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Case Report

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ASSESSING THE OUTCOME OF THE USE OF HEPATOPROTECTIVE AGENT IN THE PATIENT WITH ALCOHOLIC LIVER DISEASE USING LILLE SCORE -A CASE SERIES

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INTRODUCTION

Liver is the largest and complex organ serves more than 500 functions in the human body. The function includes detoxification, energy storage, production of hormones and proteins and regulating cholesterol and blood sugar.[1,2] Liver damage can affect all over the body as it having many functions. Since the liver having the function of detoxification the liver process over 90% of the consumed alcohol, over consumption can leads to extra burden to the liver leading to damage of the liver.[3]

Alcoholic liver disease (ALD) is the term that encompasses liver manifestation due to alcohol consumption including building up of fat, inflammation and scarring of the liver. Repeated excessive alcohol consumption is the major etiology of alcoholic liver disease.[4] Such patients may present with subacute onset of fever, hepatomegaly, leucocytosis, jaundice and coagulopathy.[5] Alcohol is broken down to acetaldehyde in liver, having the potency to produce oxidative stress to the hepatic cells leading to hepatocyte injury.[6] Corticosteroid increases the expression of anti inflammatory genes and reduces the inflammation. Thus it can be considered as the drug of choice for ALD. Multiple molecular mechanisms is the cause of steroid resistance in patient with ALD.[7]

Lille model is a medical tool for predicting mortality in patients with alcoholic hepatitis who are not responding to steroid therapy. Age, serum albumin, serum total bilirubin (initial), bilirubin day 7, serum creatinine and prothrombin time. This model predicts the mortality rates within six months if the lille score is >0.45 predicts a 6 month survival of 25% and this score <0.45 predict a 6 month survival of 85%. This is calculated by using the formula

Lille Model Score= (exp(-R))/(1+exp(-R)

Where R =3.19-0.101*(age in years)+0.147*(albumin day 0 in gram/dl)+0.0165*(evolution in albumin level in µmol/l)-0.206*(renal insufficiency)-0.0065*(bilirubin day 0 in µmol/l)-0.0096*(PT in seconds).

Renal insufficiency = 1(if Cr>1.3 mg/dL) Or 0 (if Cr≤1.3 mg/dL[8,9]

CASE DETAILS

The mean age of our patient was 58.33 years (45-65 years) and all were males. The etiology for liver disease is found to be chronic consumption of alcohol for more than 10 years. These patients were reported with respiratory infection or inflammation as co morbidities.

Case one of age 45 years presented on hospital with cough with expectoration, excess sweat. He has a habit of smoking 10-12 beedies/day, using alcohol, chewing tobacco for past 25 years. Patient's chest X-ray reported with emphysema and bending of diaphragm. Physical examination revels hepatomegaly which implies liver damage.

Second case of age 45 years reported with abdominal pain, vomiting (bile colored), loss of weight (49kg), fever and palpitation. General examination the patient was showing the presence of jaundice, abdomen was found to be disturbed, flank free hernia. Hepatomegaly and mild ascites reported on ultrasound scanning. On chest X-ray midzone pneumonitis and bending of diaphragm was present.

Third patient of age 65 years complained with pain on both leg, yellowish discoloration of sclera, fever, blurred vision of eye and mild hepatomegaly. Chest X-ray reported with increased BVM (Broncho Vascular Marking). USG of abdomen suggest Liver parenchymal disease.

All the three patients admitted to our hospital after treating with steroids in another hospital.

Table 1: The clinical features, laboratory parameters and radiological findings are summarized in.

	Case 1	Case 2	Case 3
Etiology for liver abnormalities.	Alcohol consumption.	Alcohol consumption.	Alcohol consumption.
Duration of alcohol consumption.	Past 25 years.	Past 10 years.	Past 50 years.
Co-morbidities present	Emphysema	Iron Deficiency Anaemia	Alkaline gastritis, lung inflammation.
Liver function test			
S. Total protein (6-8 g/dl)	6.3g/dl	6.2g/dl	6.7g/dl
S. Total albumin (3.8-5 g/dl)	3.9g/dl	3.2g/dl	3.4g/dl
S. Total globulin (2.3-3.5 g/dl)	2.40g/dl	2.40g/dl	1.90 g/dl ↓
S. Total bilirubin (<1.0mg/dl)	1.8mg/dl ↑	7.8mg/dl ↑	6.0mg/dl ↑
S. Direct bilirubin (0.1-1.0mg/dl)	-	4.4mg/dl ↑	2.4mg/dl ↑
S. Indirect bilirubin (0.2-0.7mg/dl)	-	3.40gm/dl	3.6gm/dl
SGOT (<37IU/L)	120 IU/L ↑	120 IU/L ↑	139 IU/L ↑
SGPT (<40IU/L)	82 IU/L ↑	30 IU/L	46 IU/L ↑
Alkaline phosphatase (60-280IU/L)	192 IU/L	120 IU/L	341 IU/L ↑

The treatment given for the first patient Inj.Cefotaxim 1g, Inj. Pantoprazole 40mg, Inj. Styptochrome, Inj. Ondansetron, Inj. Etofylline + Theophylline 2ml (84.7+25.3) and Syp. Liv52 10ml.

The treatment given for second patients include Inj. DNS, 5% D and Thamine, Inj. Ondansetron 2mg, Inj.Cefotaxim 1g, Inj.Pantoprazole 40mg, Syp.Silymarin 10ml, Inj Furosemide 10mg, Cap.B complex, Tab.Chlordiazepoxide 10mg, Tab.Propanolol 10 mg, Tab.Penoxifylline 400mg, Cap.Essential phospholipid.

The treatment given for the third patient includes Inj. Cefotaxim 1g, Inj.Pantoprazole 40mg, Syp.Liv52 10ml, Tab. Torzemide 10mg, Cap.B complex, Tab. Chlordiazepoxide 10mg Tab. Propanolol 10mg, Tab. Pentoxifylline 400mg, Cap. Essential phospholipid**.**

Table 2: The parameters for calculating Lille score.

Parameters	Case 1	Case 2	Case 3
Age	45	45	65
Albumin	3.9 gm/dl	3.2 gm/dl	3.4 gm/dl
Bilirubin (initial)	1.8 gm/dl	7.8 gm/dl	6.0 gm/dl
Bilirubin (day 7)	0.9 mg/dl	1.8 mg/dl	0.9 mg/dl
Creatinine	0.7mg/dl	0.7mg/dl	0.7mg/dl
PT	10	11.5	9.5
Lille score	0.013	0.017	0.091

At the time of discharge the patients showed marked improvement in the liver function. That is around 50% reduction of SGOT and around 72% reduction in SGPT levels for all patients. All patients discharged with advice of silymarin, liv52, nutritional supplements, and one with penitoxifylline.

DISCUSSION

Alcoholic liver disease is a group of disease characterized by fatty liver, cirrhosis and portal hypertension cause due to the over-consumption of alcohol. The management of alcoholic liver disease include abstinence of alcohol along with nutritional supplements include folate and thiamine. Patients with alcoholic cirrhosis should take frequent interval feedings which includes a nighttime snack and morning feeding this help to improve nitrogen balance. Patient with sever alcoholic hepatitis may benefit occur short term form of specific therapies directed towards regeneration and suppressing inflammation.

Liv 52 is a potent hepatoprotective agent having antiperoxidative action. This activity is responsible for the prevention of loss of functional cell membrane, maintaining cytochrome P_{450} which fasten the recovery and ensure early restore. It also facilitates rapid elimination of acetaldehyde and ensure the protection from alcohol. The content p-methoxy benzoic acid can act as a liver protectant.[10]

The one of the unique flavanoid complex derived from milk thistle plant is silymarin constitutes silybin, silydianin, and silychrisin. These flavanoids are useful for the regeneration of hepatic cell which are damaged due to the drug or alcohol. It works as an antioxidant. Silymarin is a scavenger for free radical that can damage cell exposed to toxins. Silymarin having the ability to increases the amount of glutathione in liver which is responsible for detoxification there by it can increase the detoxification capacity of liver. Fluvio *et al.*, conducted a study on 2013 observed that silymarin appear to be effective to reduce biochemical, inflammatory and ultrasonic indices of hepatic steatosis.[11]

The essential phospholipids can help the cells to restore by act as an anti inflammatory, anti oxidant, anti fibrinogenic anti apoptotic membrane protective and lipid regulating effect. These essential lipids are available in the form of capsule which found to have hepatoprotective effect on the liver. It can able to normalize the metabolism of lipid and protein. This will enhances the detoxification process by the hepatic cell. L Padma *et al.*, was conducted 2013 conclude that Essentiale-L is safe and effective in patient with both

alcoholic fatty acid liver disease and non alcoholic fatty acid liver disease.[12]

The patients who all are not able to tolerate glucocorticoid pentoxifylline is the one of drug of choice. It will increase the oxygenation of ischemic tissue by increasing the breakdown of cAMP and cGMP. Hanan Fatima *et al.*, a study in 2018 conclude that pentoxifylline is considered to be a alternative choice to glucocorticoid in patient with hepatic disease.[13]

All the three patients were showed a marked improvement which is expressed through Lille score <0.45 which predict a 6 month survival of 85%.

CONCLUSION

The case series conclude that the use of hepatoprotective agents in the patient with alcoholic liver disease can reduces the mortality which is assessed by Lille score. A randomized control study is warranted.

KEYWORDS: Alcoholic liver disease, hepatoprotectant, Lille score.

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