



## A STUDY OF ANEMIA PATTERN IN ALCOHOLIC LIVER DISEASE

## Gastroenterology

<b>Dr. Senthil Kumar</b>	Department of Medical Gastroenterology , Government Vellore Medical college, Vellore- 627011, Tamilnadu,
<b>Dr. Mohan Kumar</b>	Department of General Surgery, Government Vellore Medical college, Vellore -627011, Tamilnadu
<b>Dr. E. Kandasamy Alias Kumar*</b>	Department of Medical Gastroenterology, Tirunelveli Medical college, Tirunelveli - 627011, Tamilnadu, *Corresponding Author

## ABSTRACT

**BACKGROUND;** Anemia is prevalent in general population. Anemia pattern in alcoholic patients is not studied well. .Material: 183 Patients who were taking alcohol for long time with varied quantity with altered LFT between age group of 23-70 years were taken into the study.a study period : may2018 to August 2018 Venue: Department of Medical gastroenterology .Government Vellore Medical college .All underwent complete CBC profile including Hemoglobin, MCV,MCH, Platelets, iron, vitamin B12,folate,USG abdomen to access splenomegaly, alcoholic hepatitis, alcoholic fatty liver, compensated cirrhosis noted,UGI endoscopy to access varices, peripheral smear for microcytic hypochromic Anemia, megaloblastic Anemia, pancytopenia,

**RESULTS;** 183 patients ,all are having significant alcohol history with Anemia <12gms/dl, Anemia ranges between 6-8 (17patients9.28%) between 9-10 (22patients12.02%), between 11-12 (144 patients 78.68%) among iron deficiency Anemia 170 patients (92.89%), folate deficiency 8 (4.37%), megaloblastic 3(1.63%), pancytopenia 2 patients (1.09%) alcoholic hepatitis 67 (36.62%), alcoholic fatty liver 38 (20.76%), compensated cirrhosis 78 (42.62%) Upper GI endoscopy varices in three patients ( small varix) mild portal hypertensive gastropathy in12 (6.55%)

**CONCLUSION;** Iron deficiency Anemia is the predominant Anemia pattern 92.89% even in chronic alcoholic patients than the folate deficiency 4.37% and B12 deficiency Anemia1.63% and no significant role in this study pertaining to upper gastrointestinal bleeding.

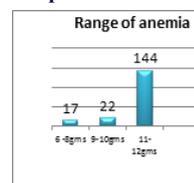
## KEYWORDS

Chronic liver disease, Iron deficiency anemia

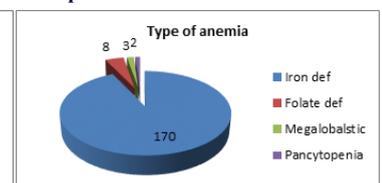
**BACKGROUND:** Chronic liver disease of any cause including alcoholic liver disease is associated with hematological changes. Anemia is a frequent abnormality, seen in about 75% with severe form of liver disease. The cause of anemia is complex and multifactorial .The liver performs an important role in iron metabolism . Iron regulatory hormone hepcidin expressed in iron excess conditions as well as in cases of inflammation,produced in liver blocking the absorption of iron from the enterocytes. One of the contributing factors to the anemia of chronic liver disease is hepcidin with or without cirrhosis, is still under investigation. Another common cause of anemia in patients with liver disease, especially of alcoholic cause attributed to hemolysis resulting in spur-cell anemia . Abnormal cholesterol loading of the red blood cell membrane, which results in spiculated erythrocytes with a short lifespan, called acanthocytes.This study was conducted in order to evaluate anemia pattern in alcoholic liver disease.Aim : To evaluate anemia pattern in alcoholic liver disease. Material and methods: Venue : Government vellore medical college , Vellore. Study Population: 183 male patients attending the department of Medical gastroenterology .Study period :May2018 to August 2018. Alcoholic patients who were taking alcohol for long time with varied quantity with altered LFT between age group of 23-70 years were taken into the study about 183 patients were enrolled in this study..All the patients were informed and consent obtained and underwent CBC,Periferal smear study,serum iron level, vitamin B12, folate, Ultra sound abdomen, upper GI endoscopy, HBsAg,antiHCV,HIV .Inclusion Criteria:Those having Haemoglobin <12 mg /dl,Liver function tests Bilirubin >1.5 and ALT -AST > 3 Times of upper limit were selected, All are male patients between age group of 23-70 with history of significant alcohol intake for a minimum period of about 12 days continuous period with history of dyspeptic symptoms to jaundice were enrolled. Exclusion Criteria: Anemia of congenital etiology, Chronic kidney disease , Terminally ill patients were excluded .All underwent complete CBC profile including Hemoglobin, MCV,MCH, Platelets, iron, vitamin B12,folate,USG abdomen to access splenomegaly, alcoholic hepatitis, alcoholic fatty liver, compensated cirrhosis noted,UGI endoscopy to access varices which may bleed would cause Anemia, peripheral smear study to look for microcytic hypochromic Anemia, megaloblastic anemia, pancytopenia were detailnoted.RESULTS; This is a cross sectional study in which 183 patients ,all are having significant alcohol history with Anemia <12gms/dl, Anemia ranges

between 6-8 (17patients 9.28%) between 9-10 (22patients12.02%), between 11-12 (144patients78.68%) among iron deficiency Anemia 170 patients (92.89%), folate deficiency 8 (4.37%), megaloblastic 3(1.63%), pancytopenia 2 patients (1.09%)USG abdomen 27 patients having splenomegaly, alcoholic hepatitis 67patients (36.62%), alcoholic fatty liver 38 patients (20.76%),compensated cirrhosis 78 patients (42.62%) Upper GI endoscopy varices in three patients(smallvarix) mild portal hypertensive gastropathy in 12 patients(6.55%)

Graph:1



Graph:2



**DISCUSSION:** Direct toxic effect of alcohol on the bone marrow, causing reversible suppression of production of formed elements of blood and subsequently anemia with impaired platelet production and function were the main features associated with anemia of alcoholic liver disease. Malnutrition, resulting in iron, folate, vitamin B12 and B6 deficiency were also seen in the majority of the patients with chronic alcohol abuse . Iron deficiency , with or without anemia, is associated with many symptoms and complications that have a significant and negative impact on patients. It can increase cardiovascular morbidity and mortality, impair cognition, and decrease quality of life . The effect on quality of life is enormous and physically and emotionally affect the patient , impairing their intellectual function f and their ability to work. Iron deficiency can induce metabolic changes in the hepato biliar system.. In a study with rats, Kamei *et al* showed that ID can cause impairment of lipid, glucose and nutrient metabolism, as well as induction of cell apoptosis. Acute or chronic blood loss into the intestinal lumen resulting in iron deficiency anemia is one of the major and treatable causes of anemia in patients with Chronic liver disease. The bleeding in to the GI tract is usually secondary to complications of portal hypertension such as esophageal varices,, PHT gastropathy, gastric antral vascular ectasia (GAVE) or peptic ulcers, more common in patients with cirrhosis .The

fact that patients with liver disease have also had impaired coagulation is a contributing factor to the tendency of bleeding, as well as the thrombocytopenia due to spleen enlargement. The diagnosis iron deficiency anemia is not always straightforward because many of the regular tests used in the diagnosis of ID are affected by hepatic cell injury. In this study Iron deficiency anemia contributes maximum to the anemia pattern in chronic liver disease followed by folate deficiency and B12 deficiency.

**CONCLUSION;** Iron deficiency Anemia is the predominant Anemia pattern 92.89% even in chronic alcoholic patients than the folate deficiency 4.37% and B12 deficiency Anemia 1.63% and no significant role in this study pertaining to upper gastrointestinal bleeding

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