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Prevalence of anemia amongst patients attending out door department of tertiary care hospital

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Abstract

Background: Iron deficiency anemia is a form of anemia due to the lack of sufficient iron to form normal red blood cells. Iron deficiency, the most common cause, is responsible for 50% of all anemias. **Aim:** To assessed the prevalence of iron deficiency anemia among known population. **Subjects and Methods:** The present research aimed for evaluating the prevalence of iron deficiency anemia. Sample size included assessment of a total of 220 patients who reported to the department of medicine of the hospital for routine medical checkup. A self-framed questionnaire was made and was given to all the subjects for collecting the demographic details. Blood samples were obtained from all the subjects and were sent to central laboratory for the assessment of blood hemoglobin levels. WHO criteria, described in the past literature, was used for categorizing the subjects with presence of iron deficiency anemia. All the results were analyzed by SPSS software. **Results:** Overall prevalence of iron deficiency anemia in the present study was found to be 11.36 percent. Majority of the subjects with iron deficiency anemia were found to be more than 35 years of age. Iron deficiency anemia was found to be more common among females and among illiterates. **Conclusion:** Iron deficiency anemia is a frequency encountered pathologic condition among general population, with especially high prevalence among females and illiterate population.

Keywords: Iron deficiency anemia, Prevalence.

Introduction

Anemia is defined by a decrease in the total amount of hemoglobin or the number of red blood cells. Iron deficiency anemia is a form of anemia due to the lack of sufficient iron to form normal red blood cells. Iron deficiency anemia is typically caused by inadequate intake of iron, chronic blood loss, or a combination of both. Iron deficiency anemia is the most common cause of anemia in the world.[1-3] Approximately 25% of people worldwide have anemia. Iron deficiency, the most common cause, is responsible for 50% of all anemias. The rate of iron deficiency is higher in developing countries compared to the United States, where the prevalence of iron-deficiency anemia in men under 50 is 1%.[4-6] Hence; under the light of above mentioned data, we planned the present study to assess the prevalence of iron deficiency anemia among known population.

Subjects and Methods

This prospective study was conducted department of Community Medicine (PSM) at Government Medical College, Bettiah, Bihar. The study was approved by the institution al ethical and research committee. The study was conducted for a period of one year from November 2019 to October 2020. An informed and written consent was taken from all the participating subjects prior to the commencement of the study.

The present research aimed for evaluating the prevalence of iron deficiency anemia. Sample size included assessment of a total of 220 patients who reported to the department of medicine of the hospital for routine medical checkup.Exclusion criteria for the present study included:

Subjects with presence of any acute pathology,

Subjects with presence of any other iron metabolic disorder,

Diabetic and hypertensive subjects

A self-framed questionnaire was made and was given to all the subjects for collecting the demographic details. Blood samples were obtained from all the subjects and were sent to central laboratory for the assessment of blood hemoglobin levels. WHO criteria, described in the past literature, was used for categorizing the subjects with presence of iron deficiency anemia.[7-9] All the results were analyzed by SPSS software. Chi- square test was used for assessment of level of significance. P- value of less than 0.05 was taken as significant.

Results

The present research aimed for evaluating the prevalence of iron deficiency anemia. Assessment of a total of 220 subjects was done in the present study. Mean age of the subjects with iron deficiency anemia was found to be 54.5 years. Overall prevalence of iron deficiency anemia in the present study was found to be 11.36 percent. Majority of the subjects with iron deficiency anemia were found to be more than 35 years of age. Iron deficiency anemia was found to be more common among females and among illiterates.

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Table 1: Prevalence of iron deficiency anemia

Parameter	Number	Percentage
Iron deficiency anemia	25	11.36

Table 2: Age-wise distribution of iron deficiency anemia subjects

Age group (years)	Number	Percentage	p- value
Less than 35	5	2.27	
35 to 55	10	4.54	0.55
More than 55	10	4.54	

Table 3: Gender-wise distribution of iron deficiency anemia subjects

Gender	Number	Percentage	p- value
Males	10	4.54	
Females	15	6.81	0.00(Significant)

Table 4: Prevalence of iron deficiency anemia among subjects divided on the basis of educational qualification

Educational qualification	Number	Percentage	p- value
Illiterate	10	4.54	
Less thansecondary	10	4.54	0.00
Upto graduation	4	1.82	(Significant)
Postgraduate	1	0.45	

Discussion

Iron deficiency anemia arises when the balance of iron intake, iron stores, and the body's loss of iron are insufficient to fully support production of erythrocytes. Iron deficiency anemia rarely causes death, but the impact on human health is significant. In the developed world, this disease is easily identified and treated, but frequently overlooked by physicians. In contrast, it is a health problem that affects major portions of the population in underdeveloped countries. Overall, the prevention and successful treatment for iron deficiency anemia remains woefully insufficient worldwide, especially among underprivileged women and children.[7-9] The present research aimed for evaluating the prevalence of iron deficiency anemia. Assessment of a total of 220 subjects was done in the present study. Mean age of the subjects with iron deficiency anemia was found to be 54.5 years. Al-alimi AA et al determined the prevalence and risk factors of IDA among apparently healthy Yemeni students at Hodeida University. Five hundred blood samples (326 males and 174 females) were collected randomly from medical students at Hodeida University. Participants were subjected to different tests including complete blood counts (CBC), serum ferritin (SF), serum iron (SI), and total iron binding capacity (TIBC). Moreover, a questionnaire was designed to collect demographics, food and drink habits, and socioeconomic status. The overall prevalence of IDA was 30.4%, of whom 54.00% were females and 46.0% were males. Students aged 20–22 years were found more anemic with prevalence 59.2% than students aged 17–19 years (25.0%) and 23–25 years (15.8%). Statistical analysis showed regularly having breakfast had significant (p < 0.001) role in preventing development of IDA compared with irregularly having breakfast. Infrequent consumption of vegetables /fruits; meat, fish, chicken; tea drinking; low household income; smoking and khat (Catha edulis) chewing showed a significant role (p<0.001) in provoking of IDA, whereas consumption of coffee and cola showed insignificant influence on IDA. This study revealed that the majority of university students, especially females, have IDA that might become worse by malnutrition, lifestyle habits, and lack of awareness. Their results suggested that IDA can be prevented by providing proper knowledge on the healthful diet, improved lifestyle, and harmful effect of IDA to the students.[10]The World Health Organization defines anemia as a level of Hb below 13.0 g/dL in male adults, below 12.0 g/dL in female adults who are not pregnant, and below 11.0 g/dL in pregnant women. Hb levels may vary across age and race, so care must be taken, particularly in the interpretation of borderline values. Furthermore, smokers and inhabitants of higher altitudes may have higher baseline Hb levels, and participation in endurance sports may alter Hb levels.[8,9] Overall prevalence of iron deficiency anemia in the present study was found to be 11.36 percent. Majority of the subjects with iron deficiency anemia were found to be more than 35 years of age. Iron deficiency anemia was found to be more common among females and among illiterates. Abdel-Rasoul GM et al estimated the prevalence and identify possible risk factors of iron-deficiency anemia (IDA) among a representative sample of primary school children (6-11 years), Menoufia governorate.The study sample included 497 students(242 boys, 255 girls). Blood samples and questionnaires were collected through school visits. A complete blood count was performed on all collected samples, and a serum ferritin test was carried out for anemic ones. The prevalence of IDA was 25.6%. The result showed that anemia was higher in children from urban areas (63.8%) than rural areas(36.2%) and in children from low and middle socioe-conomic(59.1%) backgrounds than those from high socioeconomic standard (40.9%). There was a significant relation-nship between children without IDA and anemic children in dietary habits, school achievements, and manifestations related to anemia (P<0.05). From the results, they concluded that the prevalence of iron deficiency is high among general population; to combat this problem, a program should be implemented by the government, especially the Ministry of Education and Ministry of Health, targeting both children and their parents through different public media approaches.[11]

Conclusion

From the above results, it can be concluded that iron deficiency anemia is a frequency encountered pathologic condition among general population, with especially high prevalence among females and illiterate population. Hence; we strongly recommend organization of health education programs for increasing the awareness of adverse events associated with iron deficiency anemia among general population.

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