

Original article

Study of clinical profile and management of pediatric age group patients with severe anemia at tertiary care hospital

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Abstract:

Background: Anemia is a major global health problem, especially in developing countries. This problem is largely preventable & easily treatable. In India prevalence is approximately 51%.

Methods: In our study, of 100 patients admitted to the Paediatrics Department, ASMCH Hardoi Uttar Pradesh, Lucknow , all the exclusion and inclusion criterion were studied. All the patients were subjected to a detailed history, physical examination and further investigation and management. All cases were examined in detail according to proforma, investigations, pathological examinations and other special tests were also done.

Results: Pallor has been observed in 100% of patients. Fever was evident in 78% of patients followed by weakness in 69 % of patients, cough in 28 %, diarrhea in 11 %, breathlessness in 9% etc. 65 % patients were treated with oral medication while 12 % required oral injectables while 23 % required mixed pattern therapy . We advised nutrition advisory / counseling for all our patients.

Conclusions: In our study, severe anemia was found to be associated with morbidity and other complications. Hence early detection and prevention by vigorous treatment is important in these patients.

Introduction:

The risk factors of anemia most often cited in the literature are low family income and low maternal level of education, lack of access to healthcare services, inadequate sanitary conditions, and a diet with poor quantities of iron. Among infants, the following characteristics conferred special risks: low socioeconomic status, consumption of cow's milk before 6 months of age, low birth weight, and prematurity.

Most common type of anemia in developing countries is nutritional anemia. Nutritional anemia can be due to iron deficiency (most common cause), folic acid deficiency, and Vitamin B₁₂ deficiency or may be combination of these. Other types include hemolytic anemia, which can be either congenital or acquired. Congenital causes include membrane defect, haemoglobin 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. Anemia is a major global health problem, especially in developing countries. This problem is largely preventable & easily treatable. In India prevalence is approximately 51%.

Methodology:

In our study, of 100 patients admitted to the Paediatrics Department, ASMCH Hardoi Uttar Pradesh, Lucknow , all the exclusion and inclusion criterion were studied. All the patients were subjected to a detailed history, physical examination and further investigation and management. All cases were examined in detail according to proforma, investigations, pathological examinations and other special tests were also done. The patients of age group 6 months to 59 months admitted in pediatric ward having severe anemia (Hb <7 gm/dl) as per WHO criteria were subjects of our study.

An appropriate sample size of 100 was considered for study. Consecutive sampling was done amongst admitted children in hospital. An informed consent was obtained from the parents of enrolled children. Child with Hb>7 gm/dl, age <6 or >59 months, lack of parental consent, history of recent surgery or blood transfusion and children with known cause of anemia or active bleeding were excluded from the study . In our study , of 100 patients admitted to the Paediatric Ward , Autonomous State Medical College & Hospital, Hardoi Uttar Pradesh, Lucknow, all the exclusion and inclusion criterion were studied. All the patients were subjected to a detailed history, physical examination and further investigation and management. All cases were examined in detail according to proforma, investigations, pathological examination and other special tests were done.

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

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	Number of patients
Iron deficiency anemia	76
Megaloblastic anemia	18
Dimorphic anemia	6

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

Table 2) Clinical features

Clinical features	Number of patients
Pallor	100
Weakness	69
Cough	28
Breathless ness	9

Pallor is seen in 100% of patients. Fever is seen in 78% of patients followed by weakness in 69 % of patients, cough in 28 %, diarrhea in 11 %, breathlessness in 9% etc.

Table 3) Clinical management

Type of anemia	Number of patients
Oral Medication	65
Injectable	12
Mixed	23

65 % patients were treated with oral medication while 12 % required oral injection treatment while 23 % required mixed pattern therapy . We advised nutrition advisory / counseling for all our 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.

The patients of age group 6 months to 59 months admitted in pediatric ward having severe anemia (Hb <7 gm/dl) as per WHO criteria were subjects of our study. An appropriate sample size of 100 was considered for study. Consecutive sampling was done amongst admitted children in hospital. An informed consent was obtained from the parents of enrolled children. Child with Hb>7 gm/dl, age <6 or >59 months, lack of parental consent, history of recent surgery or blood transfusion and children with known cause of anemia or active bleeding were excluded from the study.

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 .

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. 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.

It has become a common observation among practicing physicians to start iron, folic acid therapy on presumption of iron deficiency which should be discouraged also there is no need to transfuse blood in all severely anemic children(not in congestive heart failure) without doing bone marrow testing. In future large community based trials cum effective interventional programmes are needed to eliminate route cause of anemia in children under 5 years of age group in our country. Anemia in pediatric age group is one of the important causes of morbidity. Peripheral blood smear examination can give a fair idea about the etiology of anemia. In some cases further investigations such as Hb electrophoresis or bone marrow examination may be needed depending upon the suspected etiology. Delay in diagnosis may adversely affect health and well-being of children.

Conclusion:

In our study, severe anemia was found to be associated with morbidity and other complications. Hence early detection and prevention by vigorous treatment is important in these patients.

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Date of Submission: 05 September 2021

Date of Acceptance: 08 October 2021

Date of Publishing: 25 December 2021

Author Declaration: Source of support: Nil, Conflict of interest: Nil

Ethics Committee Approval obtained for this study? YES

Was informed consent obtained from the subjects involved in the study? YES

For any images presented appropriate consent has been obtained from the subjects: NA

Plagiarism Checked: Urkund Software

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DOI: 10.36848/IJBAMR/2020/96215.55669