



A CLINICAL HEMOTOLOGICAL PROFILE OF PANCYTOPENIA IN ALCOHOLICS IN A TERTIARY CARE HOSPITAL - A CROSS SECTIONAL STUDY

General Medicine

**Dr. Kodipalli
Vijaya Bharathi**

Final year Postgraduate, Department of General Medicine

**Dr K. Hanuma
Kumar**

Associate Professor, Department of General Medicine, Santhiram Medical College and Hospital, Nandyal

ABSTRACT

Background: PANCYTOPENIA is characterised by reduction in all three formed elements of blood i.e., HB, RBC, WBC, PLATELETS. Disease varies according to age, nutritional status, and geographical distribution. Treatment depends on the severity of pancytopenia and underlying pathology. There are variety of causes for pancytopenia, we concentrated to study about clinical profile of pancytopenia in patient who consumes alcohol. **Aim:** The aim of the study is to evaluate the clinical presentation of pancytopenia particularly in alcoholic people. **Materials and Methods:** A total of 50 cases with diagnosed pancytopenia patients with history of alcohol consumption in medical outpatient and admitted in medical wards of Santhiram medical college and general hospital, Nandyal for six months. **Results:** The total 50 patients with diagnosed pancytopenia were studied out of which 96% were males and 4% were females. Dyspnea 28%, 32% with fatigue and 20% with leg swelling, 10% with mucosal bleed and fever are most common clinical presentations. In the present. In our study leucocyte count less than 3000 were 22 patients, leucocyte count 3000-4000 were 26 patients, more than 4000 were 2 patients. Most patients were fall in between 3000 to 4000 counts. In our study patients with platelet count less than 50000 were 15, platelet count 50000-75000 were 25, platelet count 75000-90000 were 10. **Conclusion:** Incidence of ALCOHOL induced pancytopenia has increasing in recent years. Maybe more number of alcoholics and also female alcoholics slightly increased. With help of our study we found that alcohol is one of the important cause for pancytopenia.

MECHANISM OF ALCOHOL CAUSING PANCYTOPENIA

1. DIRECT ACTION OF ALCOHOL OVER BONE MARROW

2. IN ALCOHOLICS, NUTRITIONAL DEFICIENCY (VITAMIN B12 AND FOLIC ACID) LEADING TO MACROCYTOSIS.

Predominant bone marrow picture is dimorphic picture. Young adults contributed as the major bulk of patients. So, whenever patient presents with pancytopenia alcohol history in detail has to be considered.

KEYWORDS

INTRODUCTION

PANCYTOPENIA is a condition in which persons body has too few red blood cells, white blood cells, and platelets.

ANEMIA- LOW LEVEL OF RED BLOOD CELLS

LEUKOPENIA- LOW LEVEL OF WHITE BLOOD CELLS

THROMBOCYTOPENIA- LOW PLATELET COUNTS

HEMATOPOIESIS: The Formation of Blood i.e.,

1. The developmental processes of the formed elements in blood
2. In the red bone marrow from the descendants of the pluripotent hemopoietic stem cell by the processes of proliferation and differentiation
3. Each stem cell can give rise to as many as 211 mature cells.

ERYTHROPOIESIS: The Formation of Red Blood Cells, i.e.

1. The developmental processes of the red blood cell
2. In the red bone marrow from the descendants of the proerythroblast stem cell by the processes of proliferation and differentiation
3. Each hemocytoblast stem cell can give rise to as many as 211 mature cells.

Aims and Objectives

The aim of the study is to evaluate the clinical hematological presentation of pancytopenia particularly in alcoholic people.

The primary objective of this study is to assess the significance of alcohol in clinical presentation of pancytopenia.

MATERIALS AND METHODS:

A Hospital-based cross-sectional study was conducted in the Department of General Medicine Santhiram Medical College, and General Hospital for six months after approval from the Hospital Ethics and Research Committee.

Duration of Study: From February 2024 to June 2024

Sample Size: 50

Methods of Data Collection

- Information will be collected through a pre structured proforma for each study subject.

- The study will be carried out on pancytopenia in alcoholic patients
- Qualifying study subjects will be undergoing detailed history, clinical examination and laboratory investigations.

Sampling Technique: Simple Random Sampling

Inclusion Criteria:

1. Inclusion criteria were presence of all of the following: Haemoglobin <10gm/dl
Total RBC count < 4.5 million / μ L
Total WBC count <4,000 / μ L
Platelet count <1,00,000 / μ L
2. Age group >21 years
3. Patients who consumes alcohol
4. Patients who are willing to participate and will give informed and written consent

Exclusion Criteria:

1. Patients who doesn't consumes alcohol
2. Patients <21 years
3. Other causes of pancytopenia
4. Patients who are not willing to participate and will not give informed and written consent.

Data Analysis

1. Data was collected using a pretested proforma meeting the study's objectives. Detailed history, physical examination, and necessary investigations were undertaken.
2. The chi-square and Fisher's Exact test were used in statistical analysis to compare proportions. At a P-value of 0.05, statistical results were considered significant <0.01.

RESULTS

Table 1: Distribution of Patients According to Age and Sex Distribution

Age	Male	Female	Total
21-34 yrs	3	0	3
35-44yrs	16	0	16
45-54yrs	17	1	18
55-64yrs	6	0	6
65-84yrs	4	1	5

>85yrs	2	0	2
	48	2	50

Above data suggest that out of total 50 patients with diagnosed pancytopenia, 96% were males (48 males) and 4% were females (2). 74% of the patients were within age of 45-54yrs, 32% of them were within 35-44yrs. So maximum numbers of patients were clustered between 35-54yrs of age (36%+32%=68%).

Table 2 : Distribution of Patients Based on HB %

Age group	Mean HB
21-30	7.90
31-40	6.29
41-50	5.63
51-60	5.32
Above 60	4.65

Above data suggests that About 7.9 mean HB for 21-30, 6.29 mean HB for 31-40 age group then 4.65 for age group >60

Table 3 : Distribution of Patients Based on WBC

TOTAL NO SCORE	Frequency	Percent
<3000	22	44.0
3001-4000	26	52.0
>4000	2	4.0
Total	50	100.0

Out of 50 patients, 52% of the patients were between 3001-4000 About 44% of them were below 3000 count.

Table 4 : Distribution of Patients Based on Platelet Count

Platelet score	Frequency	Percent
<50000	15	30
50001-75000	25	50
75000-90000	10	20
Total	50	100

Out of 50 patients, the platelet score 50% belongs to 50001-75000 group and 30% belongs to <50000 and 20% belongs to 75000-90000 platelet count group

Table 5 : Distribution of Patients Based on Peripheral Smear

Peripheral smear	Frequency	Percent
MACROCYTES	12	24
MACROCYTES ELONGATED CELLS	2	4
MACROCYTES, TEAR DROP CELLS	9	18
MACROCYTES, ANISOPOIKLOCYTES	3	6
MACROCYTES, ELONGATED CELLS	3	6
MACROCYTESC, ANISOPOIKLOCYTES	2	4
MACROOVALOCYTES	3	6
MICROCYTES, MACROCYTES	16	32
Total	50	100

Table 6 : Distribution of Patients Based on Symptoms

Symptom	Frequency	Percent
Dyspnea	14	28
Fatigue	16	32
Fever	5	10
Leg swelling	10	20
Mucosal bleeding	5	10

Among the study group of 50 patients the most common symptoms present are Dyspnea 28%, fatigue 32% then leg swelling 10% fever and mucosal bleeding are 10%.

DISCUSSION

The study involving 50 patients done at santhiram medical college hospital has thrown light over the newly diagnosed Pancytopenia patients. The results of this study confirms with previous published reports In this study involving 50 patients, to determine prevalence of pancytopenia (males 48 and 2 women) Most common presenting complaints were dyspnoea, leg swelling, mucosal bleeding, fatigue, fever. Percentage of patients like dyspnoea (28%), fatigue (32%) fever (10%), mucosal bleeding (10%), leg swelling (20%). In my study fatigue were the most common complaints. In the present In our study leucocyte count less than 3000 were 22 patients, leucocyte count 3000-4000 were 26 patients, more than 4000 were 2 patients. Most patients were fall in between 3000-4000 counts. In our study patients with platelet count less than 50000 were 15, platelet count 50000-75000 were 25, platelet count 75000-90000 were 10 with mean platelet

61290.00. p value of 0.020. The data are varying probably because there were small number of cases in present study. In our study peripheral smear revealed macrocytes, elongated cells, tear drop cells, anisopoikilocytes, macroovalocytes, both microcytes and macrocytes. All slides showed macrocytes specific for alcohol induced pathology. Macrocytes with elongated cells 2 patients, macrocytes with tear drop cells 9 patients, macrocytes with anisopoikilocytes 3 patients, macroovalocytes in 3 patients, macrocytes with microcytes 16 patients P value of 0.565.

CONCLUSION

- Incidence of ALCOHOL induced pancytopenia has increasing in recent years.
- Maybe more number of alcoholics and also female alcoholics slightly increased.
- With help of our study we found that alcohol is one of the important cause for pancytopenia
- Predominant bone marrow picture is dimorphic picture.
- Middle age group contributed as the major bulk of patients
- So, whenever patient presents with pancytopenia alcohol history in detail has to be considered.