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Original Research Article

A Study of Clinical Profile of Patients with Anaemia Admitted At Tertiary Care Centre

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Abstract

Background: Anaemia is reduced oxygen carrying capacity of blood, due to reduced RBC mass and/or haemoglobin concentration [1]. Causes of anaemia include nutritional deficiencies, inherited genetic defects, medication-related side effects and chronic diseases. We had studied patients attending our tertiary care centre to determine aetiology of anaemia and its different clinical aspects during period of July 2012 to March 2014. ***Methods:*** A total 100 patients having anaemia were enrolled in the study and detailed clinical examination and relevant laboratory investigations were performed. ***Results:*** Out of 100 patients 55 were females and 45 were males. In present study 45 females fall in age between 12-40 years and 29 males were in the similar age group. Most common presenting symptoms were generalised weakness and easy fatigability. Pallor was noted in 94 patients. Severe anaemia (Hb <7 g/dl) were seen in 89% of the cases. 34% of the patients had subnormal serum iron levels and 45 patients were having low serum vit. B12 level (<187 pg/dl). Among other causes, 7 patients had anaemia of chronic disease, 4 had malabsorption and 2 had drug toxicity. ***Conclusion:*** Vitamin B12 deficiency in association with iron deficiency was found to be the commonest cause for anaemia in the study group. Haemolytic anaemia was more common in males in thid study.
Keywords: Anaemia, iron deficiency anaemia, anaemia of chronic disease, B12 def.

INTRODUCTION

Anaemia is reduced oxygen carrying capacity of blood, due to reduced RBC mass and/or haemoglobin concentration [1]. Anaemia in an adult is present if haemoglobin is <13.5g/dl (haematocrit is <41%) in a male and <12.0 g/dl (haematocrit < 37) in a female [2].

Anaemia can be classified according to pathology either due to decreased production (iron def. anaemia, thalassemia, anamia of chronic disease, aplastic anaemia, bone marrow infiltration) or due to increased destruction (hemolysis due to hereditary spherocytosis, elliptocytosis, sickle cell anaemia, G6PD def, blood loss, hypersplenism, infection like clostridial, malaria) [3-5]. It can also be classified according to mean cell volume as microcytic (iron def, thalassemia, anaemia of chronic disease), macrocytic (vit B12 def, folate def, liver disease, reticulocytosis, myxoedema) or normocytic anaemia [3-5].

Anaemia can present with easy fatigability, pallor, weakness, dyspnoea on exertion, palpitation, bipedal oedema, amenorrhea or symptoms of underlying disorder. Skin and mucosal changes include bald tongue, brittle nails, koilonychias, platynychia and angular cheilitis [6].

MATERIAL AND METHODS

A total 100 patients having anaemia admitted in medicine department were enrolled in the study. Males and females >12 years were included. Critically ill patients, pregnant females, patients with alcoholic liver disease were excluded. A complete clinical examination was done in all the cases. All patients underwent laboratory / radiological investigations like CBC, peripheral smear, RFT, LFT, Urine analysis, HIV, HBsAg, S.iron and ferritin levels, PT, aPTT, chest X-ray. Investigations like LDH, ANA, Coomb's test, Hb electrophoresis, Bone marrow examination and 2-D echo were done as required.

RESULTS & DISCUSSION

Out of total 100 patients, 55 were females and 45 were males. Probable reason for more prevalence of anaemia in females may be increased requirement of micronutrients during adolescence, menses, pregnancy and lactation in female. Out of 55 females, 45 were in age between 12-40 years (reproductive age) for the same reason.

Generalised weakness and easy fatigability were commonest presenting symptoms in 83% and 51% patients respectively. Next common symptoms were

jaundice (30%), exertional dyspnoea (28%), anorexia (24%), abdominal pain (10%), chronic diarrhoea (4%).

Pallor and glossitis were noted in 94 patients. Icterus was seen in 30% of cases. Nail signs (brittle nails and spooning) were observed in 28%. Other signs noted were tachycardia (16%), speenomegaly (15%), haemic murmur (14%), hepatomegaly (5%). Basal rales were found in 2% of cases suggesting anaemic cardiac failure.

Table-1 showing hemoglobin levels of patients in present study. 92.7% of the females having Hb level <8g/dl (51 out of 55) as compared to 80% of the males (36 out of 45).

36 patients had associated leukopenia, 17 had leukocytosis. Commonest etiology consistent with leukopenia in this study was vit B12 def. Thromvocytopenia was seen in 51 patients which was attributed to vit B12 def in most of the cases.

In current study, 34% of the petients had subnormal s.Iron level. Commonest etiology for low serum iron level was nutritional def (50%), followed by dual def (14.7%) and malabsorption (5.9%).

Table-2 showing serum vitamin B12 level and correlation with mean Hb and mean s. Iron levels. 45 patients were having low s. Vit B12 levels (<187 pg/dl), amongst them 22 patients had even severe defiency (<83 pg/dl).

19 of the study patients had low ferritin levels, where as 40 patients had ferritin levels >150 ug/dl. 41 patients had ferritin levels within normal limits. Elevated s.ferritin indicates either iron overload due to chronic blood transfusion or inflammatory conditions.

According to peripheral smear examination, 30 % of the patients had microcytic anaemia followed by macrocytic in 23% and normocytic in 46% of the patients.

Table-3 shows etiology of anaemia in present study. This table points vitamin B12 defficiency to be the commonest cause of anaemia followed by iron deficiency (18%) and dual deficiency (10%). Anaemia of chronic disease (7%), malabsorption syndromes (4%), anaemia of blood loss were less common causes of anaemia. Zidovudine induced anaemia was seen in 2 cases.

Table-1: Haemoglobin levels among 100 cases of anaemia

Hb range (g/dl)	No of females(n=55)	No of males (n=45)	No of patients
>10	0	1	1
10-8	4	8	12
7.9-5	17	13	30
4.9-3	22	16	38
<3	12	7	19
TOTAL	55	45	100

Table-2: Serum vitamin B12 level and correlation with mean haemoglobin and mean s. Iron levels

Serum vit B12 level (pg/dl)	No of patients (n=100)	Mean Hb	Mean S.Iron
<83	22	5.0	98.8
83-187	23	4.6	120.8
187-280	6	4.6	62.6
280-1000	27	5.0	73.3
>1000	14	4.6	112.6

Table-3: Etiological study among 100 cases of anaemia

Etiology of anaemia	Female patients (n=55)	Male patients(n=45)	No. of patients (n=100)
Vit.b12 def.	20	20	40
Iron def	13	5	18
Haemolytic anaemia	5	8	13
Vit. B12 + iron def.	7	3	10
Anaemia of chronic disease	5	2	7
Malabsorption	2	2	4
Bloodloss	2	1	3
Drug toxicity	1	1	2
Others	0	3	3
Total	55	45	100

CONCLUSION

Vitamin B12 def induced anaemia was the commonest cause in present study, which signifies vitamin 12 def more prevalent than expected.

Iron deficiency is more prevalent in our country. But, on presentation it is not much severe to warrant admission or haemodynamic instability is less likely to develop in gradually involving anaemia. So, most of the patients can be manage on outpatient bases. Vit. B12 def is usually associated with pancytopenia so warrants admission more often. So it is admission bias that leads to underestimation of incidence of iron deficiency anaemia in current study. Haemolytic anaemia is common in males.

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