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A STUDY ON IRON DEFICIENCY ANEMIA IN ADOLESCENT GIRLS

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Abstract

Background: Nutritional anemia is a global problem of immense health significance affecting persons of all age and economic group. Anemia is one of the most common hematological abnormalities found in children. It can be defined as the reduction in oxygen-carrying capacity or as a reduction in the red cell mass of the body

Methods: This was cross-sectional study. All the adolescent girls studying in standards 9th - 12th class who were given consent to hemoglobin estimation were included in the study.

Results: The mean age of adolescent girls were 12.09±2.15 years and mean Hb level was 10.05±2.1gm/dl. The association between SES and anemia was found statistically significant. The association between type of family and anemia was also found statistically significant.

Conclusion: The prevalence of anemia among adolescent girls is alarmingly high in India.

Keywords: Prevalence, Anemia, Adolescent.

Introduction

Nutritional anemia is a global problem of immense health significance affecting persons of all age and economic group. Anemia is one of the most common hematological abnormalities found in children. It can be defined as the reduction in oxygen-carrying capacity or as a reduction in the red cell mass of the body.

Iron deficiency is the most common cause of anemia and is one of the leading risk factors for disability and death worldwide, affecting an estimated 2 billion people[1]. It is a state in which the content of iron in body is decreased, which manifests as decreased serum iron, decreased transferrin saturation, low hemoglobin and low hematocrit. It occurs in varying degrees of severity, which merge imperceptibly into one another[2,3]

Iron deficiency impairs work performance both during intense short-lived exercise and longer intervals. The decrease in work capacity is proportional to blood hemoglobin concentration. Low hemoglobin concentration in blood results in decreased oxygen capacity of hemoglobin with the parallel effect on blood carbon dioxide transport[4]. Iron deficiency also results in decreased iron containing enzymes of mitochondrial respiratory chain in skeletal muscles with a concomitant decline in muscle respiratory capacity to utilize oxygen. This reduction in aerobic metabolism is associated with an increased susceptibility to fatigue[5].

WHO has classified anemia into three categories: mild (11.0 - 11.9 g/dl), moderate (8.0 - 10.9 g/dl) and severe (< 8 g/dl) anemia [6]. UNICEF classified anemia to be mild in children, adolescent girls and pregnant women if the Hb level in blood is between 8.0 and 10.99 g/dl among children, 10.0 to 11.99 g/dl among adolescent girls and 8.0 - 10.99 g/dl Hb level among pregnant women. For severely anemic the Hb level should be below 5.0 g/dl among children, 8.0 g/dl among adolescent girls and 5.0 g/dl among pregnant women. Accordingly moderate anemia is denoted when the Hb level is between mild and severe anemia[7]

Materials and Method

This was cross-sectional study. All the adolescent girls studying in standards 9th - 12th class who were given consent to hemoglobin estimation were included in the study. The girls ≥20 years, and those suffering from any chronic disease were not included in the study. A total of 500 girls were interviewed and were investigated for their Hemoglobin concentration. A predesigned and pretested schedule was used to collect the information about the participants.

Results

Table 1: Base line data

Hb level(gm/dl)	10.05 ±2.1 gm/dl
Age (years)	12.09±2.15 years

The mean age of adolescent girls were 12.09±2.15 years and mean Hb level was 10.05±2.1gm/dl.

Table 2: Prevalence of anemia among adolescent girls

Hb level (g/dl)	No. of girls	Percentage
>11	140	28.00
10.0-11.9	255	51.00
7.0-9.9	95	19.00
<7.0	10	2.00
Total	500	100.00

The prevalence of anemia among adolescent girls was found as72.00%. Out of 360 anemic girls, 255 girls were suffering from mild degree of anemia and 95 girls were having moderate degree of anemia. Only 10 girls were found severely anemic.

Table 3: Association between socio-demographic profile and anemia

variable	Anemia present (n=360)	Anemia absent (n=140)	P-value
Socio-demographic class			
I	8	22	<0.01
II	28	40	
III	40	46	
IV	284	32	
Type of family			
Joint	65	45	<0.05
Nuclear	295	95	

The association between SES and anemia was found statistically significant. The association between type of family and anemia was also found statistically significant.

Discussion

Anemia during adolescence influence women's entire life cycle. It also has negative consequences for survival, growth, development of their children later in life. The Government of India has made the adolescent health as a part of RCH package since 1997.

Later to combat the problem, Government of India started Adolescent Girls anemia Control Program with technical support from UNICEF. The main interventions of this program were later continued under the heads of SABLA and WIFS scheme under Rashtriya Kishor Swasthya Karyakram (RKSK). In the base line survey for the program by UNICEF, 65- 99% of adolescent girls were found anemic, at various states of country. [8]

In this study the prevalence of anemia among adolescent girls was observed as 73.00%, which is very close to the observations taken by Ratiet al[9] and Patnaik et al[10], who found the prevalence as 80% and 78.8% in their studies in rural areas of Karnataka and Odisha respectively. Though Kaur et al [11] observed anemia prevalencerate as 59.8% in rural Wardha (Maharashtra). Whereas a very high prevalence of anemia (90.1%) was noted by Kulkarni et al [12] in adolescent girls of a urban slum in Nagpur.

Conclusion

The prevalence of anemia among adolescent girls is alarmingly high in India.

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