Original Research Article

Prevalence of Anemia among Adult Females in Tertiary care hospital

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Abstract

Background: Anemia is the most common nutritional problem across globe especially among developing countries. The prevalence is much higher among females because of increased demand of iron during reproductive age group and low socioeconomic status mainly in developing countries. This study is to find out prevalence of anemia among adult females.

Materials and Methods: In this study a total number of 500 adult female of age group 20 to 40 years were randomly selected in tertiary care hospital. Blood samples were collected and analyzed using automated hematology analyser and peripheral smear of the same were made and examined under light microscope.

Results : This study shows overall prevalence of anemia was 94% of which majority were having moderate degree of anemia with 57 % followed by mild and severe with 19 % and 18% respectively. Microcytic and hypochromic is the most common anemia by peripheral smear examination of the same which is mainly due to iron deficiency.

Conclusion: There is a significant prevalence of iron deficiency anemia among female especially among women in child bearing age group. This indicates an urgent need for improving overall nutritional status among female and iron and folic acid supplementation.

Keywords: Anemia, Hemoglobin , peripheral smear

Introduction

Anemia is a global nutritional problem affecting mainly developing countries which has its consequences on human health as well as socio economic development of the country. Though anemia occurs in all age group its prevalence is much higher among women of childbearing age group.[1] Most common anemia in adult female is iron deficiency anemia.

Major cause of Iron deficiency anemia among female adults are mainly due to dietary deficiency, menstrual blood loss and acute & chronic infection. Prevalence of anemia among adolescent female in India is much higher compared to other developing countries. [2,3]

Inadequate nutrition especially iron and folic acid among female in child bearing age group attributes to increased maternal mortality rate, high incidence of low birth weight babies and increased perinatal mortality rate.[4] Many studies conducted in India revealed prevalence of anemia is much higher in female primarily due to ignorance, poor dietary habits and low socioeconomic status.

This study is conducted to assess prevalence of anemia and type of anemia among adult female so as to improve nutritional deficit and create awareness.

Materials and Methods

This survey is to find out prevalence of anemia among young females. In this study a total number of 500 adult female of age group 20 to 40 years were randomly selected in tertiary care hospital.

By venipuncture 2ml of blood were collected in EDTA vacutainer under aseptic precaution and analyzed using automated hematology analyser. Peripheral smear was made using same blood and stained using Leishman stain and RBC were examined under light microscope.

Cut-off point for interpretation of anemia was taken as <12g/dl. Anemia was graded as Mild (10 to <12g/dl), moderate (7 to <10g/dl) and severe (<7g/dl).[5]

The data was analysed using the statistical package for social sciences software.

Results

In the present study of 500 Adult females, 210 (42%) belonged to age group of 21 to 30 years, 290 (58%) belonged to age group of 31 to 40 years. Age wise distribution was represented in Table 1.

Table 1.Age wise distribution of female

S.No	Age	Number	%
1	21-30 years	210	42
2	31-40 years	290	58
Total		500	100

Fig 1. Age wise distibution
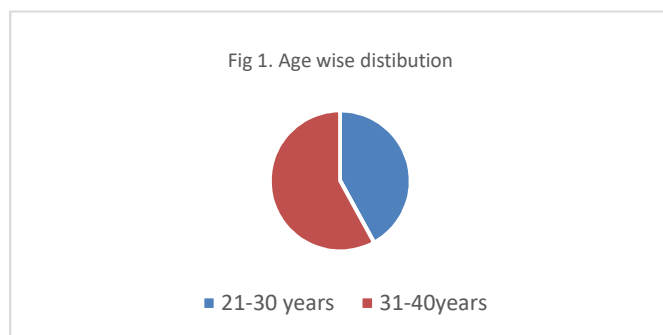■ 21-30 years ■ 31-40years

Table 2 depicts classification of anemia in different age group based on WHO criteria. As per study out of 500 subjects only 30 (6%) were found to be normal,95 (19%) were suffering from mild anemia, 285 (57%) fall under moderate anemia and 90 (18%) fall under severe anemia. As per study more common anemia among both study group - 21-30 &31-40years is moderte anemia with 105 (50%) and 180(62%) respectively.

Table 2:Prevalance of Anemia among Adult Female based on severity

Hemoglobin(gm/dl)	Grading of Anemia	Age of female				Total	
		21-30yrs		31-40yrs			
		No	%	No	%	No	%
<6.9	Severe	15	7.1	75	25.8	90	18
7-9.9	Moderate	105	50	180	62.1	285	57
10-11.9	Mild	70	33.3	25	8.6	95	19
>12	Normal	20	9.5	10	3.4	30	6
Total		210	100	290	100	500	100
Chi square-73.47 p value = <0.000001							

Fig 2: Prevalance of Anemia among Female According to severity
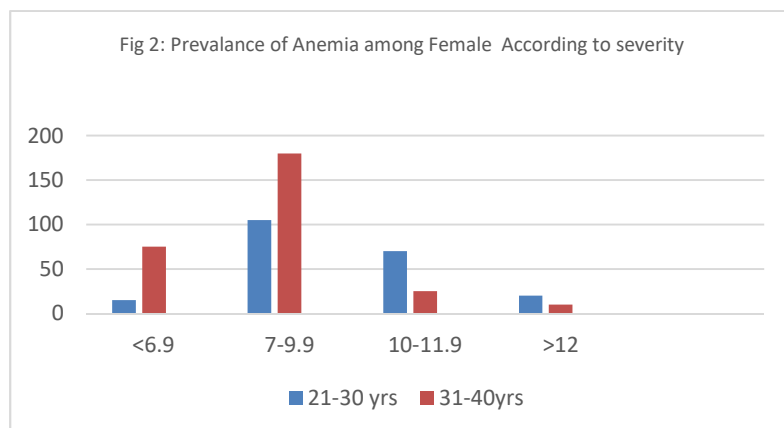
Anemic subjects are classified based on peripheral examination. Out of 470 Anemic patient 5 were normocytic hypochromic , 380 were microcytic hypochromic which is more common in this study and 85 was having dimorphic anemia(Table 3 & 4). A highly significant correlation (p <0.01) exist between age and hemoglobin level.

Table 3-prevalance of anemia in different age group

Age	No of female	No of female with anemia(<12%)
21-30	210	190
31-40	290	280
P value =0.005(<0.01)		

Table 4: Classification of Anemia based on Peripheral smear

S.no	Age	No of Anemic subject	Type of Anemia based on Peripheral smear		
			Normocytic hypochromic	Microcytic hypochromic	Dimorphic (Microcytic hypochromic & macrocytic)
1	21-30	190 (out of 210)	3	167	20
2	31-40	280 (out of 290)	2	213	65
Total		470	5	380	85

Discussion

Nutritional anemia is a global problem affecting both developing and developed countries but it post a major problem in developing nations. In this study 94% were suffering from mild to severe anemia which reflects burden of anemia in adult female attending tertiary care hospital.

Similar results with prevalence rate of 90.1% and 96.5% were obtained from studies conducted by Toteja et al. and Gawarika et al. among female from various rural district in india.[6&7] whereas as prevalence rate of anemia was 48.63% instudy conducted by AS Chandrakumari et al.[8]

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In this study prevalence of mild and moderate anemia were 19 percent and 57 percent in contrast to study conducted by Jayant et al.[9]

Based on this study ,among 94 percent anemia the most common type of anemia based on peripheral smear study on both age group is microcytic and hypochromic anemia .

In the current study a highly significant correlation was established between age of subject and hemoglobin level.

Conclusion

This study concludes that the overall prevalence rate of anemia is 94% which post a major health impact in adult female. Among it most common is microcytic hypochromic anemia, the main cause of which is iron deficiency. Hence there is a need for improving overall awareness among adults, their nutritional status, and nutritional supplementation programme especially iron supplementation to women of child bearing age group.

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