Original Research Paper

Volume-7 | Issue-12 | December-2017 | ISSN - 2249-555X | IF : 4.894 | IC Value : 86.18

Medicine

"A PROSPECTIVE STUDY OF ANEMIA IN PATIENTS WITH CHRONIC LIVER DISEASE"

Dr. Gajanan Balaji Kurundkar — Associate Professor, Dept. of Medicine, Smt. Kashibai Navale Medical College & General Hospital, Narhe, Pune

Dr. Khatib Khalid — Professor, Dept. of Medicine, Smt. Kashibai Navale Medical College & General Hospital, Narhe, Pune

ABSTRACT Chronic Liver Disease (CLD) leads to various functional abnormalities including anemia. This study was conducted to find out characteristics of anemia in patients with CLD.

Aims & Objectives : 1) To detect the abnormalities of RBCs in a chronic liver disease patient. 2) To find the type of anaemia in patient with chronic liver disease from peripheral smear & RBC indices.

Materials & Methods: This was a prospective observational type of study. The study was conducted on patients admitted in medicine department of SKN Medical College & General Hospital, Pune during period March 2017 to Oct 2017. Total 56 patients with Chronic Liver Disease (age > 18 yrs) were included in the study. Data was collected in terms of history, clinical findings & laboratory parameters. All cell counts & RBC indices were done on automated coulter machine & peripherals smear reported by pathologist. Data was analysed using standard statistical tests.

Conclusion : The study shows that mild to moderate anemia is common in patients with Chronic Liver Disease & most common type is normochromic normocytic i.e. anemia of chronic disease.

KEYWORDS : anemia, chronic liver disease

Introduction :

Chronic Liver Disease (CLD) leads to various anatomical & functional abnormalities . When liver cirrhosis sets in, synthetic & immune functions of liver are adversely affected. This leads to haematological abnormalities including anemia. The causes of anemia in CLD are hypersplenism, iron, vitamin B 12 & folic acid deficiency, hemolysis, malnutrition & haemodilution. RBC indices are abnormal in many patients of CLD & presence of cytopenias has an adverse impact on prognosis of the patient. The study was conducted to describe type of anemia in patients with CLD from RBC indices & peripheral smear.

Aims & Objectives : 1) To detect the abnormalities of RBCs in a chronic liver disease patient. 2) To find the type of anaemia in patient with chronic liver disease from peripheral smear & RBC indices.

Materials & Methods: This was a prospective observational type of study. The study was conducted on patients admitted in medicine department of SKN Medical College & General Hospital, Pune during period March 2017 to Oct 2017. The study has been approved by ethical committee. Total 56 patients were selected randomly as per following inclusion & exclusion criteria.

Inclusion Criteria:

All liver disease patients of age > 18 years whose symptoms and signs persisted for more than six months

Exclusion Criteria:

1. Patients with known primary hepatocellular carcinoma or GI malignancies
2. Acute liver cell failure
3. Patient on drugs which cause defect in haematological parameters such as glucocorticoid, synthetic estrogen, tamoxifen, methotrexate, OC Pills
4. Previous history of haematological and coagulation disorder other than Chronic Liver Disease

Cases fulfilling above criteria were selected for the study. Data was collected in terms of history, clinical findings & laboratory parameters. All cell counts & RBC indices were done on automated coulter machine & peripherals smear reported by pathologist. Data was analysed using standard statistical tests. Results are presented in form of tables & graph.

Results : A total of 56 patients were included in the study. All patients were male with mean age of 42.73 years. 51 patients (51.07%) were alcoholic, 4 patients (7.14%) were hepatitis B positive & one patient was HCV positive. The mean & median Hb were 8.92 & 9.0 respectively. Table 1 shows anemia was present in 91.07% of patients of which 16% had severe anemia.

Table 1 : Anemia in Chronic Liver Disease

	Patients No.	Patients %	Mean MCV	Mean MCH
Severe anemia (Hb < 6 g%)	9	16.07	71	20.76
Moderate anemia (Hb 6-9 g%)	19	33.93	106.59	35.11
Mild anemia (Hb 9-12.9 g%)	23	41.07	84.64	24.05
Normal Hb	5	8.93	90.24	30.05

Graph 1 : Anemia in Chronic Liver Disease

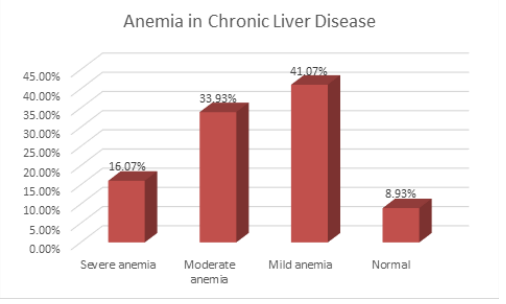
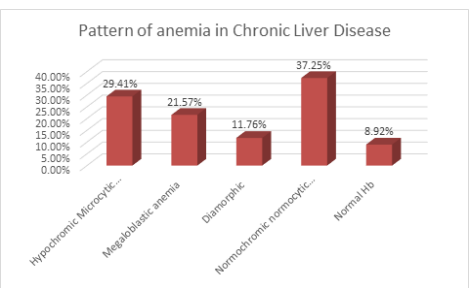


Table 2 shows type of anemia, normochomic normocytic being most common in the study.

Table 2: Pattern of anemia in Chronic Liver Disease

Type of anemia	Patients No.	Patients %
Hypochromic Microcytic	15	29.41
Megaloblastic	11	21.57
Diamorphic	6	11.76
Normochromic normocytic	19	37.25
Normal Hb	5	8.92

Graph 2 : Pattern of anemia in Chronic Liver Disease



Discussion :

In this study, 75% patients had mild to moderate anemia with normochromic normocytic anemia being most common. Alcoholism was the commonest cause of CLD in this study. Anemia in CLD may be due following causes[1,2,3] a) Haemodilution b) decreased production of erythropoietin by kidneys c) ineffective erythropoiesis . In the study by Yang et al ineffective erythropoiesis was associated with higher level of erythropoietin in patients of CLD with anemia compared to CLD without anemia[4,5]. d) anemia of chronic disease e) nutritional deficiency due to malabsorption, alcoholism, poor appetitite f) CLD leads altered metabolism of cholesterol. Hyperlipidemia causes stiffening of RBC membrane leading to increased destruction when they pass through spleen. This acute metabolic condition (Zeive's syndrome)[6] is during alcohol withdrawal.

Anemia is seen in approx.. 75-80% of patients with CLD[1,3]. The most common type is anemia of chronic disease i.e. normochromic normocytic. This is seen in our study as well as many other studies. Macrocytosis is also common in CLD & may be due to a) direct toxic effect of alcohol on stem cells in bone marrow b) deficiency of vitamin B 12 c) deficiency of folic acid[7]. Hypochromic microcytic anemia is seen in CLD due to a) bleeding from esophageal varices b) peptic ulcer c) esophagitis d) hemolysis due to Zeive's syndrome, hypersplenism etc

Conclusion :

The study shows that mild to moderate anemia is common in patients with Chronic Liver Disease & most common type is normochromic normocytic i.e. anemia of chronic disease.

References:

1) Shivam Khare, Vijay Kumar Garg, Hemant Kumar Jain, Omprakash Jatav, "To study haematological profile in patients of chronic liver disease", International Journal of Multidisciplinary Research and Development, Volume: 2, Issue: 8, 378-381 Aug 2015, 378-381
2) E. Halleys Kumar and A. Radhakrishnan, "Prevalence of Anaemia in Decompensated Chronic Liver Disease", World Journal of Medical Sciences 10 (1), 2014, 56-60
3) Deepak Jain, H. K. Aggarwal, Avinash Rao, Shaveta Dahiya, Suhas Singla, "Hematological spectrum in patients with alcoholic liver cirrhosis: a model of end-stage liver disease score based approach", International Journal of Advances in Medicine, 2016 May;3(2):234-240
4) Qamar AA, Grace N D, "Abnormal haematological indices in cirrhosis" Can J Gastroenterol. 2009;23:441-5
5) Yang YY, Lin HC, Lee WC, et al. Plasma erythropoietin level in patients with cirrhosis and its relationship to the severity of cirrhosis and renal function. J Gastroenterol Hepatol. 2003;18:1156–61
6) Zieve L. Jaundice, 1958. Hyperlipidemia and hemolytic anaemia: a heretofore unrecognized syndrome associated with alcoholic liver cirrhosis, Ann. Intern Med., 48: 471-96
7) G. Anbazhagan, P. Mohan Raj, S. Kalaivalli, Vishnuprasanth. "Red Blood Cell Abnormalities in Decompensated Chronic Liver Disease (DCLD)". Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 7, February 16, 2015; 826-833