Original Article

Anemia in Pregnant Women

Major Determinants of Anemia in Pregnant Women Residing in the Urban Slums of Taluka Qasimabad, District Hyderabad

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ABSTRACT

Objective: To find out major determinants of anemia in pregnant women residing in the urban slums of Taluka Qasimabad, district Hyderabad.

Study Design: Cross-sectional descriptive study.

Place and Duration of Study: This study was conducted in urban slum areas of Taluka Qasimabad, District Hyderabad during six months of study period i.e. from 1st March 2011 to 31st August 2011.

Patients and Methods: The total population residing in the study areas was twelve thousand two hundred and seven. During the study period of six months, two hundred and fifty pregnant women were enrolled for the study. Pregnant women during 2nd and 3rd trimester of pregnancy were included in the study. The data was collected by conducting interviews, filling of the pre-tested, structured questionnaire and by assessing anemia by determining the hemoglobin level in the enrolled pregnant women. The questionnaire was a close-ended one, filled by the principle researcher herself. It comprised of demographic information about woman. Every woman's hemoglobin was determined by using Sahli's Hemoglobinometer. Anemia in pregnancy according to WHO classified into mild anemia hemoglobin level in the range of 10.0-10.9 g/dl, moderate anemia hemoglobin level in the range of 7-9.9 g/dl and severe anemia hemoglobin level is <7 g/dl.

Results: The association of various factors (determinants) with anemia was analyzed by applying chi-squared test; the p-value of <0.05 was taken as the level of significance. Two hundred and thirty three pregnant women were anemic while only seventeen women (6.8%) were found non-anemic. Majority of the women i.e. 70% presented with moderate anemia (hemoglobin level 7.0-9.9Gm /dl) while severe anemia (hemoglobin level <7 Gm/dl) was recorded in 5.2% pregnant women. There was strong statistically significant association seen between parity of pregnant women and the degree/severity of anemia (p=0.00). There was strong association between socio-economic status and the severity of anemia (p=0.00). The family type was strongly associated with the severity of anemia (p=0.01).

Conclusion: Prevalence and severity of anemia in pregnant women residing in urban slum areas of Taluka Qasimabad, District Hyderabad is high. Current findings highlight the anemia in pregnancy as a priority area of concern.

Key Words: Anemia, Pregnant women, Urban slums.

INTRODUCTION

Iron deficiency anemia is the most prevalent form of malnutrition, affecting around 50% of pregnant women world wide and the eighth leading cause of disease in girls and women in developing countries.[1] The most common cause of anemia in pregnancy is due to iron deficiency, reason for anemia in pregnancy would be lack of nutritious diet.[2] Anemia in pregnancy is defined by the World Health Organization WHO as a hemoglobin concentration below 11 g /dl. It is most common cause of anemia in pregnancy worldwide is iron deficiency. The predisposing factors for it include grand parity, low socioeconomic status, and inadequate birth spacing.[3] It is estimated that 1,200 million people are anemic globally. The prevalence of anemia depends upon socioeconomic status, life style, parity, associated medical problems and regular antenatal care. Maternal anemia in pregnancy is commonly considered as risk factor for poor pregnancy out comes and can threat the life of mother as well as fetus.[4] Risk is also increased with parity nearly 3-fold higher for women with 2-3 children and nearly 4-fold greater for women with four or more children, thus implicating pregnancy.[5] Iron deficiency anemia in pregnancy is highly prevalent in lower southern Thailand where poverty and low levels of education prevail.[6] Iron deficiency is characterized by deficient hemoglobin level synthesis caused by lack of iron. [7]Anemia is now one of the most frequently observed nutritional disease in the world due to inadequate intake[8] and malnutrition.[9] In our society girls are lacking access to balanced diet, adequate health care and proper education particularly pregnancy with iron and folate deficiency due to socially

dominance of males, lack of power of decision making, ignorance by families and herself, lack of employment. Prevalence of anemia also increases with parity especially multi parity, closely spaced pregnancy.[10]

Adverse hemoglobin status of pregnant women attending public sector hospital might be due to socioeconomic status, less income in Pakistan is also associated with poor educational status and high parity. In this vulnerable population, the anemia may become the underlying cause of maternal mortality and perinatal mortality as well as it can lead to the complications to the fetus including risk of premature delivery and low birth weights.[11] According to safe motherhood in Pakistan by Sadiqua Jafary, the maternal mortality ratio in Pakistan remains high in between 350 and 500 per 100,000 live births, while the neonatal mortality ratio is 50 per 1000 live births. In Pakistan a mother dies as a result of giving birth every 20 minutes. For every one maternal mortality, around thirty one mothers suffer from different rates of maternal morbidity. Nearly 1 in 10 new born do not celebrate their birth day.[12] Maternal mortality and morbidity are largely preventable by acquiring Safe motherhood initiative, the antenatal care being one of the pillars of safe motherhood.[13] Maternal nutrition is modifiable risk factor of public health importance that can be integrated into efforts to prevent adverse birth out comes, particularly among economically developing/low income population.[14] It has been estimated that around two billion people in the world are anemic, mostly in the lower income countries of Africa and Asia.[15] The greatest burden of death and disease due to anemia in Africa and Asia is associated with the consequences of anemia among pregnant women and young children. A recent meta-analysis shows that correcting anemia of any severity decreases of maternal mortality by about 20% for each 1g/dl increase in hemoglobin.[16]

MATERIALS AND METHODS

This community based cross-sectional descriptive study. The study was conducted in urban slum areas of Taluka Qasimabad, District Hyderabad during six months ie from 1st March 2011 to 31st August 2011. It was a population based study. All the women in 2nd and 3rd trimester of pregnancy fulfilling the inclusion criteria were included in the study. While those not willing to participate in study, those who were interviewed but later on refused to give blood sample for hemoglobin estimation and all pregnant women in first trimester of pregnancy were excluded in the study. The total population residing in the study areas was twelve thousand two hundred and seven. According to an empirical formula for estimating the number of expectant mothers in developing countries, 24% of the total population is the women in reproductive age and among them 4% are the estimated expectant mothers at a given time.[17] As it was a population based study therefore we did not do sampling. During the study period of six months, two hundred and fifty pregnant women were enrolled for the study. The data was collected by conducting interviews, filling of the pre-tested, structured questionnaire and by assessing anemia by determining the hemoglobin level in the enrolled pregnant women. The questionnaire was a close-ended one, filled by the principle researcher herself. It comprised of demographic information about woman, her family, obstetrical history and her diet. Every woman's hemoglobin was determined by using Sahli's Hemoglobinometer. Data was entered in SPSS-16. Frequencies for all qualitative and quantitative variables were computed. Prevalence of anemia was calculated separately for mild, moderate and severe anemia. The association of various factors (determinants) with anemia was analyzed by applying chi-squared test; the p-value of <0.05 was taken as the level of significance.

RESULTS

Two hundred and thirty three pregnant women were anemic while only seventeen women (6.8%) were found non-anemic. Mild anemia (hemoglobin level 10.0-10.9 g/dl) was reported in 17.6%, while moderate anemia (hemoglobin level 7.0-9.9Gm /dl) was reported in 70.45% women and severe anemia (hemoglobin level <7 Gm/dl) was recorded in 5.2% pregnant women (Table 1).

Table No.1: Anemia in study population (n=250)

Anemia	No.	%
Mild (hemoglobin level 10.0-10.9 g/dl)	44	17.6
Moderate (hemoglobin level 7.0-9.9Gm /dl)	176	70.4
Severe (hemoglobin level <7 Gm/dl)	13	5.2
No	17	6.8

Table No.2: Relationship between parity and degree of anemia

Parity	Mild anemia	Moderate anemia	Severe anemia
Primiparous	10	29	3
Multiparous	32	115	2
Grand Multiparous	2	32	8

p = 0.00 (Chi-square test was applied)

Table No.3: Relationship between socio-economic status and severity of anemia in pregnancy

Socioeconomic status	Mild anemia	Moderate anemia	Severe anemia
Lower class	18	138	8
Middle and upper middle class	26	38	5

p = 0.00 (Chi-square test was applied)

Table No.4: Relationship between family type and severity of anemia in pregnancy

Family type	Mild anemia	Moderate anemia	Severe anemia
Joint family	23	128	12
Nuclear family	21	48	1

p = 0.01 (Chi-square test was applied)

There was strong statistically significant association seen between parity of pregnant women and the degree/severity of anemia (p=0.00) (Table 2). There was strong association between socio-economic status and the severity of anemia (p=0.00) (Table 3). The family type was strongly associated with the severity of anemia (p=0.01) (Table 4).

DISCUSSION

The current study concluded that among anemic pregnant women, one hundred and forty nine were multiparous as compared to 42 women each in primiparous and grand multiparous groups. The study revealed a strong association between parity and severity of anemia (p=0.00). Comparing these results with those of the study by Idowu et al[17] in Abeokuta Nigeria, where 35.3% pregnant anemic women were nulliparous; 48.5% were multiparous, whereas 16.2% were grandmultiparous. A study by Viveki et al[18] in Belgaum Karnataka India found prevalence of anemia was (91.3 %) in parity two or more, those in 3rd trimester (85.6%). Risk is increased with parity nearly 3-fold higher for women with 2-3 children and nearly 4-fold greater for women with 4 or more children.[5] In contrast to my study another study done by Glover et al[3] in Sekyere West districts Ghana showed lower prevalence of anemia to be strongly associated with increasing parity of the women.(p<0.003).

In the current study seventy percent of the total two hundred and thirty three anemic pregnant women belonged to lower socioeconomic class. There was a strong statistically significant association seen between anemia and socio-economic status (p=0.00). This association of anemia with low family income is obvious due to compromised nutritional status resulting from poverty. A study with similar objectives conducted by Hyder[19] in Bangladesh revealed that 72% of the anemic pregnant women were classified as economically deficit. A study by Viveki et al[18] in Belgaum Karnataka India found 47.4% were from below class 1V socioeconomic status. A study done by Bakhtiar[4] in Railway Hospital revealed that out of 860 women, 402 women were anemic in which 187 women earning monthly income less Rs.5000/ were anemic; while those whose family income was between Rs.5,000 to 10,000, one hundred and thirteen were anemic, the women having family earnings of more than Rs.10,000/, only one hundred and two women were found anemic. Another study conducted by Yuan Xing et al[20] with similar objectives in Tibet concluded that among pregnant women with annual income less than $264 had significantly lower Hb levels than those with annual income more than two hundred and sixty four dollars. Study done by Nadeem[21] had shown that severity of anemia was associated with high per capita income. Current study identified seventy percent of the pregnant anemic women residing in joint families. The family type had association with severity of anemia (p=0.01). A study by Viveki et al[18] in Belgaum Karnataka India indicated prevalence of anemia as being more than 53.1%. The majority of the study subjects were from nuclear families and 109 (47.8%) had studied up to primary level only. Study conducted by Bakhtiar[4] also endorsed the results of my study.

CONCLUSION

Prevalence and severity of anemia in pregnant women residing in urban slum areas of Taluka Qasimabad, District Hyderabad is high. Current findings highlight the anemia in pregnancy as a priority area of concern.

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