



STUDY OF CLINICAL PROFILE OF MEGALOBLASTIC ANEMIA WITH MORE EMPHASIS ON JAUNDICE IN SANGLI DISTRICT.

General Medicine

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ABSTRACT

Megaloblastic anemia is one of the important causes of anemia. Megaloblastic anemia is not rare, but its different clinical manifestations makes difficult to diagnose. Apart from pallor, glossitis, paresthesia, hyper pigmentation, confusion and ataxia, jaundice is also one of the clinical features of megaloblastic anemia. Out of 42 megaloblastic anemia cases, 12 patients with jaundice were selected for the study. It was found that there is an increase in the level of Sr. bilirubin, lactate dehydrogenase (LDH) and mean corpuscular volume (MCV) in megaloblastic anemia. The study performed in this article reveals jaundice as one of variants clinical features of megaloblastic anemia.

KEYWORDS

Megaloblastic anemia, Jaundice, hyperbilirubinemia, LDH, MCV

INTRODUCTION

In Indian population, megaloblastic anemia is common problem and characterized by decreased Haemoglobin level like $< 13\text{gm}\%$ in males and $\text{Hb} < 12\text{gm}\%$ in females with elevated Mean Corpuscular volume ($\text{MCV} > 100\text{fl}$)¹. Patients show general symptoms of anemia like shortness of breath, weakness, fatigue, loss of appetite, edema over feet. Also they showed neurological manifestation that includes peripheral neuropathy, gait abnormality, ataxia, dementia and mental changes². The causes of megaloblastic anemia are deficiency of vitamin B12 and folic acid with abnormality of their metabolism. Deficiency of vitamin B12 occur due to strict vegans³, recurrent diarrhea, D. latum worm infestation, gastro intestinal surgery, chronic liver disease, pernicious anemia, chronic pancreatitis and drugs like methotrexate, Proton pump inhibitor, anticonvulsants, prolong antibiotic use, metformin, alcohol etc⁴.

For DNA and RNA synthesis, Vitamin B12 and folic acid are important. Folic Acid deficiency is caused by inadequate intake of folic acid, malabsorption, and inadequate supplementation of folate during pregnancy and lactation^{5,6}. Besides megaloblastic anaemia, folic deficiency is also inflicted in neural tube defects in newborns⁷. Their deficiency causes failure of normal process of erythrocyte maturation in the bone marrow and intramedullary hemolysis⁸. Immature large erythrocytes are released in circulation. Results in megaloblastic changes showed variable degree of anemia, bicytopenia, or pancytopenia and hypersegmented neutrophils. Haemolysis leads to raised unconjugated bilirubin & LDH level^{9,10,11}.

Clinically patients have pallor, glossitis or bald tongue, icterus, knuckle hyperpigmentation¹² hepatosplenomegaly and features of congestive cardiac failure. Peripheral neuropathy, ataxia, gait abnormality, dementia and mental changes are rare neurological manifestation. Intervention with high doses of supplementation of vitamin B12 and folic acid will correct the problem.

This study was carried out to find out clinical profile of megaloblastic anemia with more emphasis on jaundice in patients attending BVDUMC&H Sangli, Maharashtra, India.

MATERIALS

This was a retrospective observational study conducted on patients admitted in General medicine department of BVDUMC&H Sangli during the month period from Jan. 2017 to Oct. 2017. The case records of 42 patients of megaloblastic anemia were reviewed and twelve cases of megaloblastic anemia with jaundice were selected for the study. The

Institutional ethical approval was taken from ethical committee. The criteria of selected patients was $\text{Hb} < 10\text{ gm}\%$, $\text{MCV} \geq 100\text{ fl}$ with elevated Sr. Bilirubin. The data was collected in terms of clinical features and laboratory parameters.

METHODS

Inclusion Criteria⁴:-

Patients with diagnosis of megaloblastic anemia with jaundice with $\text{Hb} < 10\text{ gm}\%$, $\text{MCV} \geq 100\text{fl}$ with elevated Sr. Bilirubin selected. Such cases fulfilling above criteria were selected for the study. Their records were reviewed. Data was collected in terms of clinical findings and laboratory parameters.

Exclusion Criteria:-

Alcoholic patients, infections causing elevated Sr. liver enzymes, other hemolytic anemia were excluded from the study.

Complete Blood Count was done on automated coulter machine and peripheral smear reported by Pathologist. Results are presented in form of tables and graphs.

RESULTS:-

All forty two patients had megaloblastic anemia with clinical presentation of pallor, glossitis, hyper pigmentation and among these, twelve patients had megaloblastic anemia with jaundice. On peripheral smear, megaloblastic anemia is the characteristic identified by hypersegmented neutrophil with macro ovalocytosis. Out of twelve 6 were male and 6 were females. Age variation was is between from 25 to 75 yrs.

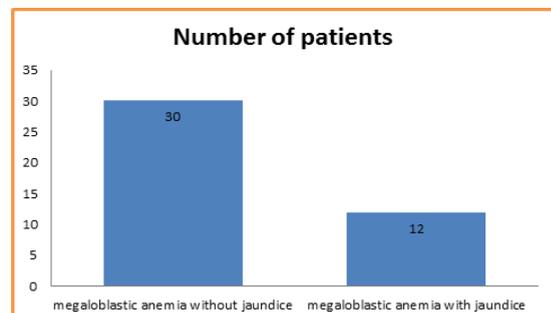


Fig no. 1 Cases of megaloblastic anemia with and without jaundice

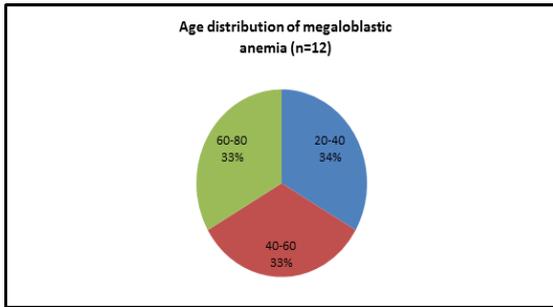


Fig no. 2 Age distribution of megaloblastic anemia with jaundice

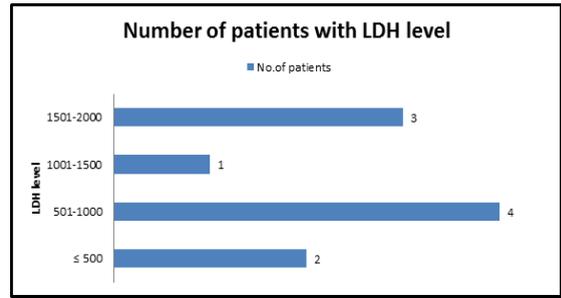


Fig. no.6 Number of patients with LDH level

Table no. 1 Different parameters in twelve numbers of patients

Parameters	Number of patients (N=12)
Strict vegetarian	04
Mixed diet	08
Fatigue and weakness	12
Hyperpigmentation of knuckles and glossitis	12
Symptoms of dyspnoea on exertion and pedal edema	09
Loss of appetite (Anorexia)	07
Neuropathy	02

Hb value varies from 3.7 to 8.9. Corrected Retic counts of all twelve patients are normal. All patients MCV was ≥ 100 fl maximum up to 116 fl. All patients peripheral smear showed macrocytosis, macro ovalocytosis and hypersegmented neutrophils. All patients had mild, indirect hyperbilirubinemia with normal or mildly elevated Sr. liver enzyme SGOT / SGPT. LDH level elevated moderately in ten patients. Two patients had mild hepatosplenomegaly and two patients had hepatomegaly on USG.

DISCUSSION:-

Symptoms of anemia like weakness, fatigue, exertional dyspnea, palpitations, dizziness and aches and pains all over the body are commonly present these symptoms are comparable with megaloblastic anemia. Pallor was the most common clinical finding observed in patients followed by glossitis¹³.

Indirect hyperbilirubinemia, asymptomatic or minimally symptomatic can occur in variety of disorders including hemolytic anemia such as hereditary spherocytosis or elliptocytosis and gilberts syndrome and megaloblastic anemia. In hemolytic anemia reticulocyte count increased and peripheral smear is the characteristic. Reticulocyte count may be low or normal in megaloblastic anemia. There will be no anemia and MCV will be normal in Gilbert's syndrome¹⁴.

The prevalence of Vitamin B12 deficiency increases with age. It is 1 in 20 among people aged 65 – 74 yrs to 1 in 10 or even greater among people aged >75 Years. The prevalence of folic acid deficiency also increases with age. In Kurundkar et al.4 and Pokharel et al.15 study, 1/3rd patients of megaloblastic anemia had jaundice. These patients had elevated indirect bilirubin level, indicating intramedullary hemolysis. In our study, out of 42 revived megaloblastic anemia patients, 12 patients had jaundice which was 28.7%. Similar results were found in the studies of Kurundkar et al.4 (33.3%) and Pokharel et al. (35.7%). Also from the study performed hepatosplenomegaly was found in 4 patients which is [25%]. Peripheral neuropathy was found in 2 patients (16%), where as Sr. LDH level was high in most of the patients. Similar finding were also reported from other authors 4,10 This case study is to give attention with megaloblastic anemia should consider one of the treatable causes of anemia with mild jaundice.

CONCLUSION

Megaloblastic anaemia is the most prevalent diagnosis. Megaloblastic anemia should be taken into account for the patients having anemia with mild jaundice. For treatment of such patients supplementation of vitamin B12 and folic acid is advised. The clinical sign of jaundice will also disappear with this treatment. Hence jaundice is also not uncommon clinical presentation of megaloblastic anemia.

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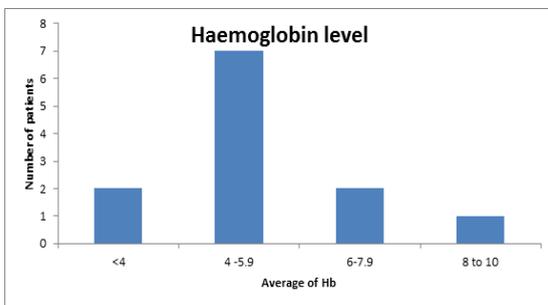


Fig no. 3 Haemoglobin level of patients

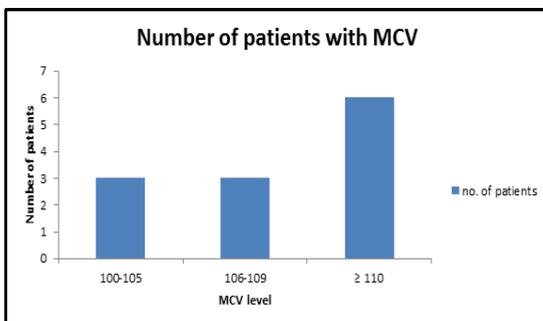


Fig no. 4 Number of patients with MCV

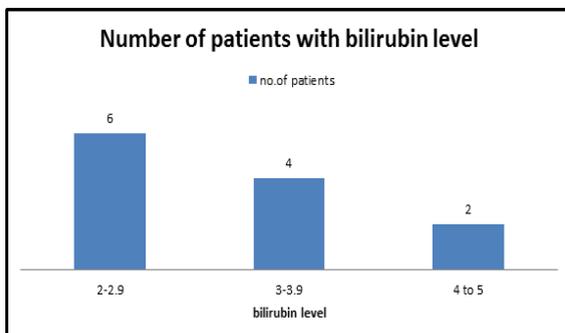


Fig no. 5 Number of patients with bilirubin level

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