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A STUDY OF CLINICAL PROFILE OF ALCOHOLIC LIVER DISEASE AND ITS RELATION TO ALCOHOL DEPENDENCE SYNDROME

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ABSTRACT **SUMMARY:** Alcohol is the world's third largest risk factor for disease burden. Hence we studied the prevalence of ALD in alcohol dependence syndrome (ADS) and their clinical profile. This study is a cross sectional study over 18 months. All patients with ADS as per ICD -10 were enrolled. The clinical profile of alcoholic liver disease, and its prevalence, in alcohol dependence syndrome was studied. Data was analysed using Fisher exact test. All participants were male 100% (n = 370). The prevalence of Alcoholic liver disease was 83.7%(n= 310). 53.2% consumed alcohol in the range of 60 – 79g/day. Mean duration of alcohol consumption was 10.04 ± 5.69 years, average duration of alcohol intake in those with fatty liver, hepatitis and cirrhosis was 7.7, 9.5 and 18.34 years respectively. Mean Discriminant function was 18.86 with DF > 32 in 11.61 % cases. Mean MELD score among these patients was 17.3. The commonest presentation was nausea (51.89%), abdominal pain (30.5%) and tremulousness (27.56%).

KEYWORDS : Alcohol dependence, alcoholic liver disease, MELD score, Discriminant function.

INTRODUCTION:

Alcohol is the world's third largest risk factor for disease burden. The harmful use of alcohol results in 2.5 million deaths each year. Most of the mortality attributed to alcohol is secondary to cirrhosis[].The spectrum of alcohol-related liver injury varies from simple steatosis to cirrhosis. These are often grouped into three histological stages of ALD. These are: fatty liver or simple steatosis, alcoholic hepatitis (AH), and chronic hepatitis with hepatic fibrosis or cirrhosis. The possible factors that can affect the development of liver injury include the dose, duration and type of alcohol consumption, drinking patterns, gender, ethnicity, and associated risk factors, including obesity, iron overload, nutritional deficiency esp. protein, pregnancy, concomitant infection with viral hepatitis and genetic factors. The available literature on prevalence of ALD in those who consume significant alcohol is from the western countries. The data on same is sparse in Indian sub-continent where ethnicity, diet, co-existing risk factors for developing liver disease are different as compared to the Western world. Hence we studied the prevalence of ALD in alcohol dependence syndrome (ADS) and the clinical profile of ALD patients in our hospital.

MATERIAL AND METHODS

Study design: This study is a cross sectional study which was carried out in a tertiary care hospital over 18 months. All subjects were informed about the nature of study in a language they understood and a written informed consent was taken, institutional ethical committee clearance was taken. A detailed history, examination and investigation were done to establish etiology and severity of liver disease. The inclusion and exclusion criteria was as follows:

Inclusion Criteria: All patients with ADS as per ICD -10 ;

Exclusion Criteria:

- Unwilling to give consent for the study
- Chronic liver disease due to any other cause like Wilson's disease, hemochromatosis, hepatic venous outflow tract infection, chronic viral hepatitis and autoimmune etiology.
- Other significant co-morbid conditions such as cardiac, respiratory and renal illness.

STATISTICS

The clinical profile of alcoholic liver disease and its prevalence in alcohol dependence syndrome was studied. Data was analysed using Fisher exact test.

RESULTS

All the study participants were male 100% (n = 370). The mean age was 40.45 ± 8.83 years. Around half of the cases (51.1%) were found to be in the age group of 31 - 40 years. Majority of the cases (53.2%) consumed alcohol in the range of 60 – 79g/day. The mean duration of alcohol consumption was 10.04 ± 5.69 years. The average duration of alcohol intake in those with fatty liver, hepatitis and cirrhosis in this study was 7.7, 9.5 and 18.34 years respectively.

The prevalence of Alcoholic liver disease was 83.7% (n= 310). more than half (55.57%) had fatty liver changes on ultrasonography with normal liver function. 19.45% cases were found to have evidence of alcoholic hepatitis. Features of cirrhosis was seen in 8.64% of the total cases. However, 60 cases (16.2%) with significant alcohol consumption had no evidence of liver disease.

The commonest presentation was nausea (51.89%), abdominal pain (30.5%) and tremulousness (27.56%). Among the different spectrums of ALD, the most common presentation in patients with fatty liver were nausea (46.1%), tremulousness (29.6%) vomiting (22%) and pain abdomen (16.9%). Among the patients with alcoholic hepatitis, pain abdomen (81.9%), nausea (68%) and jaundice (50%) were common presentations.

The commonest finding in patients with fatty liver was hepatomegaly (26%). In cases of Alcoholic hepatitis, hepatomegaly (91.6%) and Icterus (50%) were more commonly seen. Among those with cirrhosis, the commonest clinical findings were ascites (84.37%), icterus (78.125%), splenomegaly (56.25%) and pallor (56.25%). Signs of decompensated liver disease like loss of body hair (2.9%), gynaecomastia (1.9%), spider nevi (1.61%) and Dupuytrens contracture (1.29%) were noted.

In patients of cirrhosis, the most common decompensation was ascites (84.37%) followed by of encephalopathy (18.75%) and variceal bleed (15.6%).

The mean haemoglobin level was 12.41 ± 2.32 g%.The mean value of MCV was 91.85 ± 11.74 fl. The MCV was > 98 fl in 29.67% cases of ALD with 52.77% seen in alcoholic hepatitis followed by 25 % in cirrhosis and 22.33% seen in fatty liver. The mean platelet count was

203694.59± 91340.52/cu. mm and 32.9% patients had platelet count <1,50,000/cu.mm. The mean AST level was 60.45± 48.94U/L. The mean AST in those with hepatitis was 142.97 U/L and in cirrhosis cases was 39.9 U/L. AST was raised more than or equal to 2 times the upper normal limit in 24.51% cases. The mean ALT level was 50.02 ± 41.81 U/L. ALT was raised more than or equal to 2 times the upper normal limit in 2.258% of cases. The mean AST/ALT ratio was 1.27 ± 0.62. AST/ALT was ≥ 2 was found in 17 % cases. The mean serum ALP was 100.22 ± 64.94 U/L. Mean serum total bilirubin was 2.4 ± 4.8 mg/dL. Average serum albumin was 3.5± 0.65 gm/dL. The average serum GGT was 181.82 ± 245.79 IU/L.

Average prothrombin time was 14.69± 2.97 sec with an average INR of 1.23 ± 0.33. PT prolongation was seen in 10.32% of all cases with prolongation in 90.62% cases in cirrhosis patients.

Ultrasonography of whole abdomen showed fatty liver in 70.27% cases, hepatomegaly in 52.43% cases and coarse echotexture suggestive of cirrhosis of liver in 8.64%. Splenomegaly was noted in 11.89% cases out of which a large proportion was seen in those with cirrhosis accounting for 75%. Portal vein diameter ≥ 13mm were seen in 7.5% cases and portal HTN was documented in 4.8% cases. These portal hypertensive features were only noted in 32 cases of cirrhosis. Hepatomegaly was found to have a significant negative correlation with quantity of alcohol consumed. Whereas splenomegaly and increased portal vein diameter showed a significant positive correlation with amount of alcohol consumed. A statistically significant positive correlation was also found to exist between duration of alcohol consumption and raised portal vein diameter.

Among the 32 cases of cirrhosis in which UGI endoscopy was done, 46.87% of cases had oesophageal varices, 21.87% cases had PHG with evidence of Portal HTN seen in 56.25% cases of cirrhosis. CDFI splenoportal axis showed that 53.125% cases of cirrhosis had collaterals.

Mean Discriminant function was 18.86 with DF > 32 in 11.61 % cases. Out of the 32 patients with cirrhosis, 7 cases have Child pugh A (21.8%), 16 cases have B (50%) and 9 cases have Child Pugh C (28.12%). Mean MELD score among these patients were 17.3 with 34.375% patients having MELD score of 10 – 19, 59.37% with score of 20 -29 and 6.25% with a score of 30 – 39.

Both Child Pugh score and Maddreys DF showed a statistical significant positive correlation with increasing amount of alcohol consumption. Child pugh score significantly increased with duration of alcohol consumption.

DISCUSSION

A total of 370 patients of ADS were included in the study. All the study participants were male 100% (n = 370). In India, majority of female population do not indulge in alcoholism to a level to cause ADS due its cultural, traditional and social implications. This is in agreement with studies conducted by Sarin et al [ii], Majethia et al[iii] and Baijal et al[iv], males accounted for majority of cases. Singh et al study in central India, the male to female ratio was 37:1. Also, the study by Sarin et al was conducted in 1988 where alcoholism in females were rare.

The mean age in our study was 40.45 ± 8.83 years. figures in Chacko and Chacko et al[v] study (48±11 years) and Sarin et al study[vi] (43±8.7 years) were comparable to this study. Development of cirrhosis with the amount and duration of alcohol consumption is well established, studies have shown variable results with the type of alcohol consumed. In a prospective cohort study on alcohol drinking pattern and development of cirrhosis conducted by Askgaard G et al. in a Danish population, found that the risk of development of cirrhosis is low in wine consumers as compared to other liquor but the role of pattern of alcohol intake in the development of ALD was not conclusive. [vii]

Majority of the cases (53.2%) consumed alcohol in the range of 60 – 79g/day. The mean duration of alcohol consumption was 10.04 ± 5.69 years and majority of them (43%) consumed for a duration of 6 – 10 year. This result was consistent with the earlier population based studies, which documented a duration of 10-12 years of significant alcohol intake for developing the risk of liver disease [viii]. The average duration of alcohol intake in those with fatty liver, hepatitis and cirrhosis in this study was 7.7, 9.5 and 18.34 years respectively and showed a positive correlation with development of ALD where the risk of developing cirrhosis increased with increasing duration of alcohol consumption. Since most of the study participants were taking both foreign as well as country-made liquors, the effect of type of alcohol could not be assessed in this study.

The prevalence of Alcoholic liver disease was 83.7% cases (n= 310). Among the cases of alcoholic liver disease, more than half (55.57%) had fatty liver changes on ultrasonography with normal liver function. 19.45% cases were found to have evidence of alcoholic hepatitis. Feature of liver cirrhosis was seen in 8.64%. However, 60 cases (16.2%) with significant alcohol consumption had no evidence of liver disease. This findings can be compared to an epidemiological study conducted where a prevalence of 90 to 100% steatosis, 10 to 35% Alcoholic Hepatitis and 8 to 20% Alcoholic cirrhosis were found.[ix] One study also defined that the point prevalence of cirrhosis in those who take 30 – 60g/day alcohol was 1% and up to 5.7% in those who consumed 120g/day.[x] A Biopsy proven prevalence of 20% Alcoholic hepatitis have also been reported and is comparable to our study.[xi]

The commonest presentation was nausea (51.89%), abdominal pain (30.5%) and tremulousness (27.56%). Sarin et al and Maskey et al[xii] reported almost similar results in their study and can be comparable to this study.

Among the different spectrums of ALD, the most common presentation in patients with fatty liver were nausea (46.1%), tremulousness (29.6%) vomiting (22%) and pain abdomen (16.9%). Since, majority of cases of fatty liver had alcohol intoxication and withdrawal features at presentation, these symptoms can be explained and attributed for it. Among the patients with alcoholic hepatitis, pain abdomen (81.9%), nausea (68%) and jaundice (50%) were common presentations. In cirrhotics, abdominal distension (84.37%), jaundice (78%) and pedal edema (56.25%) were seen. This was because the commonest decompensation in cirrhosis is ascites.

Clinically, the commonest findings were hepatomegaly (36.48%) and parotidomegaly (19.7%). Hepatomegaly was comparable with the finding of Suthar H et al (50%). Palpable splenomegaly was seen in 7.02% cases. In a study conducted by Umbon et al, palpable hepatomegaly was present in 44.20% and palpable splenomegaly was present in 36.96% cases. The lower prevalence of splenomegaly in this study can be due to much lesser cases of cirrhosis as compared to fatty liver and hepatitis. Signs of decompensated liver disease like loss of body hair (2.9%), gynaecomasia (1.9%), spider nevi (1.61%) and Dupuytrens contracture (1.29%) were noted.

In patients of cirrhosis, the most common decompensation was ascites (84.37%) followed by jaundice (78.125%) which was comparable but slightly higher than Bell H et al study (67%) [xiii] and Mandenhall et al (50.9%) [xiv]. Other decompensations in the form of encephalopathy (18.75%) and variceal bleed (15.6%) were also noted. Similar results were also reported by Samada et al[l], Maskey et al and Battacharya et al[xvi].

CONCLUSION

The prevalence of Alcoholic liver disease in ADS is very common, constituting 56% Fatty liver, 19% Alcoholic hepatitis, 9% cirrhosis and 16% had no evidence of liver disease. Majority of the cases (54.1%) belonged to age group of 31 to 40 years, young and middle age population which are active and most productive. Evaluating patients of alcohol dependence syndrome for hepatic disease is essential for the early identification and starting mitigating therapy early for these patients.

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