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Medical Science

ALCOHOLIC LIVER DISEASE (ALD): A CASE STUDY IN VIJAYAPUR CITY OF KARNATAKA

KEY WORDS: Alcoholic Liver Disease, Liver Cirrhosis, Hepatitis, Vijayapur, India.

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ABSTRACT

Introduction: Alcoholic Liver Disease (ALD) is a global health issue increasing in India due to chronic alcoholism among youth and middle-aged. A Clinical study has been conducted in two major hospitals, namely, Al-Ameen Medical College Hospital (AMCH) and BLDEAs Medical College Hospitals of Vijayapur city. **Methods And Tools:** The present study is based on Case Reports of ALD patients who were visited OPD Sections of both the Hospitals. Total 180 ALD Case Reports in both the hospitals were analysed and discussed. **Discussion And Findings:** Majority of the ALD patients include young and middle aged, that is between 30 to 50 years and they are addicted to severe alcoholism. The study has revealed the Serum Enzyme levels, Protein Levels, analysis of clinical tests and complications of these patients. **Conclusion:** At the initial stage, broad spectrum of antibiotics are administered to these patients and in case of severe ALD, oral corticosteroids are suggested. It is strongly suggested to these patients to discontinue consumption of alcoholic drinks. To conclude, it is essential to curb menace of alcoholism among people.

INTRODUCTION:

In India, there is excessive alcoholic consumption among people especially among young and it is estimated that, 35% to 50% of the people are addicted to alcoholic drinks now. Chronic Alcoholism results in Alcoholic Liver Disease (ALD). Alcoholic Liver Disease is caused to excessive alcohol consumption results in hepatic lesions and often grouped into three histological stages of ALD: fatty liver or simple steatosis, alcoholic hepatitis and chronic hepatitis with hepatic fibrosis or cirrhosis (Wadekar, 2021). Psychologically, alcoholism have different types of health ailments such as fatigue, inflammation, temporal muscle wasting, altered consciousness, memory loss, psychomotor agitation, ataxia and transient hallucinations. In 2010, 7.2 deaths per 100,000 people (4.6 deathsper 100,000 females and 9.7 deaths per 100,000 males) werecaused by liver cirrhosis attributable to alcohol consumption (Rehm, et al, 2013).

Clinical syndrome of alcoholic hepatitis can be asymptomatic. However, in severe condition, this disease can be life-threatening with symptomsincluding jaundice, ascites, kidney failure, gastrointestinal bleeding, increased risk of infection, and encephalopathy (Mustikaand Arifah, 2017). The present study is made to analyse the biochemical parameters, clinical presentations and complications faced by ALD patients who have visited two major medical college and research centre hospitals of Vijayapur city of Karnataka.

Methodology And Tools:

As discussed above, the present study has been made in BLDE Medical College and Research Centre Hospital and Al-Ameen Medical College Hospitals of Vijayapur city. The Case Reports of ALD patients registered at the OPD of both hospitals were analysed. It is found that, between 01st January 2023 to 30th June 2024, total 254 patients were consulted in both the hospitals and of which, 180 Case Reports were studied and analysed.

Laboratory Tests Conducted:

To detect and diagnose ALD, anti-nuclear antibodies (ANA), anti-smooth muscle antibodies (ASMA), anti-liver-kidney microsomal antibodies type 1 (ALKM-1), and serum IgG immunoglobulins were made. Techniques such as ultrasound, computed tomography (CT), magnetic resonance imaging (MRI), and transient elastography (FibroScan) are utilized. In Alcoholic Liver Disease (ALD), Maddrey Discrimination Function (MDF) is used to stratify disease severity. The formula is MDF=4.6 (Patients PT- Control PT)+Total Bilirubin (mg/dL) (Mustika and Arifah, 2017).

Analysis of Data:

It is observed that, severe alcoholism is found among young, teen and middle aged compared to old aged. Even such habits are found among rural men compared to urban people. In this context, the age of the ALD patients visited to both the hospitals is shown as under.

Table. 1. Age Group Of ALD Patients

Age Group (In Years)	No. of Patients	Percentage
Less than 30	12	6.7
31 to 40	33	18.3
41- 50	48	26.7
51-60	62	34.4
More than 60	25	13.9

It is observed that, ALD is present more in middle age groups (41 to 60 years) compared to lower or higher age groups. The laboratory tests of these selected cases are presented in the following table.

Table 2. Elevated Serum Enzyme Levels And Protein Levels Of The Patients

Sl. no	Patient Characteristics	Mean level of Baseline Characteristics [with Standard Deviation] {n=180}	Normal levels	Total Patients With elevated levels[out of 180]
1	AST[u/L]	42.7 ±39.8 U/L	29 to 33 in men and 19 to 25 in women	49
2	ALT[u/L]	63.7 ±37.8 U/L	44 -147	40
3	GGT[u/L]	88.9 ±72.2 U/L	9 -48	36
4	CHOLESTEROL [mg/dL]	210.3 ±47.6	<200 mg/dL	29
5	LDH[u/L]	289.4±35.8	140 – 280	
6	TRIGLYCERIDES [mg/dL]	139.7 ±68.2	<150 mg/dL	73
7	HDL[mg/dL]	44.0 ±13.2	>60 mg/dL	65

8	LDL[mg/dL]	133.2 ±40.3	<100 mg/dL	51
9	Total protein [g/dL]	8.0 ±1.6	6-8.3 g/dL	25
10	Albumin [g/dL]	4.0 ±0.5	3.5-5.5 g/dL	56
11	Albumin/ globulin ratio	1.8 ±1.7	1.1-2.5	50
12	Prothrombin time	1.8±2.0	<1.5	37

Above table shows that, about one-third of ALD patients are suffering from acute liver cirrhosis, fatty liver, alcoholic hepatitis. A few of them are also having experiences of fatigue, abdomen inflammation, gastric disorders and so on.

Jackson and Gleeson (2010) have listed signs of acute hepatitis based on clinical findings in a patient with ALD. It reveals that, Jaundice, Tender Hepatomegaly, Fever (<38.50, often sawtooth) and signs of chronic liver disease include Leuconychia, Palmar erythema, Dupytren's contracture, Spider naevi, Telangactasia, Bruising, Oedema, Parotid Swelling, Gynaecomastia, Testicular atrophy, Encephalopathy, Portal Hypertension, Ascites, Splenomegaly, abdominal varices, poor nutrition resulting muscle wasting, weight loss and Glossitis. In the following table, the clinical presentation of alcoholic liver disease patients is shown.

Table 3. Prognostic Scoring Systems Of Alcoholic Hepatitis

Sl. no	Scoring system	calculation	Severe disease score
1	Maddrey discriminant function (mDF):-	4.6 x [patient's prothrombin time(seconds)-control prothrombin(seconds)+bilirubin(mg/dL)	32
2	Model for end-stage liver disease (MELD):-	3.8 x $\log_e$ bilirubin(mg/dL)+11.2 x $\log_e$ INR +9.6 x $\log_e$ creatinine (mg/dL)+6.4	21
3	Glasgow Alcoholic Hepatitis Score (GAHS):-	1 2 3 Age(years) <50 >50 - WCC(10^3/L) <15 ≥15 - Urea(mmol/L)<5 ≥ 5 - PT ratio <1.5 1.5-2.0 >2.0 Bilirubin(µmol/L) 125 125-250 >250 -Sum the points assigned for each of the 5 variables	9
4	ABIC:-	Age(years) x 0.1+ bilirubin(mg/dL) x 0.08 +creatinine(mg/dL) x 0.3 +INR x 0.8	9
5	Lille score:-	3.19-0.101 x age(years) + 0.147 x albumin on day 0(g/L)+0.165 x the change in bilirubin between day 0 and day 7 of corticosterod treatment(µmol/L)-0.206 x renal insufficiency (rated as 0 if absent and 1 if present)-0.0065 x bilirubin on day 0 (µmol/L)-0.0096 x prothrombin time(seconds)	0.45

The table compares five scoring systems used to assess the severity of alcoholic hepatitis:

1. Maddrey discriminant function (mDF): Based on prothrombin time and bilirubin. A score ≥32 indicates severe disease.

2. Model for end-stage liver disease (MELD): Utilizes bilirubin, INR, and creatinine to gauge liver disease severity. A score ≥21 signals severe disease.

3. Glasgow Alcoholic Hepatitis Score (GAHS): Considers age, WCC, urea, PT ratio, and bilirubin. A score ≥9 denotes severe disease.

4. ABIC: Combines age, bilirubin, INR, and creatinine. A score ≥9 reflects severe disease.

5. Lille score: Integrates age, albumin, and bilirubin changes post-corticosteroid therapy. A score of 0.45 suggests poor prognosis.

These systems assist clinicians in assessing disease severity and guiding therapeutic decisions in alcoholic hepatitis.

Table.4 . Clinical Presentation Of ALD Patients

Characteristics	No. of Patients	Percentage
Fever	22	12.2
Melena	97	53.9
Weight Loss	73	40.5
Jaundice	105	58.3
Ascites	89	49.4
Hepatomegaly	51	28.3
Anorexia	46	25.5
Pedal Oedema	45	25.0
Hepatic Encephalopathy	41	22.8
Hematemesis	28	15.5
Oliguria	25	13.9

When the clinical tests of the patients are analysed, it is found that, Jaundice and Melena is found among majority of the ALD patients. Even incidence of weight loss and ascites are also found in considerable number of patients. When the symptoms as expressed by patients and after analysis of clinical tests, following complications are observed among ALD patients.

Table.5. Complications In ALD Patients

Complications	No. of Patients	Percentage
Chronic Liver Disease	46	25.5
Portal HTN	31	17.2
Hepatic Encephalopathy	23	12.7
Upper GI Bleed	18	10.0
Hepatic Coma	14	7.7
Renal Failure	12	6.6
Psychotic Syndrome	07	3.9
Spontaneous Bacterial Peritonitis (SBP)	06	3.3

DISCUSSION:

It is observed that, ALD is varied among patients from liver steatosis to acute liver cirrhosis. Severe alcohol abuse has resulted in livery injury from mild fatty to acute cirrhosis and hepatocellular carcinoma. The prognosis of patients is depends on various factors such as quitting of alcohol consumption, nutritional facts, food and extent of damage to liver.

CONCLUSION:

Alcoholic Liver Disease is gradually increasing among young and middle aged groups and it is due to chronic alcoholic consumption among these groups. If the complications of ALD are detected at the early stage, then there may be lower or no further health complications. At the initial stage, ALD and alcoholic hepatitis can be administered with broad spectrum antibiotics.

For severe alcoholic hepatitis, prednisolone **(40 mg/day for 28 days)** is the preferred treatment due to its direct therapeutic action without liver metabolism. For patients unable to take oral medication, intravenous **methylprednisolone (32 mg/day)** is an alternative. If there is no response to steroids within a week, indicated by a **Lille**

score >0.45, treatment should be discontinued. **Responders (Lille score <0.45)** should continue prednisolone for an additional three weeks. Glucocorticoids exert anti-inflammatory effects by modulating gene expression.

Contraindications to steroid therapy include **active GI bleeding, severe pancreatitis, uncontrolled diabetes, active infection,** or **renal failure**. In such cases, **pentoxifylline (400 mg, three times daily for 28 days)** is considered. **Hepatorenal syndrome** and **acute kidney injury** predict poor steroid response, while patients with bacterial infections may receive corticosteroids once the infection is controlled. Response to prednisolone is classified as **complete (Lille score <0.16), partial (0.16–0.56)**, or **null (>0.56).** A Lille score **>0.45** after one week of corticosteroids is associated with **75% six-month mortality.**

Cognitive behavioral therapy (CBT) a psychological treatment that can be effective for treating alcoholic liver disease which may have a good chance of a complete cessation of alcohol .Vitamin K plays a crucial role in managing patients with **alcoholic liver disease (ALD)** due to its essential function in blood coagulation. In individuals with liver failure, **Vitamin K deficiency** is common, further impairing coagulation. Studies recommend administering a single **10 mg intravenous dose** of Vitamin K to patients with suspected deficiency, as it helps restore proper clotting function and addresses coagulation abnormalities associated with ALD.

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