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Prevalence of microcytic hypochromic anaemia among teenagers

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Abstract

Background: Anaemia is the most common nutritional disorder worldwide. According to WHO adolescent age group is defined as life span between 10-19 years. Hence; the present study was conducted for assessing the prevalence of microcytic hypochromic anaemia among teenagers.

Materials & Methods: A total of 100 teenagers within the age arrange of 12 to 18 years were enrolled. The following data were collected: age, gender, and the results of a CBC and Hb electrophoresis. Samples obtained by venipuncture were collected and processed. Peripheral blood film examination was also done. Microcytic hypochromic examination was done. All the results were record and analysed by SPSS software.

Results: Microcytic hypochromic anaemia was found to be present in 15 percent of the patients. Out of 15 patients with presence of Microcytic hypochromic anaemia, 33.33 percent of the patients were males while the remaining were females.

Conclusion: Anaemia is a public health problem among school adolescents in the area. School-based intervention among school adolescents based on identified determinant factors will be very important for the prevention and control of anemia among the group.

Keywords: anaemia, microcytic, hypochromic

Introduction

Anaemia is the most common nutritional disorder worldwide. According to WHO adolescent age group is defined as life span between 10-19 years. In India the prevalence of anaemia among adolescent girls were 56% and these amounts to an average 64 million girls at any point in time. The major risk factors identified from the above studies were socio-economic status, blood loss during menstruation, nutritional status, hand hygiene and worm infestation [1- 3]. Nutritional needs of girls during adolescent period are generally ignored leading to stunting and poor health. One of the major consequences of the physiological changes and the nutritional neglect which happens during this period is anaemia. In a tropical country like India helminthic infestation is very common which can lead to chronic blood loss which in turn results in anaemia. Early diagnosis and, more importantly, identifying the etiology of anemia are fundamental not only for adequate treatment but also to design public policies aimed at the promotion and protection of health [4- 6]. Hence; the present study was conducted for assessing the prevalence of microcytic hypochromic anaemia among teenagers.

Materials & Methods

The present study was conducted for assessing the prevalence of microcytic hypochromic anaemia among teenagers. A total of 100 teenagers within the age arrange of 12 to 18 years were enrolled. The following data were collected: age, gender, and the results of a CBC and Hb electrophoresis. Samples obtained by venipuncture were collected and processed. Peripheral blood film examination was also done. Microcytic hypochromic examination was done. All the results were record and analysed by SPSS software.

Results

A total of 100 teenagers were analysed. Microcytic hypochromic anaemia was found to be present in 15 percent of the patients. Out of 15 patients with presence of Microcytic hypochromic anaemia, 33.33 percent of the patients were males while the remaining were females.

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Table 1: Prevalence of microcytic hypochromic anaemia

Microcytic hypochromic anaemia	Number	Percentage
Present	15	15
Absent	85	85
Total	100	100

Table 2: Gender-Wise Distribution of patients with microcytic hypochromic anaemia

Gender	Number	Percentage
Males	5	33.33
Females	10	66.67
Total	15	100

Discussion

Anaemia during childhood is one of the biggest public health problems worldwide. Insufficient or abnormal production of hemoglobin, loss of iron and excessive destruction of red blood cells are the most common causes of anaemia. Among the reasons of anaemia, iron deficiency accounts for 50% of anaemia cases in developing countries. Affected individuals present a wide range of clinical problems, including delayed neuropsychomotor progression, impaired cellular immunity and reduction of intellectual capacity.⁸⁻¹⁰ Microcytic, hypochromic anemia, as the name suggests, is the type of anemia in which the circulating RBCs are smaller than the usual size of RBCs (microcytic) and have decreased red color (hypochromic). The most common cause of this type of anemia is decreased iron reserves of the body which may be due to multiple reasons. This may be due to decreased iron in the diet, poor absorption of iron from the gut, acute and chronic blood loss, increased demand for iron in certain situations like pregnancy or recovering from major trauma or surgery.¹⁰⁻¹² Hence; the present study was conducted for assessing the prevalence of microcytic hypochromic anaemia among teenagers.

A total of 100 teenagers were analysed. Microcytic hypochromic anaemia was found to be present in 15 percent of the patients. Kyaw Htet M *et al* A cross-sectional survey was conducted on 1269 subjects to obtain complete blood count, anthropometry and socioeconomic characteristics were obtained by questionnaire. Using red cell indices, we applied Bessman's, and Green and King's index classification to differentiate the types of anaemia. Electrophoresis was also done on a subsample (n=228). Stunting was 21.2% and wasting was 10.7% respectively. Prevalence of anaemia was 59.1% and was mainly microcytic. Green and King's index showed 35.8% were iron deficient. Electrophoresis revealed 36 cases of Hb E haemoglobinopathy in the subsample. Anaemia is still a major nutrition problem in Myanmar. The reasons for this high prevalence should be explored and properly addressed^[12].

Out of 15 patients with presence of Microcytic hypochromic anaemia, 33.33 percent of the patients were males while the remaining were females. Siva PM *et al* estimated prevalence of anaemia and its associated factors among adolescent girls of central Kerala, India. A cross-sectional study was conducted among 257 adolescent girls. Blood samples were analysed using an auto-analyser and stool examination for ova or cyst was done under microscopy. Diagnosis of anaemia was established when haemoglobin was less than 12gm/dl. The prevalence of anaemia was 21%. Risk factors associated with anaemia in the univariate analysis were

presence of ova or cyst in stool (p = 0.003, OR = 2.94) and number of pads per day during menstruation (p = 0.004). Protective factors were hand washing after toileting (p = 0.021, OR = 0.311), hand washing before food intake (p = 0.026, OR = 0.5), foot wear usage (p = 0.022, OR = 0.25) and jaggery consumption (0.042). The factors which were significant in logistic regression were worm infestation, number of pads per day, washing hands before food intake and foot wear usage. Worm infestation and number of pads per day during menstruation were found to be risk factors for anaemia^[13].

Conclusion

Anaemia is a public health problem among school adolescents in the area. School-based intervention among school adolescents based on identified determinant factors will be very important for the prevention and control of anemia among the group.

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