Vitamin C also helps to absorb iron from gut. In anemia of chronic diseases, particularly associated with chemotherapy or with renal disease, some doctors recommend recombinant erythropoietin to stimulate RBCs production. Blood transfusions are usually not recommended until the hemoglobin is less than 6 to 8g/dL[4].

The aim of the study was to calculate the frequency of anemia in pregnant women, reporting at Shalamar Hospital, Lahore and to enlist the factors related to anemia among these pregnant women.

RESEARCH METHODOLOGY

Cross-sectional study, this study was conducted in Gynae Outdoor, Shalamar Hospital, Lahore, which has an outpatient attendance of 200 patients (on an average) per day. The study was conducted from May-July 2015.The sampling technique used was Non probability technique.

The sample size was estimated by using WHO S-size software and formula of estimating population proportion with supposed relative precision at confidence level of 95% with anticipated population proportion of 70% and with relative precision(relative error) of 15%, the minimum sample size was 70.

All pregnant women visiting gynae OPD were included in the study. While pregnant women, who were not able to participate in research due to some complication were excluded in the study.

Operational definition: It is defined as a condition with decreased number of red blood cells or when their oxygen carrying capacity is insufficient to meet physiologic needs of the body. Normal Hb level in pregnant is 11-12g/dl, below this are categorized anemic.

Data collection procedure: We visited gynae OPD of Shalamar Hospital Lahore daily for a week and interviewed 12-15 pregnant ladies daily from 10:30 - 11 am. Pregnant ladies presenting with complaint of anemia, receiving antenatal care in the OPD were interviewed. Variables of interest included age, educational level, occupation, income, duration & number of pregnancy, antenatal care properly, hemoglobin level, weight, height and BMI. Variables related to the risk factor in the subject were presence of any weakness or lethargy during pregnancy, previous history of miscarriage, menstrual cycle regularity, blood loss during menses, family size, age of last child born and history of malaria/dengue/respiratory disease/GIT problem and

any hemorrhagic disorder. Moreover we asked about the knowledge of normal dose of iron, any blood test performed and response of subject after attending regular visit to doctor.

Data was analyzed through SPSS version 20. Quantitative data was demonstrated by mean and standard deviation. Qualitative data was indicated through graphs and frequency distribution tables.

RESULTS

Out of total 70 patients, 51 (72.85%) patients were found to be anemic. The non anemic patients were 19 (27.15%) (Table 1).Mean (±sd) age of study subject was 27(±4.4) years. Only 12 Patients were illiterate and 10 out of those 12 patients, that was 83.33% of total illiterate patients, were anemic. Whereas 58 patients were literate and 17 out of them were non-anemic and 41 were anemic (Table 2).

Out of all women presented in their first pregnancy, 11(61.1%) were anemic, where as 7(38.9%) were non anemic.Out of women having past history of pregnancy 40(76.9%) were anemic and 12(23.1%) were non anemic.

Out of 70 patients, those presented with anemia 38(74.5%) had not taken any iron supplement while 13(25.5%) had taken some iron supplement. Similarly those presented without anemia only 2(10.5%) had taken any iron supplement while 17(89.5%) had not taken iron supplements.So this shows that taking Iron supplements during pregnancy reduces anemia to a marked level (Table 4).

Out of 70 patients, 35 patients were in 9-7 month of pregnancy were anemic, 68.6% patients were anemic, 11 patients(21.5%) in 4-6 months of pregnancy were anemic and only 5 patients(9.8%) in 1-3 month of pregnancy were anemic. This shows that as the age of the fetus increases risk of anemia in the pregnant woman also increases (Table5).

49 out of 70 patients had the complaint of shortness of breath and out of those 49 patients 39 patients, 79.6% of patients, had anemia. This shows a strong relation between anemia and shortness of breath in pregnant women (Table 6).

Out of 70 patients 56 were taking milk once a day and out of those 56 patients 40 women,78.4% of pregnant women had milk atleast once a day but still were suffering from anemia. This signifies that consumption of milk don't have any effect on anemia prevention (Table 7).

Table 1: Distribution of anemia among pregnant females according to their ages. Comparison of mean age between anemic and non-anemic

Hemoglobin status	Anemia	No anemia
No observations	51	19
Mean age	27	27
Standard deviation	4.4	4.4

Table 2: Distribution of anemia among pregnant females according to their Education (n=70)

Variables	Non anemia		Anemic		Total
	Frequency	%age	Frequency	%age	
Illiterate	2	10.52	10	19.6	12
Literate	17	89.47	41	80.4	58

Chi square=0.804, df=1, P value: 0.35

Table 3: Distribution of anemia among pregnant females with respect to no. of pregnancy.

Variables	Non anemic		Anemic		Total
	Frequency	%age	Frequency	%age	
PrimiGravida	7	36.8	11	21.6	18
MultiGravida	12	63.1	40	78.4	52

Chi-square value=1.691 df=1 P-value 0.160

Table 4: Distribution of anemia among pregnant females taking iron supplements during pregnancy.

Variables	Non anemic		Anemic		Total
	Frequency	%age	Frequency	%age	
Yes	17	89.5	13	25.5	30
No	2	10.5	38	74.5	40

Chi-square value =23.389 df=2 P-value=0.00

Table 5: Distribution of anemia among pregnant females with respect to duration of pregnancy.

Variables	Anemic				Total	
	No		Yes		Frequency	%age
	Frequency	%age	Frequency	%age		
1-3 months	2	10.5	5	9.8	7	10
4-6 months	6	31.6	11	21.5	17	24.3
9-7 months	11	23.9	35	68.6	46	65.7

Table 6: Distribution of shortness of breath among anemic pregnant women.

Variables	Anemic				Total	
	No		Yes		Frequency	Total
	Frequency	%age	Frequency	%age		
No	9	42.9	12	57.1	21	30
Yes	10	20.4	39	79.6	49	70

Table 7: Distribution of anemia in pregnant females taking milk. Frequency of milk consumption

Variables	Anemic				Total	
	No		Yes		Frequency	Total
	Frequency	%age	Frequency	%age		
Once a day	16	84.2	40	78.4	56	80
Once a week	2	10.5	4	7.8	6	8.6
Twice a week	1	5.3	7	13.7	8	11.4

DISCUSSION

The main purpose of conducting this study was to find out the frequency of anemia in pregnant females attending gynae OPD. Out of 70 patients under observation 51(72.85%) were found out to be anemic and 19(27.14%) were non-anemic. The mean age group of the patients with anemia and that of non anemic was found out to be 27 years. Out of 51 anemic patients 83.3% were illiterate and 70.7% were literate. Our study showed that 61.1% of patient in their first pregnancy were anemic where as 76.9% of patients having past history of pregnancy were anemic. Only 23.1% of multigravida women were non anemic.

The study also showed that 40 out of 70 patients who did not take any Iron supplements during pregnancy and out of those 40 patients 95% of them were anemic, whereas only 43.3% of patient taking Iron supplements had anemia during pregnancy. Out of 70 pregnant females underobservation 68.6% were in their 7-9month of gestation and were anemic. This markedly shows that as the age of the fetus increases the chances of anemia in the pregnant woman also increases. The study also depicted 40 out of 70 patients had the complaint of shortness of breath and out of those 40 patients 79.6% of patients, had anemia. The study also revealed that 78.4% of anemic pregnant women had milk atleast once a day but still were suffering from anemia.

One of the limitations of this study was that hemoglobinconcentrations were not done by the authors themselves so we are not sure about the certainties. One other major limitation was that patient did not know their heights and weight so it was difficult for us to calculate the BMI of the patients. The chance of personal error on the part of the researcher is also there. There might be any negligence during the entry of data into the SPSS software. There could also be negligence on the part of patient as they might not have given the accurate information. However this doesn't bias the validity of the study since many retrospective studies done previouslyas there is medical literature who have obtained data from the medical records.

There should be more researches conducted on this topic as it is a major public health problem. Pregnant female should be informed that the proper antenatal care is important also the pregnant female should be advised to have a regular hemoglobin concentration check to avoid anemia.

In our study we found that multigravida were more anemic as compared to primigravida which is in line or parallel to a research in Turkey in 2010,a study in pregnant women in Jordan was conducted in 2012, Another study which was also conducted on pregnant women in Abeokuta, Nigeria in which Four hundred and seventy-seven (477) women were registered in the study. A total of 155 primigravida and 322 multigravida were registered.

We also found that with the increasing duration of pregnancy there are increased chances of getting anemia. We found that in late duration of pregnancy (in last trimester) more women get anemia which is parallel to the following studies;A study of 302 pregnant ladies in Gondar, Northwest Ethiopia in 2014, A study in Pregnant Women in the SidiBel Abbes Region (West Algeria) in 2011 showed that in a total of 242 pregnant women, A study in pregnant women in Jordan was conducted in 2012. The sample size was 1030; which indicated the highest prevalence of severe anemia in third trimester , In a research in Turkey in 2010, a sample size of 823 pregnant women were taken and anemia was more frequent during third trimester.

The studies prevailing in the South Asia the frequency of anemia was found out to be in a range of 65% to 75%. In India almost 88% of pregnant females had anemia. In Pakistan it is also a serious health problem and itsfrequency is also high. One study conducted in the Hyderabad showed the frequency of 70% anemic pregnant females. Another study conducted in Karachi showed the frequency of anemia about 54%. One more study conducted in Khairpur showed the frequency of anemia about 70%.

CONCLUSION

Anemia was found more in multigravida, pregnant women above the age of 30, not taking any iron supplements and during third trimester and no relationship was observed between milk consumption and anemia. Majority had the complaint of shortness of breath.

RECOMMENDATIONS

- Awareness of anemia during pregnancy should be produced through effective media, TV, newspaper, radio etc.
- Health awareness seminars, regarding pregnancy, should be held to increase knowledge of pregnant women about their physical activity, diet and rest etc.
- Awareness of taking proper antenatal care should be produced.
- Pregnant women should keep check on Hb level by Hb tests.

REFERENCES

1. McLean E, Cogswell M, Egli I, Wojdyla D, De Benoist B. Worldwide prevalence of anaemia, WHO vitamin and mineral nutrition information system, 1993-2005. Public health nutrition. 2009 Apr 1;12(4):444.
2. Camacho M, Shamah T, Villalpando S, Rivera JA, Mejía F, Monterrubio EA. Anemia in Mexican women: A public health problem.SaludPublica Mex. 2003;45Suppl 4:499–507
3. Hyder SZ, Persson LÅ, Chowdhury AM, EkstroÈm EC. Anaemia among non-pregnant women in rural Bangladesh. Public health nutrition. 2001 Feb 1;4(01):79-83.
4. Mulayim B, Celik NY, Yanık FF. Helicobacter pylori infection detected by 14C-Urea breath test is associated with iron deficiency anemia in pregnant women. Journal of Obstetrics and Gynaecology Research. 2008 Dec 1;34(6):980-5.
5. Abdelrahman EG, Gasim GI, Musa IR, Elbashir LM, Adam I. Red blood cell distribution width and iron deficiency anemia among pregnant Sudanese women. Diagnostic pathology. 2012 Dec 3;7(1):168.
6. Walter T. Effect of iron-deficiency anemia on cognitive skills and neuromaturation in infancy and childhood. Food and Nutrition Bulletin. 2003 Oct 1;24(4 suppl2):S104-10.
7. Garcia J, Datol-Barrett E, Dizon M. Industry experience in promoting weekly iron-folic acid supplementation in the Philippines. Nutrition reviews. 2005 Dec 1;63(suppl 2):S146.
8. Griffin JT, Hollingsworth TD, Okell LC, Churcher TS, White M, Hinsley W, Bousema T, Drakeley CJ, Ferguson NM,. Reducing Plasmodium falciparum malaria transmission in Africa: a model-based evaluation of intervention strategies. PLoS Med. 2010 Aug 10;7(8):e1000324.
9. Guyatt HL, Snow RW. The epidemiology and burden of Plasmodium falciparum-related anemia among pregnant women in sub-Saharan Africa. The American journal of tropical medicine and hygiene. 2001 Jan 1;64(1 suppl):36-44.
10. Buseri FI, Uko EK, Jeremiah ZA, Usanga EA. Prevalence and risk factors of anaemia among pregnant women in Nigeria. The Open Hematology Journal. 2008 Apr 7;2(1).