|| Print ISSN: 2589-7837 || Online ISSN: 2581-3935 ||
International Journal of Medical Science and Diagnosis Research (IJMSDR)
Available Online at www.ijmsdr.com
PubMed (National Library of Medicine ID: 101738825)
Volume 3, Issue 4; April: 2019; Page No. 34-36
Original Research Article
crossref DOI: https://dx.doi.org/10.32553/IJMSDR/v3i4.7

A CROSS SECTION STUDY ON IRON DEFICIENCY ANEMIA IN ADOLESCENT GIRLS

Kavita Agarwal[1], Pradeep Agarwal[2]

[1] M S Gyan & Obst., Consultant Gynaecologist

[2] M D Medicine, Consultant Physician

[1,2] Pratik Hospital and Research Center Bhilwara.

Conflicts of Interest: Nil

Corresponding author: Pradeep Agarwal

Abstract:

Background: 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

Methods: This was cross-section 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 prevalence of anemia among adolescent girls was found as 73.00%. Out of 73 anemic girls, 52 girls were suffering from mild degree of anemia and 19 girls were having moderate degree of anemia. Only two girl was found severely anemic.

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

Keywords: Prevalence, Anemia, Adolescent.

Introduction

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 who were given consent to hemoglobin estimation were included in the study.

The girls ≥20 years, and those suffering from any chronic disease were exclude from the study.

A total of 100 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: Prevalence of anemia among adolescent girls (N = 100)

Hb level (g/dl)	No. of girls	Percentage
>11	26	26.00
10.0-11.9	53	53.00
7.0-9.9	19	19.00
<7.0	2	2.00
Total	100	100.00

The prevalence of anemia among adolescent girls was found as74.00%. Out of 74 anemic girls, 53 girls were suffering from mild degree of anemia and 19 girls were having moderate degree of anemia. Only two girl was found severely anemic.

Table 2: Distribution of adolescent girls according to general appearance

General appearance	No. of girls	Percentage
Well nourished	66	66.00
Moderately nourished	24	25.00
Mal nutrition	10	10.00
Total	100	100.00

The above table reveals that out of 100 of the adolescents girls 66(66.00%) adolescents girls were well nurshied, 24(24.00%) were moderately nourished and remaining 10(10.0%) were malnourished.

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 Katyakram (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 74.00%, which is very close to the observations taken by Rati et 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 under nutrition and anemia among adolescent girls is alarmingly high in India.

References:

1. WHO. Iron deficiency anemia: assessment, prevention and control. A Guide for Programme Managers. WHO Publications, Geneva 2001: 132 (WHO/NHD/01.3).

2. Finch CA. Iron deficiency in United States. JAMA 1968; 203: 407-10.
3. Beutlar E, Virgil FF. Iron deficiency. Hematology. Williams WJ, Beutlar E, Erslev AJ and Lichtman MA (editors), McGraw Hill Book Company, 3rd edition 1983; 468-88.
4. Sproule BJ, Mitchell JH, Miller CF. Cardiopulmonary physiological responses to heavy exercise in patients with anemia. J Clin Invest 1960; 39: 378-81
5. McLane JA, Fell RD, McKay RH et al. Physiology and biochemical effects of iron deficiency on rat skeletal muscle. Am J Physiol 1981; 10 (1): C47- C53.
6. World Health Organization. Nutrition micro nutrient deficiencies, Iron deficiency anemia, the challenge: WHO (2018)
7. International Institute for Population Sciences: Nutritional Status of Children and prevalence of Anemia among Children, Adolescent Girls, and Pregnant Women. Mumbai: IIPS (2006).
8. www.Unicef.in/uploads/publication/resourcs/pub_doc82.pdf
9. Rati SA, Jawadagi S. Prevalence of anemia among adolescent girls studying in selected schools. International Journal of Science and Research.2014; 3(8): 1237 - 1242.
10. Pattnaik S, Patnaik L, Kumar A, Sahu T. Prevalence of anemia among adolescent girls in a rural area of Odisha and its epidemiological correlates.Indian Journal of Maternal and Child Health. 2013;15 (1):1-11.
11. Kaur S, Deshmukh PR, Garg BS. Epidemiological correlates of nutritional anemia in adolescent girls of rural Wardha. Indian Journal of Community Medicine. 2006;31(4): 255-258.
12. Kulkarni MV, Durge PM, Kasturwar NB. Prevalence of anemia among adolescent girls in an urban slum. National Journal of Community Medicine. 2012;3(1):108-111.