Assessment of Anaemic Children Visited in OPD of Department of Paediatrics in a Tertiary Care Hospital of Western UP

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Abstract

Background: Anemia is accompanied by a reduction in quantity of red blood cells, often along with decreased hemoglobin levels or altered red blood cell morphology. Hence; present study was planned to assess the paediatric patients diagnosed with anaemia. **Subjects and Methods:** A total of 50 paediatric subjects were included in the present study. Only those subjects were included in the present study in which confirmed diagnosis of anemia was obtained after haematological examination. Detailed clinical details and demographic data of all the subjects were obtained. A self-framed questionnaire was used for obtaining the details of past medical history and family history of all the subjects. All the results were compiled and analysed by SPSS software. **Results:** Majority of them (64 percent) were females while the remaining 36 percent were males. Significant results were obtained while assessing the gender-wise distribution of anaemic patients. Positive family history of anaemic was found to be present in 36 percent of the patients. 70 percent of the patients of the present study had rural residence, while the remaining 30 percent had urban residence. Gastroenteritis was the most common associated diagnosis found to be present in 30 percent of the patient population. **Conclusion:** Anemia is a common worldwide hazard affecting significant portion of paediatric population. Higher prevalence of anaemia is seen among females with associated gastric manifestations.

Keywords: Anaemia, Paediatric, Prevalence.

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Introduction

Anemia is accompanied by a reduction in quantity of red blood cells, often along with decreased hemoglobin levels or altered red blood cell morphology. It is the most global nutritional hazard of immense public health significance, affecting subjects all ages, sex and economic group. Among different nutritional deficiency anemias, iron deficiency anemia (IDA) is the commonest.[1-3]

The prevalence of iron deficiency anemia is the highest among preschool children. In this age group (6–59 months), body grows rapidly and requires high-iron-rich and nutritious food that may not be fulfilled by their normal diet. Low economic status, less education, and poor health of mothers due to meager dietary intake are the main causes of anemia.[4-6] Hence; present study was planned to assess the paediatric patients diagnosed with anaemia.

Subjects and Methods

The present study was planned in the Department of Paediatrics, Rajshree Medical Research Institute & Hospital, Bareilly, Uttar Pradesh, India. The study was conducted with the aim of assessing the anaemic patients visiting the OPD of the paediatric department. Before the starting of the study, ethical clearance was obtained from the ethical committee. Also written consent was obtained from the parents/guardians of the subjects after explaining in detail the entire research protocol. A total of 50 paediatric subjects were included in the present study. Only those subjects were included in the present study in which confirmed diagnosis of anemia was obtained after haematological examination. Detailed clinical details and demographic data of all the subjects were obtained. A self-framed questionnaire was used for obtaining the details of past medical history and family history of all the subjects. Criteria described previously in the literature were used for defining the criteria for diagnosing anemia among paediatric subjects.[2] All the results were compiled and analysed 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 study was planned in the Department of Paediatrics, Rajshree Medical Research Institute & Hospital, Bareilly, Uttar Pradesh (India) and it included assessment of

anaemic paediatric patients. A total of 50 anaemic patients were studied in the present study. Mean age of the patients of the present study was 11.4 years. Majority of the patients belonged to the age group of 10 to 12 years. Non- significant results were obtained while assessing the age-wise distribution of anaemic patients.

**Table 1: Age-wise distribution of anaemic patients**

Age group (years)	Number of patients	Percentage	p- value
Less than 10	15	30	0.845
10 to 12	17	34	
12 to 15	10	20	
15 to 18	8	16	
Total	50	100	

Table 2: Gender-wise distribution of anaemic patients

Gender	Number of patients	Percentage	p- value
Males	18	36	0.021 (Significant)
Females	32	64	
Total	50	100	

Table 3: Clinical data

Parameter		Number of patients	Percentage	p- value
Positive family history of anemia	Yes	18	36	0.031 (Significant)
	No	32	64	
Residence	Rural	35	70	0.012 (Significant)
	Urban	15	30	
Associated manifestations	Gastroenteritis	15	30	0.022 (Significant)
	Respiratory infection	5	10	
	Asthma	3	6	
	Others	3	6	
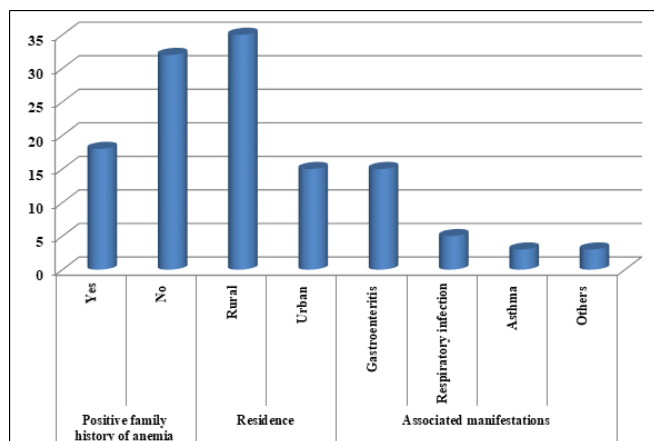
Figure 1: Clinical data

Among the 50 anaemic patients analysed in the present study, majority of them (64 percent) were females while the remaining 36 percent were males. Significant results were obtained while assessing the gender-wise distribution of

anaemic patients. Positive family history of anaemic was found to be present in 36 percent of the patients. 70 percent of the patients of the present study had rural residence, while the remaining 30 percent had urban residence. Gastroenteritis was the most common associated diagnosis found to be present in 30 percent of the patient population.

Discussion

Anemia is a worldwide community health hazard with an associated elevated risk of morbidity and mortality, more commonly in pregnant females and adolescents. Worldwide, 1.62 billion subjects are anaemic, while 47.4 percent is the prevalence of anaemia among preschool children. Nearly fifty percent of the worldwide anaemia cases are accounted by nutritional anaemia affecting the South Asia. In our country, it continues to be the most common health problem in adolescents, and pregnant women. Approximately 50% of the population suffers from nutritional anemia as known in countries where meat consumption is low.[7-9]

The present study included assessment of anaemic paediatric patients. A total of 50 anaemic patients were studied in the present study. Mean age of the patients of the present study was 11.4 years. Majority of the patients belonged to the age group of 10 to 12 years. Non- significant results were obtained while assessing the age-wise distribution of anaemic patients. In a previous study done by Dos Santos RF et al, authors assessed the incidence of anemia and it correlating factors in subjects a children's hospital in Recife. A total of 595 male subjects and female children with age-range between 6 to 59 months old were included in their study. They defined anaemia in their study as paediatric subjects with a hemoglobin concentration less than 11 g/dL. They used the Poisson regression analysis method for assessing the association between studied parameters and anemia. The total prevalence of anaemia in their study was found to be 56.6 percent. They observed a significant correlation of occurrence of anaemia with low weight, young age and a diagnosis of acute lower respiratory disease. The high incidence of anemia proposed that it might contribute as a causative agent for hospitalization, mostly because the period of hospitalization was short and the patient was likely to be anemic at the time of admission. This study emphasized on the importance of assessing the overall nutritional status of patients, including their ingestion of microelements.[10]

Among the 50 anaemic patients analysed in the present study, majority of them (64 percent) were females while the remaining 36 percent were males. Significant results were obtained while assessing the gender-wise distribution of anaemic patients. Positive family history of anaemic was found to be present in 36 percent of the patients. 70 percent of the patients of the present study had rural residence, while the remaining 30 percent had urban residence. Gastroenteritis was the most common associated diagnosis

found to be present in 30 percent of the patient population. The incidence and risk factors of anaemia were assessed in another study by Rocha Dda S et al. Assessment of a total of 312 paediatric subjects with the age range of 7 to 59 months was done, who attended daycare centers of the East Sanitary District of Belo Horizonte. From the finger stick blood samples, using the HemocueTM portable photometer, they diagnosed the anaemia cases. For this, they considered the hemoglobin levels below 11.0 g/dL. For assessing the nutritional status of the subjects, they measured the weight and height of the subjects followed by classification according to WHO criteria. Parameters were gathered through a questionnaire replied by subject's parents or guardians, containing socioeconomic variables, along with data on maternal and children's health. The occurrence of anemia in the population studied was 30.8%, with a higher prevalence in children $\leq$ 24 months of age (71.1%). Risk factors for anemia were age $\leq$ 24 months (OR: 9.08 CI: 3.96 to 20.83), and height-for-age < -1 z-score (OR: 2.1, CI: 1.20 to 3.62). The high prevalence of anemia in children attending day care centers in Belo Horizonte, especially those younger than 24 months and in children with height-for-age < - 1 z-score, demonstrates the importance of nutritional care to infants and strengthens the need for commitment of child care institutions in reducing this deficiency.[11]

Conclusion

From the above mentioned data, it can be concluded that anemia is a common worldwide hazard affecting significant portion of paediatric population. Higher prevalence of anaemia is seen among females with associated gastric manifestations. Hence; periodic paediatric check-up should be done so that early diagnosis and prompt treatment planning of this pathology could be done.

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