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Original Research Article

A Study of Patients of Alcoholic Liver Disease with Special Reference to Different Scoring Systems for Prognostication

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Abstract: The aim was to study the clinical profile of patients having alcoholic liver disease (ALD) and prognosticating these with special reference to 5 different scoring systems (Child-Pugh score, ABIC, GAHS, MELD and MDF). The study population included total 100 patients proven to have ALD on the basis of clinical, biochemical and ultrasonographic parameters. Different scoring systems were used to predict disease severity and mortality risk in patients with ALD. In the present study all the cases were males. Out of the 100 patients majority of the patients were in the age group of 30–39yrs (34%), (88%) consumed 180ml of alcohol per day and (53%) consumed alcohol for a period of 11-20yrs. Nausea and vomiting (89%) was an important symptom, Jaundice was an important finding in alcoholics seen in 88%. Out of 100 cases 3 cases (3%) had normal liver function tests, whereas remaining 97 had one or other abnormal liver function tests. Sensitivity and specificity is maximum corresponding to MELD test. So we conclude that test MELD is best among the all.
Keywords: Child-Pugh score, ABIC, GAHS, MELD, MDF, ALD

INTRODUCTION

Alcoholic liver disease is a spectrum of clinicopathological abnormalities, reflecting an acute or chronic inflammation of the liver parenchyma induced by alcohol use. The prevalence of ALD worldwide is 94.8 per 10000. Alcohol is directly hepatotoxic. Toxic protein-aldehyde, Endotoxins, oxidative stress, immunologic activity and proinflammatory cytokines contribute to resulting liver injury [1].

In patients with alcoholic hepatitis, clinical manifestations include fever, jaundice, hepatomegaly and possible hepatic decompensation with hepatic encephalopathy, variceal bleeding and ascites accumulation. Tender hepatomegaly may be present but abdominal pain is unusual. Occasionally, the patient may be asymptomatic [2, 3].

Patients with Alcoholic cirrhosis may have parotid gland enlargement, Spider naevi, palmar erythema, hepatosplenomegaly, portal hypertension, fluid and electrolyte abnormality, gynaecomastia, Testicular atrophy and Hepatic encephalopathy. Laboratory findings show elevation of Serum bilirubin, elevation of serum AST compared to ALT, hypoalbuminemia, leucopenia, thrombocytopenia, prolonged PT, INR [4].

To predict disease severity and mortality risk in patients with alcoholic liver disease ,different scoring systems are used such as Child-Pugh score, ABIC (age ,serum bilirubin ,INR , creatinine), GAHS (Glas gow alcoholic hepatitis score), MELD (Model for End Stage Liver disease) and MDF (Maddey's discriminant function).

METHODOLOGY

This was a prospectivestudycarriedoutinD. Y. PATIL Hospital & Research Institute,Kadamwadi, Kolhapurfrom May2013toApril2015,onthepatients attendingthehospital.Atotalof100patientswithalcoholicli verdiseaseswereincluded inthisstudy that fulfilled the inclusion and exclusion criteria.

Afterhavingselectedcasesforthe study, carefulhistory &examinationwas carried out in each patient and all biochemical and ultrasonographical investigations were donein particular relation to alcoholicliver diseases. The quantity and duration of alcohol consumption was also noted.

Various scoring systems such as Child Pugh score, MELD, MDF, ABIC and GAHS are applied and each patient categorized into short term and long term mortality. Clinical progress of each patient was noted during hospital stay.

Descriptive and inferential statistical analysis has been carried out in the present study. Chi-square test has been used for Qualitative data and to find out the significance of study parameters on categorical scale between two or more groups. ROC (Receiver operating characteristic) analysis was carried out on SPSS version 19 to see sensitivity and specificity of each score.

RESULTS

Majority of the patients were in the age group of 30-39 years (34%). ($p < 0.0001$), most of the patients (88%) were consuming 180 ml of alcohol/day.($p < 0.0001$), 53% of alcoholics were consuming for a period of 11 to 20 years($p < 0.0001$).

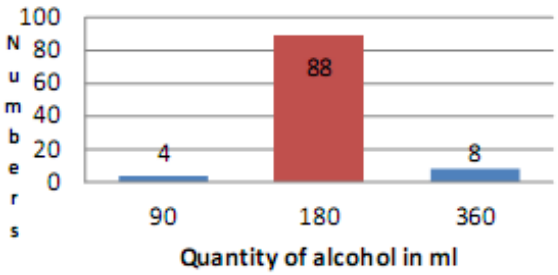

Fig-1: Quantity of alcohol in ml

Nausea and vomiting was an important symptom seen in 89% of the alcoholics, followed by Pain in abdomen (68%) and Fluid retention in (66%)

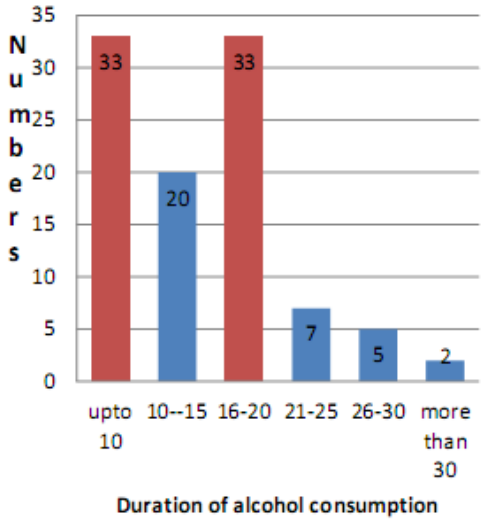

Fig-2: Duration of Alcohol cosumption

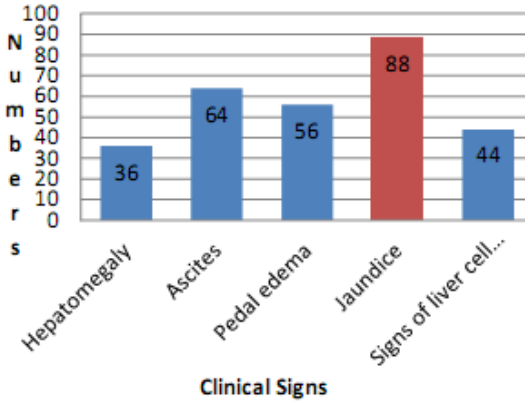

Fig-3: Clinical signs

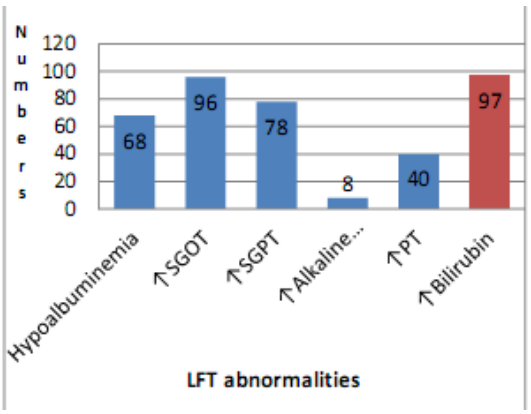

Fig-4: LFT abnormalities

Jaundice was an important finding in alcoholics seen in 88%, ascites in 64% and pedal edema in 56%. Hepatomegaly was another important finding seen in 36%. Other signs of liver cell failure were seen in 44% of the patients.

Raised bilirubin was seen in 97%, raised SGOT in 96 % and SGPT in 78%. Hypoalbuminemia seen in 68%.Liver Cirrhosis was seen in 43%. Fatty Liver was seen in 32% of alcoholics studied.

ROC (Receiver operating characteristic) analysis was carried out on SPSS version 19 to see sensitivity and specificity of each score.AUC, sensitivity and specificity is maximum corresponding to MELD test.

Table-1: ROCanalysis

Test	Cut-off	% of Miss classification	AUC	Sensitivity	Specificity
CP	11.5	18	0.90	0.85	0.81
MELD	13.3	8	0.94	0.85	0.937
MDF	17.0	17	0.84	0.81	0.835
GASH	7.5	11	0.88	0.71	0.937
ABIC	7.70	15	0.81	0.61	0.911

DISCUSSION

Majority of the patients were in the age group of 30–39yrs (34%). This correlated with the study by Pooja J Belani [5].Majority of the patients (53%) consumed alcohol for a period of 11-20yrs. Nitya Nand *et al* [6] in their study revealed that mean duration of alcohol intake was 17yrs.

Nausea and vomiting was an important symptom, which was seen in 89% of the alcoholics. Pain in abdomen was seen in 68%, features of fluid retention in 66%. In the study by Nitya Nand *et al* [6],Distention of abdomen was an important symptom in alcoholics, which was seen in 78% and abdominal pain in 55% of the alcoholics.

Jaundice was an important finding in alcoholics seen in 88%. Ascites was seen in 64%, Pedal oedema in 56% and signs of liver cell failure and Hepatomegaly in 44% and 36% of the patients respectively. The present study correlated with the study by Nitya Nand *et al* [6].

In this study hypoalbuminemia was observed in 68% of the patients. In Nitya Nand *et al*[6] study hypoalbuminemia was 65%.

Hyperbilirubinemia was seen in 97% of the patients where its incidence was 26% and 44% of the patients with hepatitis and cirrhosis respectively. The Medenhall study showed that bilirubin was elevated in 65% of patients with alcoholic hepatitis and 90% with cirrhosis [2].

Our study as well as the comparative studies such as Savolainen *et al*[7], Medenhall [2] and Lelbach [8], shows that the severity of liver disease is in relationship with the amount and duration of alcohol.

Sensitivity of Child Pugh score and MELD is 0.857 which is higher than the rest of the scores and specificity MELD and GASH score are 0.937 which is higher than the rest of the scores.AUC, sensitivity and specificity is maximum corresponding to MELD test. So we conclude that test MELD is best among the all.

Pooja J Belani *et al*[5] study also concluded that MELD is the reliable predictor of mortality. So we conclude that test MELD is best among the all.

CONCLUSION

Alcoholic liver disease was commonly seen in middle aged males. Nausea and Pain abdomen were the most common symptom and Jaundice was the most common sign in alcoholic liver diseases.Liver cirrhosis was the most common Ultrasonographical finding in alcoholic liver diseases.

The various symptoms, signs and liver function tests give a clue of alcohol induced liver damage. Clinical, biochemical and Ultrasonographical abnormalities revealed various stages of hepatic damage. The severity of liver damage was directly related to the quantity and duration of alcohol consumption.

Various scoring systems used to predict the mortality in which MELD was the most reliable predictor of mortality. The study highlights various predictors of mortality in case of alcoholic liver disease patients that may help us in early recognition of poor outcome and aggressive management of patients to decrease mortality.

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