

Prevalence of Anemia among Pregnant Women Attending OPD in a Tertiary Teaching Medical College Hospital in Bangladesh

Tania Akbar¹, Kamrun Nessa^{2*}, Sanjida Khan¹, Mst Shahina Begum Shanta², Rahat Afza Chowdhury² and Zannat Ara Begum²

¹Department of Obstetrics & Gynecology, Enam Medical College & Hospital, Savar, Dhaka, Bangladesh.

²Department of Obstetrics & Gynecology, BRB Hospital, Panthopath, Dhaka, Bangladesh.

*Correspondence:

Kamrun Nessa, Professor, Department of Obstetrics & Gynecology, BRB Hospital, Panthopath, Dhaka, Bangladesh, Tel: 8801720024855; E-mail: Knessa3@gmail.com.

Received: 13 March 2018; Accepted: 28 April 2018

Citation: Tania Akbar, Kamrun Nessa, Sanjida Khan, et al. Prevalence of Anemia among Pregnant Women Attending OPD in a Tertiary Teaching Medical College Hospital in Bangladesh. *Gynecol Reprod Health*. 2018; 2(2): 1-4.

ABSTRACT

Background: Anemia is a major public health problem especially among the population of poor group in developing countries like Bangladesh. WHO report that 35% to 75% pregnant women in developing countries & 18% in developed countries are anemic.

Methods: This prospective cross sectional observational study was designed to see the percentage of anemic pregnant patient attending OPD from March 2014 to February 2015 in Dhaka Medical College Hospital which is a tertiary teaching hospital. 2592 pregnant patients were attended in OPD, among them 1054 anemic patients were selected for the study. Data taken regarding age, parity, occupation, social status, education level, severity of anemia. Patients with history of threatened abortion, antepartum hemorrhage, and chronic blood loss were excluded. This study shows prevalence of anemia was 40.67%. All data were analyzed through SPSS 20.

Results: In this study 1054 patients were selected. Age of the patients were in between 18-40 years, mean age 32.26 with SD 3.55. Among them 246 patients (23.34%) were primi and 808 patients (76.66%) were multigravida. Gestational age of 210 patients (19.92%) were < 28weeks and 844(80.08%) patients were above. 984 patients (93.36%) were housewife and 70(6.64%) were service holder. 282 patients (26.75%) were illiterate, 350 patients (33.20%) have completed primary level and 422(40.02%) were completed secondary and higher. From middle class family 566(53.70%), 374 patients (35.48%) were from poor class and rest from upper class 114 (10.82%). Regarding severity of anemia 644 (61.10%) patients were moderately anemic, 398 (37.76%) had mild and 12(1.14%) had severe anemia.

Conclusion: Prevalence of anemia during pregnancy is high. So, prophylaxis is necessary to reduce the burden.

Keywords

Anemia, Pregnancy, Severity of anemia, Gestational age.

Introduction

Anemia is a global health problem affecting both developed and developing countries with severe consequences on health as well as social and economic development [1]. WHO reports that 35% to 75% of pregnant women in developing countries and 18% of women in developed countries are anemic [2]. Anemia is the commonest medical issue of developing countries where it has a

vital contributing factor to maternal morbidity and mortality and also associated with high perinatal mortality rates [3]. Anemia in pregnancy is considered severe when haemoglobin concentration is less than 7.0 gm/dl, moderate when haemoglobin concentration is between 7.0 gm to 9.9 gm/dl and mild when haemoglobin concentration is from 10.0 gm/dl to 11.0 gm/dl [4]. Iron deficiency anemia has been found to predispose pre-term labour, abnormally low birth weight, maternal mortality when severe [5]. Most important causes of anemia in pregnancy is nutritional deficiency either iron or folate deficiency or in combination [6-14].

Study on anemia in pregnancy in tertiary level hospital can give us a whole picture of anemic patient of all socioeconomic groups came here to get health services during this study period.

Methods

This prospective cross sectional observational study was conducted in Dhaka Medical College & Hospital which is a tertiary teaching hospital in Bangladesh, during the period of March 2014 to February 2015. During this period 2592 pregnant patients attended OPD & 1054 patients were diagnosed as anemic patient. Age of the patients, parity, gestational age, occupational status, socio-economic status, education level, severity of anemia was noted. Patient with history of threatened abortion, antepartum hemorrhage, and chronic blood loss (bleeding piles, anal fissure etc) were excluded. Study was ethically approved by Ethical Review Committee of Dhaka Medical College Hospital. All data was entered in SPSS windows version 20 & analyzed through it.

Results

In this study 1054 patients were selected. Age of the patients were in between 18-40 years, mean age 32.26 with SD ± 3.55 . Among them 246 patients (23.34%) were primi and 808 patients (76.66%) were multigravida. The results were statistically significant ($P < 0.05$). From 1054 patients gestational ages of 210 patients (19.92%) were below 28 weeks of gestation and 844 (80.08%) patients were above 28 weeks of gestation. The difference was statistically significant ($P < 0.05$). Among this patients 984 patients (93.36%) were housewife and 70 (6.64%) were service holder. About 282 patients (26.75%) were illiterate, 350 patients (33.20%) have completed primary level of education and 422 (40.02%) were completed secondary and higher level of education. Most of the patients were from middle class family that is 566 (53.70%), 374 patients (35.48%) were from poor social class and rest from upper social class is 114 (10.82%). Regarding severity of anemia maximum 644 (61.10%) patients were moderately anemic followed by 398 (37.76%) had mild anemia and only 12 (1.14%) had severe anemia.

Figure 1 shows distribution of level of education of study group. 40.04% of the respondent had education level at or above secondary school certificate. 33.20% had primary education and 26.76% were illiterate.

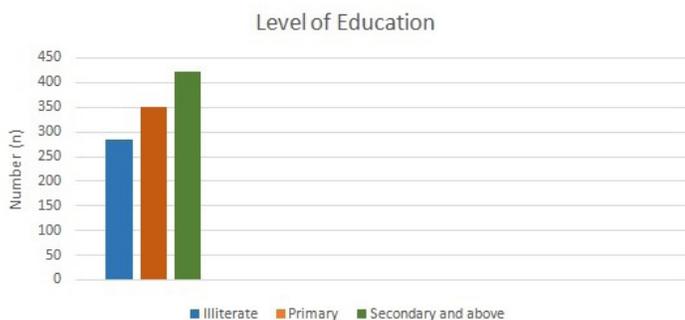


Figure 1: Distribution of level of education of study group (n=1054)

Figure 2 shows distribution of gestational age of study population. Majority of the sample 80.08% were ≥ 28 weeks of gestation

and 19.92% were < 28 weeks of gestation. The difference was statistically significant ($P < 0.05$).



Figure 2: Distribution of gestational age of study population (n= 1054)

Figure 3 shows distribution of severity of anemia among the study population. 644 patients (61.10%) had moderate anemia followed by 398 patients (37.76%) had mild anemia and only 14 patients (1.14%) had severe anemia.

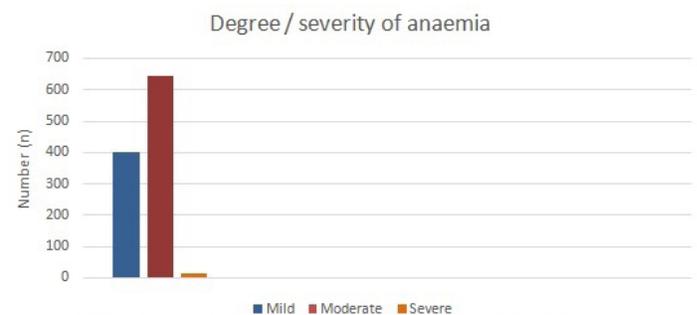


Figure 3: Distribution of severity of anemia among the study population.

Table 1 shows the prevalence of anemia was 40.67%.

Total attending patients (during twelve months)	Number of anemic patients	Percentage (%)
2592	1054	40.67

Table 1: Prevalence of anemic women attending OPD in DMCH.

Table 2 shows distribution of age of study population. Age of the study population range from 18-40 years, mean age was 32.36 3.55 SD. Maximum number of anemic patients were in 28-37 age group.

Age	Number (n)	Percentage (%)	Mean \pm SD
18-27	82	7.78	32.36 \pm 3.55
28-37	926	87.86	
38-40	46	4.36	
Total	1054	100	

Table 2: Distribution of age of study population (n=1054).

Table 3 shows distribution of parity of the study population. Incidence of anemia was more prevalent in multiparous women (76.66%) in comparison to primiparous women (23.34%). The difference was statistically significant ($P < 0.05$).

Parity	Number (n)	Percentage (%)	P value
Primipara	246	23.34	0.001
Multipara	808	76.66	

Table 3: Distribution of parity of the study population (n= 1054).

Table 4 shows distribution of economic status of the study population. Most of the Patients were from middle social class (53.70%). 35.48% was from poor social class and rest from upper social class (10.82%).

Social class	Number (n)	Percentage (%)
Poor	374	35.48
Middle	566	53.70
Upper	114	10.82
Total	1054	100

Table 4: Distribution of economic status of the study population (n=1054).

Table 5 shows distribution of study population in association with economic status and degree of anemia. Poor class member mostly suffered from moderate anemia (79.68%) and severe anemia (3.74%). Middle class suffered mostly from moderate anemia (52.30%) and mild anemia (47.7%). The upper class women mostly had mild anemia (61.40%). The difference was statistically significant (P< 0.05).

Social class	Number (n)	Mild		Moderate		Severe		P value
		No.	%	No.	%	No.	%	
Poor	314	62	16.58	298	79.68	14	3.74	0.001
Middle	566	270	47.70	296	52.30	0	00	
Upper	114	70	61.40	44	38.60	0	00	

Table 5: Distribution of study population in association with economic status and degree of anemia.

Table 6 shows distribution of level of occupation of study group. It shows 93.36% were house wife and 6.64% were service holder. The difference was statistically significant (P< 0.05).

Social class	Number (n)	Percentage (%)	P value
House wife	984	93.36	0.001
Service holder	70	6.64	

Table 6: Distribution of level of occupation of study group (n=1054).

Table 7 shows distribution of study population in relation to gestational age and degree of anemia. Mild anemia was more in women with gestational age < 28 weeks than in women with gestational age ≥ 28 weeks (70.48% vs 29.52%).

On the other hand moderate anemia is more in ≥ 28 weeks gestation which was 68.72% vs 29.52%. There was no case of severe anemia in < 28 weeks group but only 14 cases was detected in ≥ 28 weeks gestational age group. The difference was statistically significant (p< 0.05).

Gestational age	Number (n)	Mild		Moderate		Severe		P value
		No.	%	No.	%	No.	%	
< 28 weeks	210	148	70.48	62	29.52	0	00	0.001
≥ 28 weeks	844	250	29.62	580	68.72	14	1.66	

Table 7: Distribution of study population in relation to gestational age and degree of anemia.

Table 8 shows distribution of study population in association with parity and degree of anemia. Most of the primipara had mild anemia (61.79%) but the most multipara had moderate anemia (67.82%). There is no case of severe anemia in primipara group. The difference was statistically significant (P<0.05).

Parity	Number (n)	Mild		Moderate		Severe		P value
		No.	%	No.	%	No.	%	
Primipara	246	152	61.79	94	38.21	0	00	0.001
Multipara	808	426	30.45	548	67.82	14	1.73	

Table 8: Distribution of study population in association with parity and degree of anaemia.

Discussion

This study revealed that the prevalence of anemia in women attending OPD of Dhaka Medical College Hospital were 40.67% which is higher than study conducted in Addis Ababa (21.3%) & Northwest Ethiopia (16.6%) but lower than the Study conducted in India (87-100%), Boditi (61%), Gode town Eastern Ethiopia (56.8%) [15-18]. This variation might be due to different geographical factors across different areas of the world.

In the current study, moderate anemia was found to be more common followed by mild anemia. Other several studies conducted in some African countries and elsewhere in the world found mild anemia is more common [16-17] [19-25]. Regarding severity of anemia it was found that 28-37 age group were prone to develop moderate anemia, there was a single case of severe anemia in this age group. 18-27 age groups suffered from mild anemia.

This study showed that age of the patients ranging from 18-40 years, mean age was 32.16 3.55 SD. Maximum 87.86% patients were in 28-37 age group . Monthly income was significantly associated with anemia in pregnancy. Most of the patients were from middle social class (53.70%) followed by poor social class (35.48%) and rest from upper class family (10.82%). Other studies showed that patients from lower income group are more prone to develop anemia [15-17].

In this study we found that pregnant patient with anemia have educational background of primary, secondary or no education were 33.21%, 40.04% & 26.76% respectively. It was observed that highest numbers of patients were from educated group but illiterate and primary level groups were suffered from moderate to severe anemia. K. Kalaivani et al. studied on prevalence and consequences of anemia in pregnancy and found that higher income group (50%) were anemic more than middle and lower income group [26]. Jamaiah Haniff et al. found anemia in tertiary,

secondary & lower secondary level of education was 18.0%, 20.8% & 61.2%, respectively [27].

This study showed that mild, moderate & severe anemia was 37.76%, 61.10%, 1.14% respectively. Riffat Jalil et al. studied on 51 pregnant women admitted for delivery & compared with 108 non-anemic women of similar features & found that frequency of anemia was 69.9% and severe anemia was 4.8% [28]. B. Mahamuda et al. observed in her study that mild, moderate & severe anemia was 45%, 21.67% & none respectively [29].

References

1. McLean E, Cogswell M, Egli I, et al. Worldwide prevalence of anemia, WHO Vitamin and Mineral Nutrition Information System, 1993-2005. *Public health nutrition*. 2009; 12: 444-454.
2. World Health Organization. The prevalence of anemia in women: a tabulation of available information. 2nd edition. Geneva: World Health Organization. 1992.
3. Whitfield CR. Blood disorder in pregnancy. In Whitfield CR, editor. *Dewhurst's textbook of obstetrics and gynecology for postgraduates*. 5th edn. Oxford: Blackwell Science. 1995; 228-235.
4. Balarajan Y, Ramakrishnan U, Ozaltin E, et al. Anemia in low income and middle income countries. *The Lancet*. 2011; 378: 2123-2135.
5. Klebanoff MA, Shiono PH, Shelby JV, et al. Anemia and Spontaneous preterm birth. *AM J Obstet Gynecol*. 1991; 164: 59-63.
6. Brain J Koos, Pamela J Moore. Maternal physiology during pregnancy, iron deficiency anemia and folic acid deficiency anemia in: Decherney AH and Nahar L. *Current Obstetrics & Gynecology diagnosis and treatment*. 2003; 338-353.
7. Aris F. Hematological problems during pregnancy. In: Arias F (editor) *Practical guide to high risk pregnancy and delivery*. 2nd ed. Bangalore; Harcourt Brace and Company Asia Pvt Ltd. 1997; 183-210.
8. Gambling L, Mcardle HJ. The effect of nutrient deficiency on fetal development, pregnancy outcome and adult metabolism. *Arch Tierz*. 2003; 46: 130-141.
9. McLintock C, Repke JT, Bucklin B. Hematologic disease in pregnancy. In: Powrie R, Greene M, Camann W. eds. *De Swiets Medical disorders in obstetric practice*, 5th ed. USA: Blackwell. 2010: 48-81.
10. Breymann C. Iron deficiency anemia in pregnancy modern aspect of diagnosis and therapy. *Blood cells, molecules, and Diseases*. 2002; 29: 506-516.
11. Haque M, Kader SB, Hoque E. Prevalence of anemia in pregnancy in the uthungulu health district of Kwazulu- Natal, South Africa. *SA Fampract*. 2007; 49: 16-20.
12. Scholl TO. Iron status during pregnancy: setting the stage for mother and infant. *Am J Clin Nutr*. 2005; 81: 1218S-1222S.
13. Levy A, Fraser D, Katz M, et al. Maternal anemia during pregnancy is an independent risk factor for low birth weight and preterm delivery. *Eur J Obstet Gynecol Reprod Biol*. 2005; 122: 182-186.
14. Slattery MM, Morrison JJ. Preterm delivery. *Lancet*. 2002; 360: 1489-1497.
15. Gibson RS. *Principles of Nutritional Assessment*, Oxford University press, New Work, NY, USA, 2nd edition. 2005.
16. Melku M, Addis Z, Alem M, et al. Prevalence and predictors of maternal anemia during pregnancy in Gondar, Northwest Ethiopia: an institutional based cross-sectional study. *Anemia*. 2014; 9.
17. Vemulapalli B, Rao KK. Prevalence of anemia among pregnant women of rural community in Vizianagram, North coastal Andhra Pradesh, India. *Asian journal of Medical science*. 2014; 5: 21-25.
18. Lelissa D, Yilma W M, Shewalem, et al. Prevalence of anemia among pregnant women attending antenatal care at Boditi Health Center, Southern Ethiopia. *Clinical Medicine Research*. 2015; 4: 79-86.
19. Lokare PO, Karanjekar VD, Gattani PL, et al. A study of prevalence of anemia and sociodemographic factors associated with anemia among pregnant women in Aurangabad city, India. *Annals of Nigerian Medicine*. 2012; 6: 30-34.
20. Alene KA, Dohe AM. Prevalence of anemia and associated factors among pregnant women in an urban area of Eastern Ethiopia. *Anemia*. 2014; 7.
21. Hailujufar A, Zewde T. Prevalence of anemia among pregnant women in attending antenatal care at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia. *Journal of Hematology & Thromboembolic Disease*. 2013; 2: 1.
22. Dim CC, Onah HE. The prevalence of anemia among pregnant women at booking in Enugu, South Eastern Nigeria. *Medscape General Medicine*. 2007; 9: 11.
23. Olubukola A, Odunayo A, Adesina. Anemia in pregnancy at two levels of health care in Ibadan, South West Nigeria. *Annals of African Medicine*. 2011; 10: 272-277
24. Uche-Nwachi EO, Odekunle A, Jacinto S, et al. Anemia in pregnancy: associations with parity, abortions and child spacing in primary Healthcare clinic attendees in Trinidad and Tobago. *African Health Science*. 2010; 10: 66-70.
25. Okunade KS, Adegbesan-Omilabu MA. Anemia among pregnant women at the booking clinic of a teaching hospital in South-Western Nigeria. *International journal of Medicine and Biomedical Research*. 2012; 11: 1113-1120.
26. Kalaivani K. Prevalence and consequences of anemia in pregnancy. *Indian J Med Res*. 2009; 7: 627-633.
27. Haniff J. Anemia in pregnancy in Malaysia: A cross-sectional survey. *Asia Pac J Clin Nutr*. 2007; 16: 527-536.
28. Riffat J. A study of severe anemia and adverse pregnancy outcome. *Journal of Surgery Pakistan*. 2008; 13: 147-150.
29. Mahmuda B, Tanira S, Firoza W, et al. Effects of maternal anemia on neonatal outcome study done in the specialized urban hospital set up in Bangladesh. *Bangladesh journal of Medical science*. 2011; 10: 18-23.