

Study of Haemoglobin Levels in Alcoholics in Comparison with Non Alcoholics.¹Shirisha Jannu, ²Akshay Berad¹Assistant Professor, Dept. Of Physiology, Chalmeda Anandrao Institute of Medical Sciences, Karimnagar, Telangana.²Assistant Professor, Dept. Of Physiology, Chalmeda Anandrao Institute of Medical Sciences, Karimnagar, Telangana.**Correspondence Author:** Dr Akshay Berad, Assistant Professor, Physiology. Chalmeda Anandrao institute of medical sciences, Bommakal, Karimnagar 505001, Telangana., India**Conflicts of Interest:** Nil**Abstract**

Alcoholism represents one of the most serious worldwide socio economic health problems. It is one of the leading cause of preventable mortality, second only to cigarette smoking. Multiple organs can be involved like Hepatobiliary system, cardiovascular system, Central nervous system, Haematopoietic system. Impact of alcohol on haematopoietic system divided into direct and indirect effects. Anaemia is a predominant feature among chronic alcoholics. The study is done to know haemoglobin levels in alcoholics as compared to non alcoholic individuals. 25 adult patients who are moderate alcoholics, 25 patients who are severe alcoholics and 25 adults patients who are non alcoholics were selected. Haemoglobin Estimation was done in all alcoholics and nonalcoholics subjects by Sahli's methods. Statistical analysis was done .P value <0.05 was considered as significant. It was observed Hemoglobin levels in severe alcoholics was less than moderate alcoholic subjects. Both moderate and severe alcoholic subjects had haemoglobin levels less than that of non-alcoholic subjects. This shows that haemoglobin levels in alcoholic subjects are decreased. This study will help to create awareness for diagnosis of anemia by estimating low haemoglobin levels in alcoholic subjects.

Key words: Alcoholics, non-alcoholics, haemoglobin.**Introduction**

Alcoholism represents one of the most serious worldwide socio economic health problems. It is one of the leading cause of preventable mortality, second only to cigarette smoking. Alcoholism is characterised by increased tolerance and physical dependence on alcohol, affecting an individual's ability to control alcohol consumption safely. According to national council of alcoholism and drug dependence, alcoholism is a primary chronic disease with genetic, psycho social and environmental factors influencing its developmental manifestations. As per figures released by World health organisation in 2011 have shown that alcohol is responsible for causing almost 2.5 million deaths per annum. 4% of all deaths worldwide. Worldwide 6% all male deaths are related to alcohol, just over 1% deaths in women. Almost 1 in 10 deaths among young people age 15-29 years from alcohol [1]. Hence alcohol consumption is known for morbidity and mortality, being a serious health hazard of the world. Multiple organs can be involved like Hepatobiliary system, cardiovascular system, Central nervous system, Haematopoietic system.

The study is done to know haemoglobin levels in alcoholics as compared to non alcoholic individuals. A number of clinical observations in man have suggested that alcohol may act as a hematologic toxin. Acutely intoxicated alcoholic patients frequently have depressed

levels of circulating reticulocytes, granulocytes or platelets on admission to the hospital[2].

Impact of alcohol on haematopoietic system divided into direct and indirect effects .Direct effect seen in bone marrow and involves red cell, white cell and platelet lines. Indirect effect due to metabolic or physiologic alterations resulting in liver disease and nutritional abnormality such as folate deficiency [3].

Anaemia is a predominant feature among chronic alcoholics. A look at the haemoglobin levels can alert a physician if the patient is a chronic alcoholic, even when there is no anemia [4]. Need of the study is early detection and treatment of haemoglobin changes in alcoholics, so can prevent complications and reduce the mortality. Objective of study was to compare haemoglobin level changes in alcoholics as compare to non-alcoholics.

Material and Methods

A detail history was taken in alcoholics about quantity, type of alcohol and number of years of alcohol consumed .Name, age, gender, occupation and socioeconomic status was noted. General and systemic examination was done.

A. Samples Size:

- 25 adult patients who are moderate alcoholics
- 25 patients who are severe alcoholics and
- 25 adults patients who are non alcoholics

B. Inclusion Criteria:

- All adult patients who are moderate alcoholics that is who consume alcohol less than 80 to 90 mg alcohol which is about 11 drinks per day.
- All adult patients who are severe alcoholics that is who consume more than 80 to 90 mg alcohol or more than 11 drinks per day.
- 20-25 adult patients who are non alcoholics taken as control.

C. Exclusion Criteria

- All patients who are less than 18 years

- Patients with other hepatic disorders
- Patients receiving hepato- toxic drugs

D. Study Design: It is a prospective cross sectional study Haemoglobin Estimation was done in all alcoholics and nonalcoholics subjects by Sahli’s methods.Statistical analysis was done .P value <0.05 was considered as significant.

Results

Table 1: Age of subjects.

Age in years	Alcoholics	Non-Alcoholics
21-30	5	1
31-40	13	6
41-50	18	7
51-60	9	7
60 & above	5	4
Total	50	25
Mean+/_SD	36.04+/_11.28	48.64+/_11.35

Table 1 show maximum alcoholics were in age group 31-50 years.

Table 2 Comparison of haemoglobin levels in alcoholics and non alcoholics.

	Moderate Alcoholics	Severe Alcoholics	Non Alcoholics	Significance
Haemoglobin concentration (gm %)	9.58+/_1.34	8.59+/_2.27	11.63+/_2.1	P=0.006

Table 2 shows that Alcoholic subjects were anemic i.e haemoglobin levels were below normal values(normal haemoglobin levels 12-18gm%).Hemoglobin levels in severe alcoholics was less than moderate alcoholic subjects.Both moderate and severe alcoholic subjects had haemoglobin levels less than that of non-alcoholic subjects.This shows that haemoglobin levels in alcoholic subjects are decreased.

Discussion

In the study done by T.odula et al in Nigeria out of 200 patients age of patients ranged from 20 to57 years ,mean age being 36.04+/_11.28 years[5].In present study the age

of patients ranged from 20 to 57 years. Maximum alcoholics were in age group of 31 to 50 years. Alcoholism was less common below 20 years and above 65 years of age.

Alcohol as well as alcohol induced cirrhosis leads to decreased Red blood cell production. Hypersplenism can cause premature RBC destruction. Folic acid deficiency impairs RBC production and results from decreased ingestion, decreased absorption, and abnormal metabolism of folic acid[6]. Hypersplenism, blood loss, liver disease, folic acid deficiency, and reduced RBC production are causes of low haemoglobin levels in alcoholics[7]. Alcoholism has effect on platelet count, blood indices, total leucocyte count also[8]. Nigerian Journal of Clinical Practice Vol. 6(2) 2003: 84-86 Routine haematological indices were studied in problem drinkers to help in the diagnosis of alcohol related disorders. A look at the haemoglobin, profile especially MCV, platelet count, can alert a physician if the patient is a chronic alcoholic, even when there is no anaemia .

Conclusion

Alcoholism was more common in middle aged subjects. Anemia was more in severe alcoholics than in moderate alcoholics and non alcoholics. Early detection of anemia in alcoholics can help to prevent future complication of anemia and reduce mortality. This study will help to create awareness for diagnosis of anemia by estimating low haemoglobin levels in alcoholic subjects.

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