e-ISSN: 0975-1556, p-ISSN:2820-2643
Available online on www.ijpcr.com
International Journal of Pharmaceutical and Clinical Research 2024; 16(5); 1713-1716

Original Research Article

Investigation into the Prevalence and Factors Association with Anemia among Pediatric Patients in Secondary Health Care

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Received: 09-02-2024 / Revised: 05-03-2024 / Accepted: 19-04-2024
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Conflict of interest: Nil

Abstract:

Background and Objectives: In poorer countries, anaemia is a major public health concern. According to a global estimate of childhood anaemia, 293.1 million (about 43 percent) of children under the age of five are anaemic. At a tertiary health care, researchers will look into the prevalence of anaemia and the factors that contribute to it in children.

Methodology: This was a one-year cross-sectional study of children under the age of six who were admitted to a Secandary health care center's paediatric department for various illnesses and anaemia (low haemoglobin on routine investigation). 620 children were enrolled in the study over the course of a year. The information was given in a tabular format with percentages.

Result: In our study, the commonest age group was 1-2 years old. They accounted for 36 percent, with 2-3 years amounting for 20.97 percent and 3-4 years amounting for 16.77 percent. Girls made up 62 percent of the youngsters, with boys amounting for 35 percent. History on acute respiratory tract infection was the commonest clinical feature in 56 percent of cases, followed by History of diarrhoea in 45 percent, History of infection in 38 percent, Bodyache in 28 percent, Spleen enlargement in 21 percent, Easy fatiguability in 15 percent, Poor-concentration in 12 percent, Delayed Mile Stones in 10%, and Breathlessness in 8%. Mild anaemia accounted for 56 percent of all cases, followed by Moderate at 29 percent and Severe at 15%. Under-nourished children accounted for 65 percent of the total, followed by History on acute respiratory tract infection (56 percent), History of diarrhoea (45 percent), History of Malaria (29 percent), History of Worm-infestation (23 percent), Lower socio-economic status (19 percent), Pure vegetarianism (17 percent), and Not Exclusive Breastfeeding (15 percent).

Conclusion: The commonest clinical features of anaemia in children were History on acute respiratory tract infection, followed by History of diarrhoea, History of infection, Bodyache Spleen enlargement, Easy fatiguability, and the commonest related factors were Undernutrition, History on acute respiratory tract infection, History of diarrhoea, History of Malaria, History of Worm-infestation, Lower socio-economic status Pure vegetarian, Not exclusively breast feeding, and so on.

Keywords: ARI, Diarrhoea, Lower socio-economic status (Socio Economic Status), Breast feeding.

Introduction

In poorer countries, anaemia is a major public health concern. According to a global estimate of childhood anaemia, 293.1 million (about 43 percent) of children under the age of five are anaemic. It is considered a major public health issue, with a prevalence rate of 67 percent, or 83.5 million children. Anaemia can be managed without blood transfusion, although there is still a 6–18% case fatality rate even when blood transfusion is available. [1] Anemia affects between 44 and 76 percent of people in underdeveloped countries. Intestinal parasites, malaria, HIV infection, dietary inadequacies, the practise of drinking tea with meals, haematological malignancies, and chronic disorders such as sickle cell disease are all risk factors for anaemia (SCD). Anaemia in children can be caused by a variety of variables, including poor socioeconomic position and maternal health, as well as the existence of iron deficiency anaemia. [2,3]

Objectives: At a Secandary health care, researchers will look into the prevalence of anaemia and the factors that contribute to it in children. [4]

Material and Methods

This was a one-year cross-sectional study of children under the age of six who were admitted to the paediatric department of a District Hospital Sadar for various illnesses and had anaemia (low haemoglobin on routine investigation). 620 children were enrolled in the study over the course of a year. The children's details, such as age and gender, as well as routine investigations such as CBC, HB, and anaemia grading according to the WHO Hb. Clinical

characteristics, nutritional status (calculated using the WHO growth chart), History of illnesses such as ARI, Diarrhoea, Worm-infestation, Socio Economic status (calculated using the Modified BG Prasad), and type of food were all questioned about. The information was given in a tabular format with percentages.

Results

Table 1: Distribution of the children as per the Age

Age	No.	Percentage (%)
<1	90	15%
1-2	224	36%
2-3	130	21%
3-4	104	17%
4-5	54	9%
5-6	18	3%
Total	620	100%

The most prevalent age group in our study was 1-2 years, which accounted for 36%, followed by 2-3 years, which accounted for 21%, 3-4 years, which accounted for 17%, 1 years, which accounted for 15%, 4-5 years, which accounted for 9%, and 5- 6 years, which accounted for 3%.

Table 2: Distribution of the children as per the gender

Gender	No.	Percentage (%)
Girl	384	62 %
Boy	236	38 %
Total	620	100 %

Girls made up 62 percent of the youngsters, with boys amounting for 35 percent.

Table 3: Distribution of the children as per the clinical features

Clinical feature	No.	Percentage (%)
History on acute respiratory tract infection	348	56 %
History of diarrhoea	280	45 %
History of infection	236	38 %
Bodyache	174	28 %
Splenic enlargement	130	21 %
Easy fatiguability	94	15 %
Poor-concentration	74	12 %
Delayed mile stones	62	10 %
Breathlessness	50	8 %

History on acute respiratory tract infection was the commonest clinical feature in 56 percent of cases, followed by History of diarrhoea in 45 percent, History of infection in 38 percent, Bodyache in 28 percent, Spleen enlargement in 21 percent, Easy fatiguability in 15 percent, Poor-concentration in 12 percent, Delayed Mile Stones in 10%, and Breathlessness in 8%.

Table 4: Distribution of the children as per the Grade of Anaemia

Grade	No.	Percentage (%)
Mild	348	56 %
Moderate	180	29 %
Severe	94	15 %

Mild anaemia accounted for 56 percent of all cases, followed by Moderate at 29 percent and Severe at 15%.

Table 5: Distribution of the children as per the related factors

Related factors	No.	Percentage (%)
Under-nourished	404	65 %
History on acute respiratory tract infection	348	56 %
History of diarrhoea	280	45 %
History of Malaria	180	29 %
History of Worm-infestation	142	23 %
Lower socio-economic status	118	19 %
Pure vegetarian	106	17 %
Not exclusive breast feeding	94	15 %

Under-nourished children accounted for 65 percent of the total, followed by History on acute respiratory tract infection (56 percent), History of diarrhoea (45 percent), History of Malaria (29 percent), History of Worm-infestation (23 percent), Lower socio-economic status (19 percent), Pure vegetarianism (17 percent), and Not Exclusive Breastfeeding (15 percent).

Discussion

The commonest cause of anaemia is iron deficiency, which manifests itself in a gradual and progressive manner. Bad food habits in early childhood, particularly during the weaning stage, increase the problem. [5] When breast milk is replaced by meals low in iron and other nutrients, such as vitamin B12 and folic acid, anaemia often develops. Anemia causes low oxygenation of brain tissues, which can impede cognitive function, growth, and psychomotor development, especially in youngsters. Because of their raised iron requirements due to rapid body growth and expansion of red blood cells, infants, children under the age of five, and pregnant women are more susceptible to anaemia. [6-8] The most prevalent age group in our research was 1-2 Yrs., which accounted for 36%, followed by 2-3 Yrs., which accounted for 21%, 3-4 Yrs., which accounted for 17%, 1 Yrs., which accounted for 15%, 4-5 Yrs., which accounted for 9%, and 5-6 Yrs., which accounted for 3%. Girls made up 62 percent of the youngsters, with boys amounting for 35 percent. History on acute respiratory tract infection was the commonest clinical feature in 56 percent of cases, followed by History of diarrhoea in 45 percent, History of infection in 38 percent, Bodyache in 28 percent, Spleen enlargement in 21 percent, Easy fatiguability in 15 percent, Poor- concentration in 12 percent, Delayed Mile Stones in 10%, and Breathlessness in 8%. Mild anaemia accounted for 56 percent of all cases, followed by Moderate at 29 percent and Severe at 15%. Under-nourished children accounted for 65 percent of the total, followed by History on acute respiratory tract infection (56 percent), History of diarrhoea (45 percent), History of Malaria (29 percent), History of Worm- infestation (23 percent), Lower socio-economic status (19 percent), Pure vegetarianism (17 percent), and Not Exclusive Breastfeeding (15 percent). These findings are comparable to those of Bala Gopal Muthusamy, who discovered that out of 270 toddlers aged less than two years, 72 percent were anaemic. Anemia was found in 55.7 percent of children aged 2 to 5 years. [9-12] Nearly two-thirds of children hospitalised for less than five years were anaemic. Overall, 50% of children aged one month to twelve years were anaemic. According to system-level analysis, anaemia was found in 57 percent of respiratory cases, 47 percent of gastrointestinal cases, and 48 percent of infectious illness cases. According to Rehema H. Simbauranga, anaemia was found to be prevalent in 77 percent of the population, with mild, moderate, and severe anaemia amounting for 16.5, 33, and 27.7% of the population, respectively. [13] In 37.5 percent of the children with anaemia, microcytic hypochromic anaemia was found. Based on serum ferritin levels less than 12 g/ml, 22.6 percent (54/239) of 239 children with moderate and severe anaemia had iron deficiency anaemia. Parental unemployment, malaria parasitaemia, and the presence of sickle haemoglobin were all linked to severe anaemia. [14]

Conclusion

The commonest clinical features of anaemia in children were History on acute respiratory tract infection, followed by History of diarrhoea, History of infection, Bodyache Spleen enlargement, Easy fatiguability, and the commonest related factors were Undernutrition, History on acute respiratory tract infection, History of diarrhoea, History of Malaria, History of Worm-infestation, Lower socio-economic status Pure vegetarian, Not exclusively breast feeding, and so on.

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