ORIGINAL ARTICLE

Frequency & Probable Risk Factors of Anemia In Last Trimester Among Pregnant Women

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ABSTRACT

Ojective: To determine the frequency and probable risk factors of anemia in last trimester among pregnant women visiting Gynecology and Obstetrics outpatient department of Bahawal Victoria Hospital Bahawalpur.

Study Design: Cross-sectional descriptive study

Place & Duration: Outpatient department of Gynecology and Obstetrics, Bahawal Victoria Hospital Bahawalpur, from January to December 2014.

Material & Methods: The women in third trimester of pregnancy, of any age and parity with singleton pregnancy visiting the outpatient department were included in the study. The exclusion criteria was unwilling women, history of blood transfusion within last three months, taking iron supplement with history of co-morbidities like diabetes mellitus, hypo or hyperthyroidism, cardiac diseases, connective tissue disorders and chronic renal disease. Data was collected by using preformed, pretested questionnaire. Hemoglobin (Hb) level of each women was determined by collecting 2ml of venous blood into tubes with EDTA and sending them to laboratory of pathology department Quaid-e-Azam Medical College Bahawalpur for estimation of hemoglobin. Respondents were categorized into three groups according to their per month family income. Respondents were asked about frequency of taking meat, egg, fruit, soft drink, fried food, baked food and salad as part of their meal and response was categorized into daily intake: Use daily in one meal per day, occasional intake: 3 days in a week in one meal per day and often: 3-6 days in a week in one meal per day. All the data collected was statistically analyzed & results were tabulated.

Results: Total 2356 pregnant women were included in the study. The mean age of respondents was 24±2.3 years. The anemia was detected among 28.1% in the last trimester of pregnancy. Out of all anemic women, 14.05% belongs to age group of 15-20 years, 35.04% to 21-25 year 33.84% to 26-30 years and 17.07% to 31 years. About 63.8% anemic women belonged to low socio-economic status, 33.1% belongs to middle and 3 % had high socio-economic status. About 63.8% anemic women belonged to extended family system, 34.4% nuclear and 1.8% were from polygamous family. In 81.5% anemic women, 60.7% were illiterate, 28.3% had education up to matric and 11% were above matric and 44.7% husbands of these anemic women were illiterate, 40.6% were educated up to matric and 13.7% having education above matric. It is seen that 25.4% anemic women have 1-2 children, 34.6% have 3-4 children and 40% have 5 children. Daily consumption of meat, egg, fruits, soft drinks, fried food, vegetable and salad was 17%, 13%, 37%, 69%, 71%, 71% and 23% respectively in the females having anemia (hemoglobin level <11gm/dl) as compared to 31%, 44%, 49%, 11%, 12%, 13% and 77% respectively in non-anemic females (hemoglobin level >11gm/dl).

Conclusion: It is concluded that prevalence of anemia is high in last trimester of pregnancy, and is inversely proportional to education of female, family income, parity and also seen high in extended family.

Key Words: Anemia, Pregnancy, Third trimester.

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INTRODUCTION

Anemia, a global public health problem is affecting both developing and developed countries. The prevalence, etiology and degree of severity vary in different populations. Multiparity, poor socioeconomic and poor educational status is the principle reasons for high prevalence of anemia. It occurs in all stages of life, but more prevalent in pregnant woman and young children. It is a result of wide variety of causes that can be

isolated but more often co-exist. Globally the more significant contribution to onset of anemia is iron deficiency. So that iron deficiency anemia (IDA) and anemia are used synonymously. It is generally assumed that 50% of cause of anemia is iron deficiency but the proportion may vary among population groups in different areas according to local condition[1,2].

Anemia has significant impact on fetus as well as mothers. It can affect ability of woman to cope with stress of pregnancy and decrease her resistance to infection. Maternal complications associated with anemia include premature rupture of membrane, premature labour, premature delivery, pregnancy induced hypertension (preeclampsia and eclampsia), seizures, weight gain, placenta previa, abruptio placenta and anesthetic complications, while the fetal and neonatal complications include low birth weight, prematurity, neonatal morbidity and congenital anomalies of cardiovascular system, central nervous system, renal agenesis and other genitourinary anomalies[3,4].

Given the multifactorial nature of this disease, anemia often requires an integral approach. In setting where anemia is most frequent, additional iron is provided through iron supplements to vulnerable groups. In pregnant woman and young children food based approaches to iron intake through food fortification and dietary diversifications are important sustainable strategies for preventing anemia in general population[5,6].

This study was designed to assess the frequency of anemia and probable risk factors responsible among pregnant women visiting gynecology and obstetrics outpatient department of Bahawal Victoria Hospital Bahawalpur.

MATERIAL & METHODS:

This cross-sectional descriptive study was conducted in the Gynecology and Obstetrics outpatient department from January to December 2014. The pregnant women in third trimester of pregnancy, of any age and parity with singleton pregnancy visiting the outpatient department during the study period were included in the study.

The gestational age was determined on the basis of information of menstrual history and ultrasound examination. The unwilling women, history of blood transfusion within last three months, taking iron supplement and with history of co-morbidities like diabetes mellitus, hypo or hyperthyroidism, cardiac diseases, connective tissue disorders and chronic renal disease were excluded from the study. Data was collected by using preformed, pretested questionnaire that comprises of two parts, first part was related to demographic variables and second part was about study variables i.e. number of living children, duration of marriage, family type and eating habits. Hemoglobin level of each women included in the study was determined by collecting 2ml of venous blood into tubes with EDTA and sending them to laboratory of pathology department Quaid-e-Azam medical college Bahawalpur for estimation of hemoglobin. Anemia was defined according to WHO criteria i.e. Hb <11g/dl. Respondents were categorized into three groups according to their per month family income. <25,000= Low, 25,000-50,000= middle and > 50,000 upper social class. Respondents were asked about frequency of taking meat, egg, fruit, soft drink, fried food, baked food and salad as part of their meal and response was categorized into daily intake: Use daily in one meal per day, occasional intake: 3 days in a week in one meal per day and often: 3-6 days in a week in one meal per day. Data was entered and analyzed through SPSS version 17. Frequencies and percentages of anemia and probable risk factors were calculated. Chi square test was applied to see any statistical difference between the groups if existed. P value =0.05 was taken as significant.

RESULTS:

Total 2356 pregnant women were included in the study. The mean age of respondents was 24±2.3 years. The frequency of anemia was found to be 28.1% in the last trimester of pregnancy. (Table.I). Out of all anemic, 14.05% anemic women belongs to age group of 15-20 years, 35.04% to 21-25 year 33.84% to 26-30 years and 17.07% to =31 years. (Table. II)

About 63.8% anemic women belonged to low socio-economic status. 33.1% belongs to middle and 3 % had high socio-economic status. (Table No. III)

About 63.8% anemic women belonged to extended family system, 34.4% nuclear and 1.8% were from polygamous family. (Table No. IV)

In 81.5% anemic women, 60.7% were illiterate, 28.3% had education up to matric and 11% were above matric and 44.7% husbands of these anemic women were illiterate, 40.6% were educated up to matric and 13.7% were educated above matric. (Table No.V)

It is seen that 25.4% anemic women have 1-2 children, 34.6% anemic women have 3-4 children and 40% have =5 children. (Table No. VI) Daily consumption of meat, egg, fruits, soft drinks, fried food, vegetable and salad was 17%, 13%, 37%, 69%, 71%, 71% and 23% respectively in the females having anemia (hemoglobin level <11gm/dl) as compared to 31%, 44%, 49%, 11%, 12%, 13% and 77% respectively in non-anemic females (hemoglobin level >11gm/dl) Table V.

Table-1: Frequency of Anemia Among Study Participants

Anemia	Frequency	Percentage
Yes	662	28.1
No	1694	71.9
Total	2356	100

Table-II: Age Distribution of Anemic Women in the Study

Age (years)	Frequency	Percentage
15-20	93	14.05
21-25	232	35.04
26-30	224	33.84
>30	113	17.07
Total	662	100

Table-III: Educational Level of Women & Frequency of Anemia

Education of Women	Anemia	
	Yes	No
Illiterate	399	627
Up to Matric	190	762
Above Matric	73	305
Total	662	1694

X^2=104.79 p=0.0000

Table-IV: Socioeconomic Status of the Study Participants

Socioeconomic Status	Anemia	
	Yes	No
Low	357	356
Middle	146	644
High	159	694
Total	662	1694

X^2=244.31 p=0.0000

Table-V: Number of Children & Frequency of Anemia among Respondents

Number of Childrem	Anemia	
	Yes	No
1 - 2	168	669
3 - 4	229	842
>5	265	183
Total	662	1694

X^2=264.4 p=0.0000

Table-VI: Family Type & Frequency of Anemia among Respondents

Family Type	Anemia	
	Yes	No
Nuclear	392	203
Polygamous	206	507
Extended	64	984
Total	662	1694

X^2=671.54 p=0.0000

DISCUSSION:

According to WHO criteria if anemia prevalence is 4.9% in a country, it is not a public health problem but if it is 5-19.9%, it is mild public health problem, when it reaches to 20-39.95%, it is moderate public health problem, and above 40% it is considered as severe public health problem.[8]

Our study results revealed that the mean age of respondents was 24±2.3 years. The frequency of anemia was found to be 28.1% in the last trimester of pregnancy. (Table.I). Out of all anemic, 68.88% were between age group of 21-30 years.

About two third (63.8%) anemic women belonged to low socio-economic status in our study and 40% anemic women had =5 living children. These results are consistent with findings of Karagolu L et al. which showed that the main causes of anemia among pregnant women are low

Table-VII: Number of Respondents According to Status of Anemia & Eating Habits (Multiple Responses)

Items	Anemic (662)						Non-Anemic (1694)					
	DAILY		OFTEN		OCCASIONAL		DAILY		OFTEN		OCCASIONAL	
	No of Cases	%	No of Cases	%	No of Cases	%	No of Cases	%	No of Cases	%	No of Cases	%
Meat	112	17	192	29	357	54	525	31	982	58	186	11
Egg	86	13	779	46	569	59	745	44	661	39	271	16
Fruit	245	37	86	13	331	50	830	49	254	15	457	27
Soft Drinks	457	69	86	13	126	19	186	11	135	8	1372	81
Fried food	470	71	165	25	26	4	203	12	119	7	1203	71
Baked food	470	71	146	22	46	7	220	13	237	14	1237	73
Salad	152	23	53	8	457	69	1304	77	271	16	119	7

family income, multiparity.[4] About 63.8% anemic women belonged to extended family system, 34.4% nuclear and 1.8% were from polygamous family. (Table No. IV) In 81.5% anemic women, 60.7% were illiterate, 28.3% had education up to matric and 11% were above matric and 44.7% husbands of these anemic women were illiterate 40.6% were educated up to matric and 13.7% were educated above matric. (Table No.V) These findings are consistent with the study of Nazir G et al. in which underlying factors of anemia were found to be poverty, lack of education and high parity.[8] Similarly Gandopadhyay R et al. also revealed that main factors responsible for high prevalence of anemia among pregnant women were young age and high parity.[9]

Daily consumption of meat, egg, fruits, soft drinks, fried food, vegetable and salad was 17%, 13%, 37%, 69%, 71%, 71% and 23% respectively in the females having anemia (hemoglobin level <11gm/dl). Similarly in a study conducted by Kalaivani K in India revealed that high prevalence of anemia was due to low intake of iron and folic acid rich diet which is comparable with our findings.[10]

CONCLUSION

Our study concluded that prevalence of anemia is high in last trimester of pregnancy, and is inversely proportional to education of female, family income, parity and also seen high in extended family.

RECOMMENDATIONS

- Ø There should be proper health education regarding nutritional awareness in pregnant women.
- Ø Existing information should be strengthened; special emphasis should be placed on improving dietary intake during pregnancy.
- Ø There should be proper antenatal visits for guidance regarding pregnancy and its complications.
- Ø Family planning services should be improved.
- Ø MCH services should be strengthened.
- Ø Iron supplements and folic acid should be taken regularly during pregnancy.

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