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Original Article

Prevalence of Anaemia in Tertiary Care Hospital

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ABSTRACT

Anaemia is a major public Health problem in India. In our Country, nearly three quarters of the population live in rural areas, the epidemiology of anaemia in rural settings is not well known. We performed a observational study using Routine Clinical data from patients attending the out-patient clinics of a Hospital. Totally 100 samples were collected. 83 of patients were females and 17 patients were males. The Result of the study shows that 3 patients in females and 4 patients in males having the Haemoglobin level of (>1-5) g/dL. Also 80 females and 13 males showing the Haemoglobin level of (<1-5)g/dL. These shows while mild to moderate anaemia were more common in male patients as compared to female patients.

Keywords: Anemia, Iron Deficiency Anaemia, Haemoglobin, WHO

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INTRODUCTION

Iron is an important micronutrient which is essential for various functions in human body. It is essential for cellular growth and differentiation, oxygen binding, transport and storage, enzymatic reactions, immune function, mental and physical growth and etc. So, deficiency of iron due to either physiological or pathological reason can affect mental and physical growth resulting in decreased learning capacity and work productivity. IDA is characterized by a defect in haemoglobin synthesis, resulting in hypochromic and microcytic red blood cells [1]. Iron deficiency can result either due to less nutritional supply, increased demand or blood loss due to any reason.

There are many reasons of iron deficiency and IDA in adolescent girls. These may be deficient intake or absorption of iron, increased demand during adolescence, heavy blood loss during menstruation, parasitic infestation etc. More than half of the world's undernourished population lives in India [2]. Although IDA occurs at all age and involves both the sexes, adolescent girls are more prone to it. The World Health Organisation (WHO) defined adolescent as the population of 10-19 years of age [3]. About three fourth of adolescent females do not meet the dietary requirements [4].

According to the study by WHO on anaemia during 1993-2005, worldwide prevalence of anaemia was 25% [5]. According to WHO guidelines for control of IDA, Nutritional anaemia is a major public health problem in India and is primarily due to iron deficiency. The National Family Health Survey-3 (NFHS-3) data suggest that the prevalence of anaemia in adolescent girls (15-19 years) is 56%. According to National Nutritional Monitoring Bureau Survey (NNMBS) 2006, prevalence of anaemia in adolescent girls (12-14 years) is 68.6% whereas in (15-17 years) it is 69.7% [6].

Iron deficiency is a preventable cause. High prevalence of anaemia (Haemoglobin< 12 gm%) among adolescent girls in India, causes 1.8% loss of GDP. Daily requirement of iron for adolescent girl is 0.8 mg/1000 Kcal of dietary energy [7]. In 12^{th} five year plan Indian government has set a goal to reduce the load of anaemia in girls and women by 50%. This study will help to make strategy to combat it by cost effective method like iron supplementation and food fortification for adolescent girl and will help to reduce the morbidity and mortality and increase the work productivity. Therefore, the present study was undertaken to find the prevalence of anaemia in adolescent girls of 10-19 years of age in a tertiary care hospital.

METHODOLOGY

From the pathology Laboratory Sri Muthukumaran Medical College Hospital & RI date of from (01/03/16) to (02/08/16), 100 samples Haemoglobin% data had been collected. This data is interpreted with the normal value of Haemoglobin. Haemoglobin estimation done by Horiba cell counter method.

DISCUSSION

Iron deficiency anaemia is prevalent in worldwide. It is widely prevalent in India and its prevalence in children and pregnant females has been reported in various WHO reports as well as in local literature. It estimates nearly two billion people suffering from anaemia and approximately 50% of these cases are due to iron deficiency[9].Iron has a major role in human body. In this study we found a high frequency of anaemia in male patients in addition to above mentioned groups. Frequency of anaemia in this study is high in both genders in comparison with the available literature.

Although Iron deficiency anaemia occurs at all age and involves both the sexes, adolescent girls are more prone to it. More than 50% girls in this age group of 12 to 15 years have been reported to be anaemic[11-14]. The requirement for iron in fact doubles during adolescence as compared to younger age. There is a significant increase in the requirement of iron from preadolescent level of approximately 0.7-0.9mg iron per day to as much as 1.37-1.88mg per day in adolescent boys and 1.40-3.27 in adolescent girls [15].

In India, the prevalence of anaemia in adolescent girls is 56% (64 million girls [16]. Prevalence of anaemia varies in different parts of the world, different states of a country and even in different districts of a state. Adolescent girls are more vulnerable to iron deficiency and anaemia due to increased requirement of iron which in turn is caused by abrupt increase in lean body mass and total blood volume, and menstrual blood loss.

Government of India has made many policies to combat this problem. WHO and UNICEF also started different program to reduce anaemia in this particular group because if untreated these can affect next generation child resulting in increased morbidity and mortality and decreased productivity.

Food fortification with iron has been used to prevent anaemia in certain countries with varying results depending on type of food fortified. Assuncao et al reported lack of any increase in Hb levels or decrease in anaemia after wheat

fortification with iron in Brazil. Pregnant women are the most likely population group to suffer from anaemia. It is very important to correct anaemia as this is related with several adverse outcomes like low birth weight, preterm delivery, perinatal mortality, etc. Such females are at increased risk for these adversities in subsequent pregnancies.

Iron supplements before, during and after pregnancy should be encouraged/prescribed to all females to avoid the ill effects of anaemia in later stages of life. According to the worldwide prevalence of anaemia (1993-2005), WHO global database, more than 40% prevalence of anaemia is a severe public health problem and it should be taken care of. In 2013, the government of India introduced national implementation of weekly iron and folic acid supplementation to approximately 120 million adolescent girls. But monitoring for compliance is very necessary.

In this study frequency of anaemia is high in males when compared to the females. And as this study was done in a tertiary care hospital, further study in different regions should be done which can reflect the status of iron in males for anaemia of that region and help in planning and policy making for prevention and control.

RESULT

There were a total of 100 patient reports which were included in the study. Statistical analysis of the studyis shown in table 1. Which showed that4 males and 3 females having haemoglobin range of 1-5g/d/L and 13 males and 80 females having haemoglobin range of 6-10g/dL. In our study, haemoglobin levels above 13g/dL (for males) and above 12g/dL (for females) was taken as 'normal' while levels below this were labeled as anaemic.

CONCLUSION

The study concluded that there is a high frequency of anaemic patients in tertiary care hospital. The frequency was slightly higher amongst female patients compared to male patients. Even afterexcluding the 2 high risk groups i.e pregnant females and infants, a high Frequency rate is alarming and effective stratergies need to be adopted to prevent this public health problem. Further large-scale, community based research is needed to precisely investigate the prevalence of anaemia in our population and take necessary steps to reduce anaemia.

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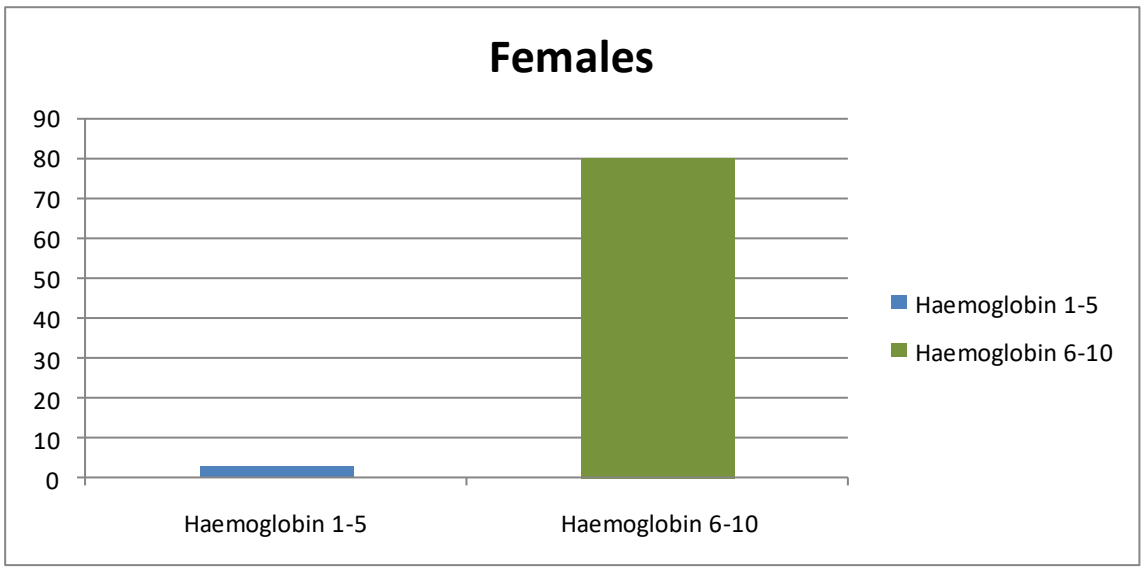
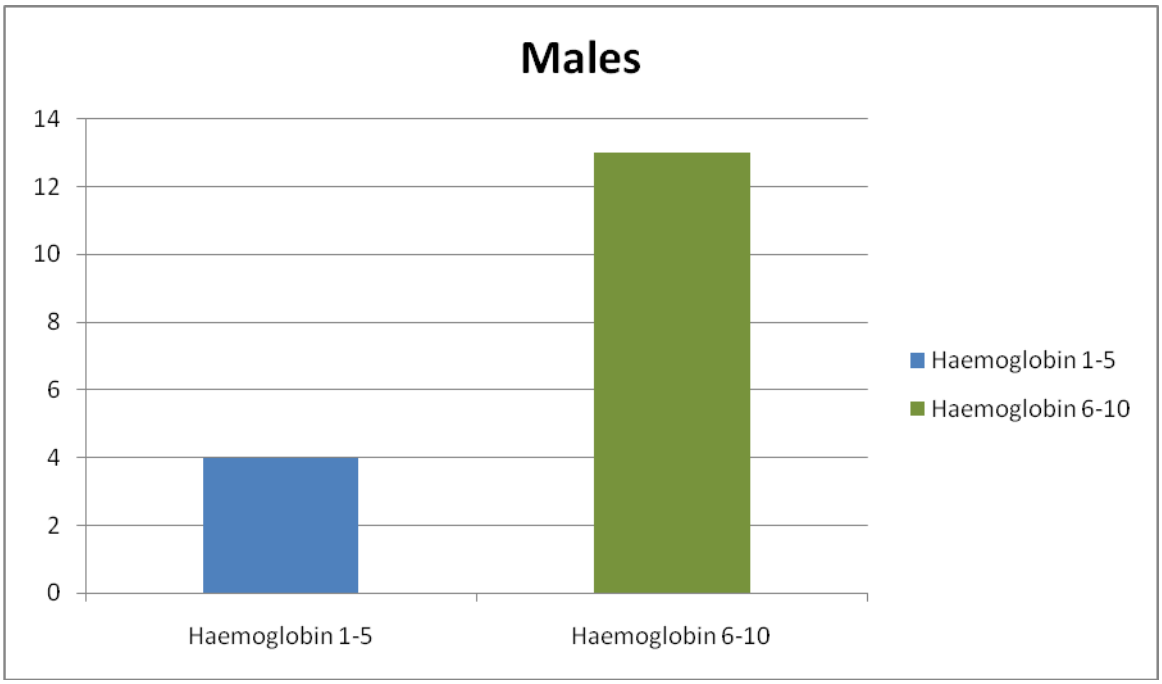
TABLE : 1 SHOWING THE RANGE OF HAEMOGLOBIN IN MALES AND FEMALES

HAEMOGLOBIN RANGE In (g/dL)	Total No. of Males (17)	Total No. of Females (83)
Haemoglobin range upto (1-5) g/dL	4	3
Haemoglobin range upto (6-10) g/dL	13	80

Table:1 shows 4 males and 3 females are having haemoglobin range upto 1-5g/dL and it shows 13 males and 80 females are having haemoglobin range upto 6-10g/dL.





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