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Original article

Study of etiological and clinical profile of patients in pediatric age group with severe anemia in rural area

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Abstract:

Background: About half of the population in the developing countries has iron deficiency anemia. Preschool, school and adolescent children and women in childbearing age are at increased risk. Anemia is prevalent throughout the world. The objective of the present study was to study the prevalence of severe anemia, to form an etiological categorization of anemia in pediatric age group .

Methods: Total of 100 patients admitted to the OPD , all the exclusion and inclusion criterion were studied. All the patients were subjected to a detailed history and physical examination. All cases were examined in detail according to proforma, investigations, pathological examination and other special tests were carried out.

Results: For iron deficiency anemia, incidence is more in females i.e., 42 % against males 35 % while for megaloblastic anemia incidence is more in males i.e., 32 % against 18% in females and for dimorphic anemia incidence in females is more i.e. 40% against males 33% which is not statistically significant (P value >0.05). Pallor is seen in 100% of patients. Fever is seen in 74 % of patients followed by weakness in 60% of patients, cough in 32 %, diarrhea in 16 %, breathlessness in 8% etc.

Conclusions: Severe anemia was found to be associated with morbidity. Hence early detection and prevention by vigorous treatment is important in these patients.

Introduction:

About half of the population in the developing countries has iron deficiency anemia. Preschool, school and adolescent children and women in childbearing age are at increased risk. Iron deficiency anemia affects 30% of the world population [1, 2]. The prevalence of anemia among children under 5years of age is estimated to be about 20% in industrialized countries and 39% in non-industrialized countries [3]. Iron deficiency anemia is a leading cause of morbidity and mortality worldwide [1]. In India, the national program for prevention and control of anemia focuses on pregnant women and young children less than 5years. However, the status of anemia in children is not well documented [1]

Methodology:

Total of 100 patients admitted to the OPD , all the exclusion and inclusion criterion were studied. All the patients were subjected to a detailed history and physical examination. All cases were examined in detail according to proforma, investigations, pathological examination and other special tests were carried out.

We included only pediatric age group patients in this study including age less than 16 years.

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Results:

It is observed that all three types of anemia were more in 1-2years of age group.

Table 1) Distribution of different types of Anemia

Type of anemia	Male	Female
Iron deficiency anemia	35	42
Megaloblastic anemia	32	18
Dimorphic anemia	40	35

For iron deficiency anemia, incidence is more in females i.e., 42 % against males 35 % while for megaloblastic anemia incidence is more in males i.e., 32 % against 18% in females and for dimorphic anemia incidence in females is more i.e. 40% against males 33% which is not statistically significant (P value >0.05).

In the current study iron deficiency anemia is most common followed by dimorphic anemia and megaloblastic anemia.

Fever is seen in 74 % of patients followed by weakness in 60% of patients, cough in 32 %, diarrhea in 16 %, breathlessness in 8% etc.

Pallor is seen in 100% of patients.

Microcytic hypochromic anemia is seen in 62 %, macrocytic hypochromic anemia is seen in 22% and dimorphic anemia is seen in 16 % of patients.

Discussion:

Anemia can be of various types, but most common in developing countries is nutritional anemia. Nutritional anemia can be due to Iron deficiency (most common cause), Folic acid deficiency, Vitamin B12 deficiency or may be combination of these factors, which can present with dimorphic picture.

These conditions are seen in all types of medical practice ranging from neonatology to geriatrics and public health and are an ongoing concern to all physicians. Other types include hemolytic anemia, which can be either congenital or acquired. Congenital causes include membrane defect, hemoglobin defects and enzyme defect while acquired causes can be immune or non- immune. Aplastic anemia, anemia due to blood loss and anemia of chronic disease are the some other types of anemia .

In our study we found , for iron deficiency anemia, incidence is more in females i.e., 42 % against males 35 % while for megaloblastic anemia incidence is more in males i.e., 32 % against 18% in females and for dimorphic anemia incidence in females is more i.e. 40% against males 33% which is not statistically significant (P value >0.05). Pallor is seen in 100% of patients. Fever is seen in 74 % of patients followed by weakness in 60% of patients, cough in 32 %, diarrhea in 16 %, breathlessness in 8% etc.

Nutritional anemia is caused by a lack of iron, protein, B12, and other vitamins and minerals that needed for the formation of hemoglobin. Folic acid deficiency is a common association of nutritional anemia and iron deficiency anemia is the most common nutritional disorder.

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Signs of anemia include cyanosis, jaundice, and easy bruising.In addition, anemic patients may experience difficulties with memory and concentration, fatigue, lightheadedness, sensitivity to temperature, low energy levels, shortness of breath, and pale skin. Symptoms of severe or rapid-onset anemia are very dangerous as the body is unable to adjust to the lack of hemoglobin. This may result in shock and death. Mild and moderate anemia have symptoms that develop slowly over time.[4] If patients believe that they are at risk for or experience symptoms of anemia, they should contact their doctor.

Symptoms of nutritional anemia can include fatigue and lack of energy. However if symptoms progress, one may experience shortness of breath, rapid pulse, paleness --especially in the hands, eyelids and fingernails---, swelling of ankles, hair loss, lightheadedness, compulsive and atypical cravings, constipation, depression, muscle twitching, numbness, or burning and chest pain.

Those who have nutritional anemia often show little to no symptoms. Often, symptoms can go undetected as mild forms of the anemia have only minor symptoms.

Nutritional Anemia has many different causes, each either nutritional or non-nutritional. Nutritional causes are vitamin and mineral deficiencies and non-nutritional causes can be infections. The number one cause of this type of anemia however is iron deficiency. An insufficient intake of iron, Vitamin B12, and folic acid impairs the bone marrow function. The lack of iron within a person's body can also stem from ulcer bacteria. These microbes live in the digestive track and after many years cause ulcer's in the lining of your stomach or small intestine. Therefore, a high percentage of patients with nutritional anemia may have potential gastrointestinal disorder that causes chronic blood loss.

Conclusion:

Nutritional deficiency is the most common cause of severe anemia especially iron deficiency anemia. Most of the children were malnourished and had infection indicating that severe anemia is directly related to malnutrition and infection. Pallor is the most consistent clinical sign of severe anemia.

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