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PROFILE OF MODERATE AND SEVERE ANAEMIA AMONG CHILDREN AND ADOLESCENTS IN HILLY AREA OF JAMMU REGION

Medical Science

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ABSTRACT

Background: Iron deficiency is the most widespread nutritional disorder besides other micronutrient deficiencies including folate and vitamin B12 that can also contribute to anaemia. Inadequate programme coverage and persistent under nutrition still poses a threat for the programme Anaemia Mukt Bharat under Poshan Abhiyan.

Material & Methods: It was a Cross sectional study conducted among participants aged from birth to 21 years attending routine paediatric OPD of Community Health Centre (CHC) Katra Jammu. The patients who were clinically suspected to be suffering from and having signs and symptoms suggestive of anaemia were investigated for Haemoglobin, serum Ferritin and Vitamin B12 estimation. We studied cases of moderate and severe anaemia. Data was entered in Microsoft Excel and analyzed using appropriate statistical tests.

Results: We studied profile of 111 children presenting with moderate to severe anaemia. Maximum children (69.3%) were under 5 years followed by children from 5 to 11 years(18%).Males were more in number (52.2%) as compared to females. Nearly 63.9% cases had severe anaemia where as 36% had moderate anaemia. Mean haemoglobin of study population was 7.5 gm% ±1.27. 11 cases had megaloblastic anaemia while three cases presented with dual deficiency.

Conclusion: Prevalence of moderate and severe anaemia is still high in Katra region of Jammu.

KEYWORDS

Anaemia, Iron deficiency, Megaloblastic anaemia, Dual deficiency.

INTRODUCTION

Anaemia is still a major public health problem in India. Although nearly three quarters of the Indian population live in rural areas, the epidemiology of anaemia in rural settings is not well known. Anaemia is a late indicator of iron deficiency, so it is estimated that the prevalence of iron deficiency is 2.5 times that of anaemia. [1,2] These staggering figures have important economic and health consequences for low- and middle-income countries. Anaemia and iron deficiency lead to substantial physical productivity losses in adults .[2] Iron deficiency during pregnancy is associated with maternal mortality, preterm labour, low birth-weight, and infant mortality.[2] In children, iron deficiency affects cognitive and motor development and increases susceptibility to infections.[3] The estimated prevalence of anaemia in India is 58.6 % in under five children ,53.1% in women aged 15–49 years, 22.7% in men 15–49 years as per NFHS4 survey.[4] Despite supplementation of iron and folic acid through various national health programmes like Weekly iron and folic acid supplementation ,National Iron Plus initiative ,Anaemia Mukt Bharat, the prevalence of anaemia is still high in most vulnerable sections of the society. The reasons may be multiple and the most important in developing countries especially India where under nutrition is still a big challenge to tackle is poor quantity and quality of diet deficient in haemopoietic nutrients like iron,vitamin B6, vitamin B2, vitamin B12, vitamin C, folate and proteins ,which are actively involved in the process of blood formation. Iron deficiency is the most prevalent nutritional deficiency and its timely correction could raise the national productivity by 20% as per WHO.[5]

MATERIAL AND METHODS

The present study had a cross sectional study design carried over a period of one year from Jan 2017 to Dec 2018. The study participants aged from birth to 21 years attending routine paediatric OPD of Community Health Centre (CHC) Katra Jammu. Detailed history and clinical examination was done by paediatrician. The patients who were clinically suspected to be suffering from and having signs and symptoms suggestive of anaemia were investigated for Haemoglobin, S.Ferritn and Vitamin B12 estimation. Any patient found to be anaemic was managed according to the grade of anaemia. Haemoglobin cut-offs used to define anaemia were as per the WHO criteria.[6]

Data was entered in Microsoft Excel and analyzed using appropriate statistical tests. Chi square for trend was used for association between anaemia among different age group. A $p<0.05$ was considered statistically significant.

RESULTS

We studied profile of 111 children from birth to 21 years presenting with moderate to severe anaemia Maximum children (69.3%) were under five years followed by children from 5 to 11 years(18%).Males were more in number (52.2%) as compared to females. Cases of severe anaemia were more as compared to moderate anaemia. Nearly 63.9% cases had severe anaemia where as 36% had moderate anaemia. Mean haemoglobin of study population was 7.5 gm% ±1.27.

Regarding children aged less than 5 years, majority of children (76.6%) had severe anaemia and only 18 children had moderate anaemia. Males were more anaemic (62.3%) as compared to females. Three cases had vitamin B 12 deficiency while all the remaining children were having iron defiency anaemia. Among children aged 5 years to 11 years, 15 (75%) children had moderate anaemia where as only 5 cases (25%) had severe anaemia. Two cases of severe anaemia had megaloblastic anaemia as vitamin B12 levels were lower than normal. There was one case of dual deficiency as well in this age group. All remaining cases were having iron deficiency anaemia.

In the age group of 12 to 14 years, there were two cases of severe anaemia and 3 cases of moderate anaemia. Two cases with severe anaemia had megaloblastic anaemia while remaining three cases had iron deficiency anaemia.

Among persons aged 15 to 21 years, 4 cases had moderate anaemia and 5 cases were severely anaemic. 4 cases had megaloblastic anaemia, two cases had dual deficiency and three had iron deficiency anaemia.

DISCUSSION

In our study, children aged less than 5 years had the highest prevalence of anaemia. Similar results were observed by another study as well.[7] Children less than 11 years also had higher rates of anaemia as compared to older age groups. These age groups are found to be more anaemic in our study. This may be because of various reasons and one

of the most important reasons conceptualized was intake of vegetarian diets in this belt of Jammu. The present study was conducted in Katra where the shrine of Shri Mata Vaishno Devi is located and due to religious practices and beliefs majority of population here consumes vegetarian diet .As it is already known fact that that the iron bioavailability of the vegetarian diet is poor[8, 9] and consequently are more prone for developing anaemia as compared to people consuming non vegetarian or mixed diets. Not only quality of diet but quantity of diet is also poor in comparatively lower socioeconomic strata of society. The WHO organization recommends introducing solid and semisolid food at the age of six months because breastfeeding does not suffice to maintain optimal growth after this age. However, at age 6–8 months only 42% of children receiving breastfeeding are given solid or semisolid food as per NFHS 4.[4] Only 9.6% children 6-23 months (1 out of 10) were reported to have received minimal acceptable diet, i.e. children get variety of at least 4 food groups to ensure nutrient intake e.g. fruits, vegetables, grains, pulses, oils etc. and with minimal meal frequency .[11]

We also reported cases with Vitamin B12 deficiency as well which corroborates with the fact that typical vegetarian diet also has poor bioavailability of vitamin B12 and other Indian studies which reported higher prevalence of vitamin B12 deficiency in patients with anaemia.[12][13].

Study Limitations: Being a cross sectional study design, we could not determine the aetiology of moderate and severe anaemia and assess their relationship with infections, under nutrition, haemoglo binop athies etc.

Hospital based data can lead to overestimation of anaemia as often people with signs and symptoms of anaemia will approach for checkups in hospitals rather than people without signs and symptoms. Population based screening of anaemia could have revealed a true picture of this problem. We also couldn't assess diets of the patients due to higher case load and shortage of time in government settings.

CONCLUSION

Prevalence of moderate and severe anaemia is still high among children and adolescents of Katra region of Jammu

Table 1 Distribution of persons according to age

Age groups	Males n(%)	Females n(%)	Total n(%)
<5	48	29	77
5-11	08	12	20
12-14	00	05	05
15-21	02	07	09
Total	58	53	111

Table 2 Classification of anaemia in children aged less than 5 years

	Moderate	Severe	Total
Males	12	36	48
Females	6	23	29
Total	18	59	77

Table no.3 Classification of anaemia 5 years to 11 years

	Moderate	Severe	Total
Males	5	3	8
Females	10	2	12
Total	15	5	20

Table no. 4 Classification of anaemia 12 to 14 years

	Moderate	Severe	Total
Males	0	0	00
Females	03	02	05
Total	03	02	05

Table no.5 Classification of anaemia 15-21 years

	Moderate	Severe	Total
Males	01	01	02
Females	03	04	07
Total	04	05	09

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