CHAPTER

70

Alcoholic Hepatitis in India: Current Prospective and Management

Suresh Kumar

INTRODUCTION

Alcohol is the world third largest risk factor for disease burden. Consumption of alcohol results in 2.5 million deaths each year.[1] Alcoholic hepatitis is an acute inflammation of the liver, accompanied by the destruction of individual liver cells and scarring. Symptoms may include fever, jaundice, an increased white blood cell count, an enlarged, tender liver, and spider-like veins in the skin.[2] It may develop due to large amount of alcohol for a long period and the outcome may range from abnormal liver functions with no symptoms to hepatic encephalopathy.[3]

The World Health Organization (WHO) estimates that 140 million people worldwide suffer from alcohol dependency, causing damage to lives and economies. In India, 15 people die every day – or one every 96 minutes – from the effects of drinking alcohol, reveals by an India Spend analysis of 2013 National Crime Records Bureau (NCRB) data. The per capita consumption of alcohol in India increased 38 percent. According to WHO data published in 2014 the total pure alcohol consumption among persons (age 15+) in liters per capita per year is 4.4 out of which 2.2 liters per capita per year is recorded consumptiion of alcohol where 2.2 liters per capita per year is unrecorded consumption. Mortality from alcoholic cirrhosis is declining in western nations but it is increasing in India.[1]

EPIDEMIOLOGY

Incidence is unknown in India but prevalence varies among different states.

Table 1: Laboratory diagnosis of alcoholic hepatitis

Test	Comment
AST	Increased two to sevenfold, <400 IU/L, > ALT
ALT	Increased two to sevenfold, <400 IU/L
AST/ALT	Usually > 1
GGTP	Not specific to alcohol, easily inducible, elevated in all forms of fatty liver
Billirubin	May be markedly increased in alcoholic hepatitis despite modest elevation in alkaline phosphatase
ALP	Mildly elevated

ALT, Alanine aminotransferase, AST, Aspartate aminotransferase; GGTP, γ Glutamyl transpeptidase; ALP, Alkaline phosphatase

Global status report on alcohol and health 2014 was released by WHO for India, Around 30% of total adult population consumes alcohol. 93% of alcohol consumes in the form of spirit. 7% in the form of beer and ≤1% in the form of wine.

Highest alcohol consumption were found in Kerala (8 ltrs per annum) followed by Maharasthra and Punjab. 11% adult population in India indulged in heavy drinking or binge drinking.

ETIOLOGY AND PATHOPHYSIOLOGY

Quantity, gender, underlying viral hepatitis, genetics and obesity are the major etiological risk factors for the development of Alcoholic hepatitis.

After alcohol consumption, it is mainly metabolised within hepatic parenchyma and also in GI tract. Alcohol is converted to acetaldehyde inside the liver cells by the enzyme alcohol dehydrogenase and cytochrome p450 (CYP2E1).

CLINICAL FEATURES

Presentation of Acute alcoholic hepatitis varies considerably. Some patients may presents with nonspecific symptoms like nausea, vomiting, diarrhoea, abdominal pain or discomfort. ALD may be found when the patient comes for alcohol related problems of other organs, i.e. pancreas, heart, brain and peripheral nerves, etc.

Patients with Fatty liver (Steatosis) are usually well and asymptomatic or have nonspecific symptoms. Liver may be enlarged but non tender. Features of chronic liver disease are absent liver enzymes may be mildly raised.[4]

The patient may look quite well with nonspecific symptoms or very ill, malnourished with specific features of hepatic insufficiency or encephalopathy. Physical signs include enlarged tender liver, jaundice, ascitis pyrexia, spider angioma or signs of encephalopathy. Blood results may show anemia, leukocytosis, high bilirubin and enzymes, prolonged prothombin time and low albumin. They are prone to have infections.[4]

LABORATORY DIAGNOSIS (TABLE 1)

The diagnosis is based on a thorough history, physical examination, and investigation. History with for a reliable account of prolonged alcohol abuse, it is important to gain the trust of the patient. Often the collateral history from spouse, family members, and friends is useful. For

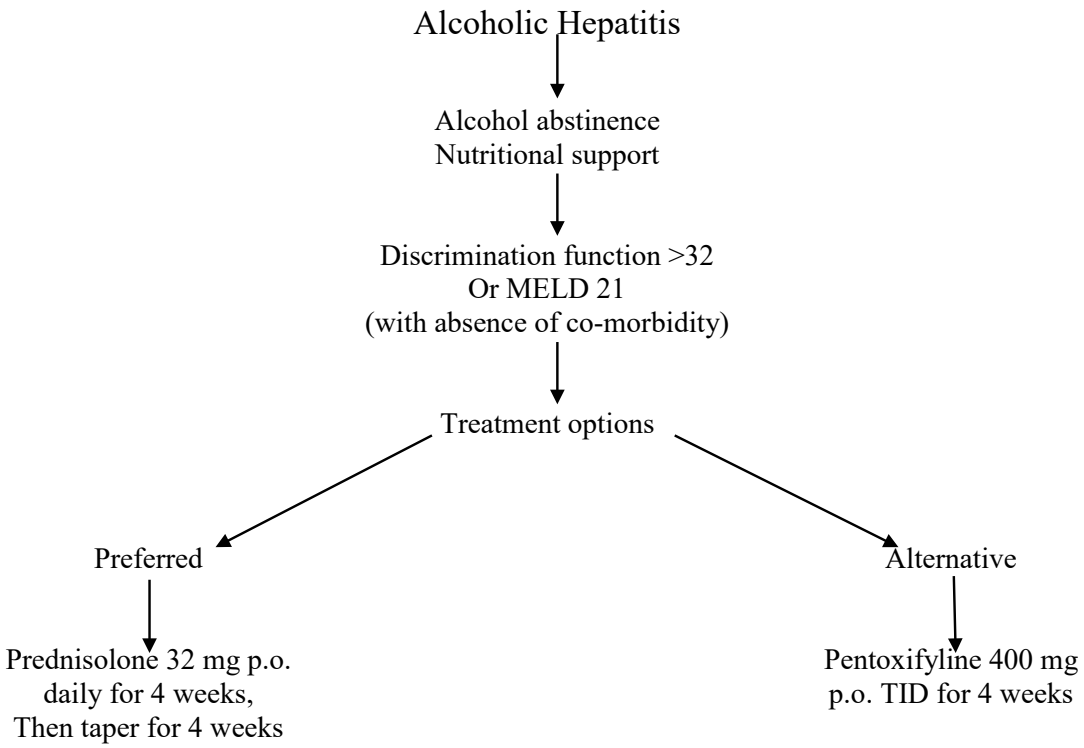

Fig. 1: Treatment Algorithm for alcoholic hepatitis

assessment, various question formats, i.e. CAGE test, are helpful.

PROGNOSTIC SCORES

In clinical practice various scores are used to predict out come of alcoholic hepatitis. The single most reliable indicator of severity is the presence of hepatic encephalopathy.

Discriminant Function (DF) Score

The DF of Maddrey and coworkers is based on PT and billirubin levels and it is calculated as follows: DF= (4.6 × PT prolongation) + total serum billirubin in mg/dL.

MELD Score

Several retrospective studies have shown that the MELD score is useful in predicting 30- and 90-day mortality in patients with alcoholic hepatitis. Moreover, the MELD score seems to contain some practical and statistical advantages over Maddrey's DF in predicting mortality among these patients. In a cohort of 73 patients with alcoholic hepatitis at the Mayo Clinic, the MELD score was the only independent predictor of mortality [5]. Likewise, in another much larger retrospective study of 202 patients with alcoholic hepatitis, the MELD score was found superior to not only Maddrey's DF but also to the classical Child-Turcotte-Pugh (CTP) score.[6]

Glasgow Alcoholic Hepatitis score (GAHS)

The GAHS is one of the most recently described predictors of outcome in patients with alcoholic hepatitis. This scoring system uses 5 different variables, including age, bilirubin level, blood urea nitrogen (BUN) level, PT, and WBC count. The overall accuracy of GAHS, which was validated in 195 patients with alcoholic hepatitis, was 81%, when predicting 28-day outcome.[7] In contrast, the modified DF had an overall accuracy of only 50%.[7]

Asymmetric Dimethylarginine (ADMA) Score

The ADMA score is the most recently proposed predictor of adverse clinical outcome in patients with severe alcoholic hepatitis. In a small prospective study of 27 patients with alcoholic hepatitis, the ADMA score was a better predictor of outcome than the CTP score, the DF, or the MELD scores.[8]

Other factors that correlate with poor prognosis include older age, impaired renal function, encephalopathy, and a rise in the WBC count in the first 2 weeks of hospitalization.

Significantly raised serum γ-glutamyltransferase (γ - GT) and Mean Corpuscular Volume (MCV) are most important and valuable for detection of alcohol excess. However, moderate rise of γ -GT may be found in nonalcoholic fatty liver drugs like phenetoin causing enzyme induction.

Liver function tests – Elevated Serum transaminase level ALT and AST are not specific. These are mildly raised in fatty liver. Characteristically, the AST: ALT ratio is about 2:1, and the absolute value of the ALT does not exceed 300 U/L unless a superimposed hepatic insult exists, such as paracetamol toxicity. If raised 5 times of normalreference range, other diagnoses such as viral or autoimmune hepatitis should be considered.[10]

HISTOLOGICAL FINDINGS

Liver biopsy is not routinely necessary to diagnose liver injury. For fatty liver, biopsy is rarely required and may be useful in excluding steatohepatitis or fibrosis. Inflammation and necrosis occurs, most prominently in the centrilobular area of hepatic acinus. Ballooning of

hepatocytes is classical. They compress sinusoids and lead to portal hypertension which is reversible.[9]

CONCLUSION

Upto 40% patients with severe alcoholic hepatitis die within 6 months of onset of clinical syndromes. Alcoholic liver disease and alcoholic hepatitis is increasing in India. Early diagnosis and treatment can prevent development of cirrhosis and decompensation. Abstinence is the key factor in the mangement of alcoholic hepatitis.

ACKNOWLEDGEMENT

Author acknowledges Dr. Dipu Bharali for typing and ediiting the written part of the chapter.

REFERENCES

1. WHO Global status report on alcohol and health 2014.
2. Casanova J, Bataller R. Alcoholic hepatitis: Prognosis and treatment. *Gastroenterol Hepatol* 2014; 37:262-8.
3. Potts JR, Goubet S, Heneghan MA, Verma S. Determinants of long-term outcome in severe alcoholic hepatitis. *Aliment Pharmacol Ther* 2013; 38:584-95.
4. Mihas AA, Doos WG, Spenney JG. Alcoholic hepatitis--a clinical and pathological study of 142 cases. *J Chronic Dis* 1978; 31:461-72.
5. Dunn W, Jamil LH, Brown LS, Wiesner RH, Kim WR, Menon KV, et al. MELD accurately predicts mortality in patients with alcoholic hepatitis. *Hepatology* 2005; 41:353-8. [Medline].
6. Srikureja W, Kyulo NL, Runyon BA, Hu KQ. MELD score is a better prognostic model than Child- Turcotte-Pugh score or discriminant function score in patients with alcoholic hepatitis. *J Hepatol* 2005; 42:700-6. [Medline].
7. Forrest EH, Evans CD, Stewart S, et al. Analysis of factors predictive of mortality in alcoholic hepatitis and derivation and validation of the Glascow alcoholic hepatitis score. *Gut* 2005; 54:14-5. Medline].
8. Mookerjee RP, Malaki M, Davies NA, et al. Increasing dimethylarginine levels are associated with adverse clinical outcome in severe alcoholic hepatitis. *Hepatology* 2007; 45:62-71.
9. Sarin SK, Malhotra V, Nayyar A, Sundaram KR, Broor SL. Profile of alcoholic liver disease in an Indian hospital. A prospective analysis. *Liver* 1988; 8:132-7. PubMed PMID: 3393062.
10. Nand N, Malhotra P, Dhoot DK. Clinical Profile of Alcoholic Liver Disease in a Tertiary Care Centre and its Correlation withType, Amount and Duration of Alcohol Consumption. *J Assoc Physicians India* 2015; 63:14-20.