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A study on prevalence of anemia among non pregnant non-lactating women in Srinagar

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Abstract

The present study was conducted to find out prevalence of anemia among non-pregnant non lactating women of Srinagar district coming to out-patient department of SKIMS Soura Srinagar. The survey was conducted on 175 NON pregnant and non-lactating women. The total sample of 175 women was from age group 19-55 years the data was expressed as mean and percentage. A very high overall prevalence of iron deficiency anaemia (98.87 %) was found in the study population. The women who had delivered more no. of children were severely anemic. Those women were usually anemic who had not spaced their pregnancies properly. 24 hr dietary recall revealed that mean caloric intake was less as compared with RDA Clinical examinations of sample revealed that majority of them were pale and ill looking. The gradation in anemia was- mild in 14.8% (26) cases, moderate in 72% (126) cases and severe in 13% (23) cases. There was considerable improvement in the haemoglobin status of the anaemic females on supplementation with iron/folate alone or with vitamin C.

Keywords: Anemia, supplementation, dietary intake

1. Introduction

Iron deficiency anemia affects roughly 10–30% of all pregnancies and among others morbidities, may contribute to the development of postpartum depression. Verdon F, Burnand B, Stubi CL, *et al* (2003) ^[1] in addition, iron deficiency anemia concomitant with chronic kidney disease or congestive heart failure can worsen the outcome of both conditions.

Iron deficiency anemia may affect visual and auditory functioning and is associated with poor cognitive development in children (Algarin C. 2003) ^[1]

In adults, iron deficiency anemia can result in a wide variety of unfavorable outcomes including reduced work or exercise capacity, impaired cognitive functioning and memory, immune dysfunction, increased rates of infection, gastrointestinal disturbances and increased risk of pregnancy complications such as prematurity and fetal growth retardation.

Nearly 1.5 billion people all over the world are affected by iron deficiency anaemia (IDA). In India also, depending on age and sex, prevalence of IDA has been reported to range from 38-72 per cent, majority of them being women and children. The IDA prevalence rate beyond the age of six years is higher in girls. This could be due to certain factors such as menstruation, gender discrimination in intra-household food allocation and early marriage leading to early pregnancy. Estimates suggest that about 25-50 per cent girls become anaemic by the time they reach menarche. Thus, in these adolescent girls, pregnancy only serves to aggravate their pre-existing anemia. Iron deficiency anemia (IDA) is the most common nutritional deficiency and is one of the leading risk factors for disability and death worldwide, affecting an estimated two billion people. (Zimmermann MB, Hurrell RF 2007) ^[1] Anemia has serious negative consequences including Increased mortality in women and children Reduced capacity to learn and Decreased productivity in all individuals Gynecological anemia is often caused by hypermenorrhea (increased menstrual bleeding) (Adachi T. 2008) ^[9] Though supplementation with iron and folic acid remains the cornerstone in treatment and prevention of anemia, addition of vitamin C has its other added advantages. Iron deficiency anemia is prevalent throughout the world because of the inefficient absorption of nonheme iron, which forms the bulk of the iron in the diet. Absorption of this type of iron is impaired by substances in food, which reduce its availability. Ascorbic acid reverses the effect of dietary inhibitors and is one of the most powerful known promoters of nonheme iron Absorption (Lynch SR 1981) ^[2] the

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prevalence of anemia among all women in the Indian sample is 52%. Fifteen percent of these women are classified as moderately anemic (Hb 70 – 99 g/l) and 2% as severely anemic (Hb < 70 g/l). While there are regional differences, prevalence rates across the states are remarkably similar, reflecting underlying determinants that include diets low in heme-iron and high in phytates, high levels of malaria and other infectious diseases, and frequent reproductive cycling that decreases iron stores (Gillespie S 1997) [6]. Estimates suggest that about 25-50 per cent girls become anaemic by the time they reach menarche. Thus, in these adolescent girls, pregnancy only serves to aggravate their pre-existing anemia. More than one third of Indian women have a body mass index (BMI) < 18.5 kg/m², reflecting chronic energy and micronutrient deficit. Smaller-scale studies conducted in India of micronutrient deficiency confirm the high prevalence of anemia among adolescent girls and women (Sharma A 2000) [1].

In view of the above facts, the present study was carried out to ascertain the impact of iron supplementation on the prevalence of iron deficiency anemia among the non-pregnant non lactating females of the age group 19-45 yrs.

Material and Methods

The Cross-sectional study was conducted to find out prevalence of anemia in non-pregnant and non-lactating

women, coming to OPD in Sher-i-Kashmir Institute of Medical Science (SKIMS) Soura in Srinagar city. They were interviewed using a prestructured performa. Physical examination, haemoglobin estimation by Sahli's haemoglobinometer was done.

Data Collection

The data was collected from both the sources like primary and secondary sources. Primary data was collected through questionnaire cum interview schedule/ collection of secondary data was carried out by gathering information from various books, journals, websites and newspapers.

A sample of 175 non pregnant and non lactating women was selected randomly for study. Subjects were selected from OPD in Sher-i-Kashmir Institute of Medical Science (SKIMS) Soura in Srinagar city. The study was done during the year 2007. Women were classified as moderately anemic (Hb% 7-10gm%) mild anemia (Hb% 10-11.9gm %) And as severely anemic (Hb < 7 g%).

Results

Sixty-eight subjects (38.85 %) were in the age group of 19-25 yrs, sixty six (37.7 %) in 26-35 yrs, 25 (14.28 %) in 36-45 yrs and 16 (9.14) in 45-55 yrs. Most (83) females of the study population belonged to social class III and IV.

Table 1: A Comparison of Prevalence of Anaemia Before and After Interventions

	Normal	Mild	Moderate	Severe	Total
Mild	10	13	01	02	26 (14.8%)
Moderate	31	35	58	02	126 (72%)
Severe	02	03	04	14	23 (13%)
Total	43(24.57%)	51(29.14%)	63(36%)	18 (10.28%)	175

Before interventions out of 175 study subjects nobody was normal, all were anaemic. The χ^2 test was applied and the p value obtained was found to be significant, i.e. (p<0.05).

A very high overall prevalence of iron deficiency anaemia (98.87 %) was found in the study population. The gradation in anemia was- mild in 14.8% (26) cases, moderate in 72% (126) cases and severe in 13% (23) cases. After interventions, at 100 days, the proportion of mild anemia (Hb% 10-11.9gm%) increased from 14.8 % (26) to 29.14 % (51), while that of moderate (Hb% 7-10gm%)³ and severe anemia (Hb%<7gm%)³ decreased from 72% (126) to 36% (63) and 13% (23) to 10.28% (18) respectively (Table I). Forty three (24.57%) cases attained normal range of haemoglobin after the interventions.

The highest prevalence of iron deficiency anemia in the study was found in the age group of 19-25 yrs i.e. adolescents and young females. There was considerable improvement in the haemoglobin status of the anaemic females on supplementation with iron/folate alone or with vitamin C. It was also observed that the rate of rise in Hb percentage was more in the females who had their Hb percentage at a lower range before supplementation. However, the mean increase in Hb percentage was equal in all age groups.

The dietary intake of Vitamin C along with iron rich sources enhances the absorption of iron significantly^{4,5}. The difference in the response of the subjects getting Vitamin C supplementation with Fe/folate as compared to those receiving only Fe/folate in the present study seems to confirm this. In another intervention study done on adolescent girls of poor community it was observed that even weekly supplementation of vitamin C along with iron/folate had a

significant higher increase in haemoglobin concentration (0.76g/dl), as compared to weekly iron/folate supplementation alone (0.71 g/dl) after three months of supplementation. Also daily supplementation with iron /folate demonstrated an increase in haemoglobin by 0.99g/dl at the end of three months 1. In yet another study it was observed that supplementation of 50mg of vitamin C along with iron/folate increased the iron absorption to 7.7% as compared to iron/folate supplementation alone where the iron absorption was 1.6% only⁷.

Table 2: Distribution of studied sample according to their chief complaints:

Complaints	Frequency	Percentage (%)
Loss of appetite	35	25%
Generalize body ache	40	20%
Breathlessness	25	15%
Episodes of fainting	15	10%
Sleeplessness	35	30%
Palpitation	25	5%

Table 3: food consumption frequency

Milk or curd	46.7	24.0	24.0	5.2
Pulses or beans	2.0	36.7	26.4	34.8
glv	68.9	21.7	9.3	nil
Fruit	3.0	27.7	47.4	21.9
Eggs	4.0	16.4	41.9	37.6
Fish	nil	3.0	53.4	43.6
Fish or chicken/meat	24.7	43.7	31.5	nil

Table 4: pattern of taking iron supplements

Timing	Frequency	Percentage (%)
Empty stomach	8	8%
After meal	46	46%
In between meal	13	13%
Bed time	15	15%
Never	2	2%

Table 5

Side effect	Frequency	Percentage
Gastric irritation	28	33%
Bloating	9	10%
Dizziness	5	5.90%
Epigastric pain	7	8.10%
Green stools	3	3.50%
Constipation	5	5.90%
No side effects	25	29%

Conclusion

Many kinds of anemia, particularly those caused by nutritional deficiencies may be prevented by consuming a diet rich in those deficient nutrients or by taking the appropriate supplements. Other types of anemia can be prevented by treating the underlying cause for the condition such as an internal bleeding or chronic worm infestation. Supplementation with iron tablets is a Short term approach, Long-term approach through food fortification with iron either for the whole population (blanket fortification) or for specific target groups like infants. Kashmiri women should be imparted nutrition education to eat more fruits and vegetable, programmes should be targeted to at risk groups reduce phytic content of cereals and legumes by fermentation Raising awareness of anemia prevention and control Promoting behavior change in the community Adequate training among health workers Advocating for increased funding for national anemia programs These strategies are most effective when approached in a coordinated and targeted manner. By implementing below mentioned programs by all sectors including health professionals, government and non-governmental organizations we can better prevent anemia. Health and Nutrition Education has to be strengthened through department of health and ICDS, to bring awareness and behavioral change for better health and nutrition practices to improve the nutritional status of mother and child

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