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Evaluation of Serum Markers in Cirrhosis of Liver and Alcoholic Liver Disease

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Abstract
Liver disease is a general term for any damage that reduces the functioning of the liver. As a large organ, the liver shares with many other organs the ability to perform its functions with extensive reserve capacity.
Aim: *aim of the study was study of serum markers in cirrhosis of liver and alcoholic liver disease.*
Materials and Methods: *The present study was done in the department of General Medicine at Rajiv Gandhi Institute of Medical Sciences, Kadapa, Andhra Pradesh, India. The present study was carried out on total 150 subjects aged between 35-60 years. Subjects were divided into three groups. 50 subjects were cirrhosis of liver and 50 were alcoholic liver disease. Control group which consist of 50 subjects who had no complain and history of liver disease.*
Results and Discussion: *The various enzymatic parameters included in LFT'S are Serum Bilirubin, SGOT, SGPT, GGT & ALP. These are useful to diagnose various liver diseases from the present study it is observed that in alcoholic Liver Disease shows a highest rise in Gama glutamyl transferase, high levels of GGT lives are the markers in the diagnosis of alcoholic liver disease. In cirrhosis of liver SGOT and SGPT levels are high these shows that these are the marker enzyme for cirrhosis of liver.*
Conclusion: *Further study is require for the diagnosis of markers in liver disease*
Keywords: *Cirrhosis of liver, Alcoholic liver disease, SGOT,SGP,ALP.*

Introduction

The incidence of traumatic liver injury in 1996 and 1997 was 2.95/100 000 annually. Seventy seven autopsies with liver injuries revealed injury pattern of grade I in 6 cases (8%), grade II in 10 cases (13%), grade III in 21 cases (27%), grade IV in 15 cases (19%), grade V in 16 cases (21%) and grade VI in 9 cases (12%)[1-2]. Twenty four patients revealed injury pattern of grade II in 13 cases (46%), grade III in 4 cases (14%), grade IV in 5 cases (18%) and grade V in 2 cases (7%)[3].

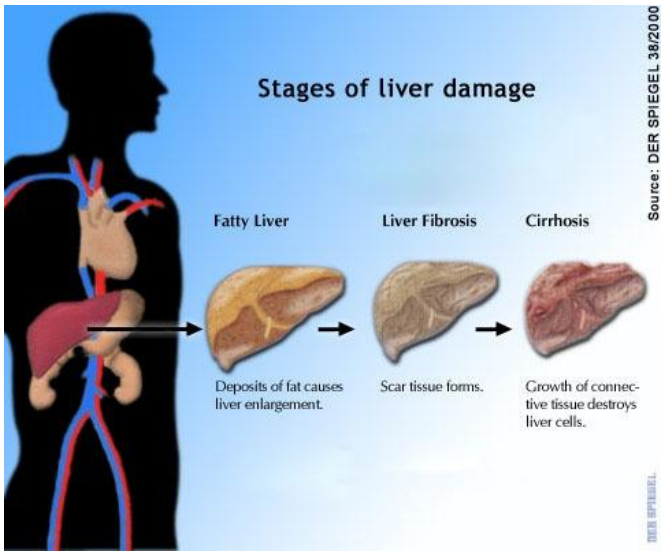
The liver is a large, solid gland situated in the right upper quadrent of the abdominal cavity. in the living subjects, the liver is reddish brown in

colour, soft in consistency, and very friable. It weights about 1600g in males and about 1300g in females[4-7]. Liver disease is a general term for any damage that reduces the functioning of the liver. As a large organ, the liver shares with many other organs the ability to perform its functions with extensive reserve capacity[8].

In many cases, individuals with liver disease maintain normal function despite extensive liver damage. In such cases, liver disease may only be recognized by using tests that detect injury. Most commonly this is accomplished by measurement of plasma activities of enzymes found within liver cells released in some what specific patterns with different forms of injury.

Cirrhosis of Liver

Hepatic cirrhosis can occur at any age & often cases prolonged morbidity, it frequently manifests itself in younger adults & is an important cause of premature death.



Cirrhosis & chronic liver disease were 10th leading cause of death for men & the 12th for women in the United States in 2001, killing about 27,000 people each year (21). Also the cost of cirrhosis in terms of human suffering hospital costs, & lost productivity is high. Causes for cirrhosis of liver are alcohol, nonalcoholic fatty liver, chronic viral hepatitis [9-10].

Complications

As the disease progresses, complications may develop in some people there may be first signs of the disease.

- Bruising & bleeding due to decreased production of coagulation factors.
- Jaundice due to decreased. processing of bilirubin.
- Itching (pruritis) due to bile salts products deposited in the skin.
- Hepatic encephalopathy.
- Sensitivity to medication due to decreased metabolism of the active compounds [10].

Alcoholic Liver Disease

Alcoholic liver disease is the major cause of liver disease in western countries. When alcohol is consumed for a long time, it eventually results in scarring (or) what is known as cirrhosis (or) end stage alcoholic liver disease.

Alcohol consumption is steadily increasing among the Indian population especially among the younger generation. Excessive drinking can lead to liver damage, involve other organs & could even be fatal [11-13].

The risk of alcoholic liver disease is variable and not everyone who drinks heavily will develop liver disease only 10% of alcoholics have evidence of cirrhosis at post mortem. Alcoholic liver disease does not occur below a threshold of 21 units/week in women & 28 units/week in men. Although the average alcohol consumption of an individual with cirrhosis is 160 g/day for an average of 8 years, there is no linear relationship between dose and liver damage [13].

Risk factors: Drinking patterns, Gender, Genetics, Nutrition.

The liver is often enlarged in alcoholic liver disease, even in the presence of cirrhosis, peripheral stigmata of chronic liver disease, including Dupyptren's contractures and palmar erythema, are more common in alcoholic cirrhosis than cirrhosis of other etiologies.

Elevation of serum liver enzymes

Enzymes Reference Value Disease in which increased

1) Alanine transaminase 3-40 Iu/L (or) Acute hepatitis (viral (or) (ALT) (or) SGPT toxic), 40-250 n kat jaundice, cirrhosis of liver. Alcoholic liver disease

2) Aspartate transaminase 4-45 Iu/L (or) Myocardial infarction (AST) (or) SGOT infection, 50-320 n kat liver cancer, cirrhosis of liver, Alcoholic liver disease

3) Alkaline Phosphatase adults 25-80Iu/L obstructive jaundice (ALP) (cholistasis) children 25- 12Iu/L infective hepatitis, liver cirrhosis.

4).Gamma glutamyl transferage Alcoholic liver disease [11-14].

Materials and Methods

The present study was done in the department of General Medicine at Rajiv Gandhi Institute of Medical Sciences, Kadapa, Andhra Pradesh, India. The present study was carried out on total 150 subjects aged between 35-60 years. Subjects were divided into three groups. 50 subjects were cirrhosis of liver and 50 were alcoholic liver disease. Control group which consist of 50 subjects who had no complain and history of liver disease.

Informed consent was taken from both cases and controls and the study was approved by the institutional ethical and research committee. A detailed proforma was filled up for each patient which included age, sex, past history of coronary artery disease, cerebrovascular accident, history of hypertension.

Blood samples were collected, analyzed. Blood was collected in plain tubes for serum, the samples were separated by centrifugation & serum was used for the estimation of SGOT, SGPT,ALP & Bilirubin and Gamma glutamyl transferage.

Statistical analysis: The results obtained and expressed in mean ± SD. The comparison was done by student t test and statistical analysis of each parameter was done by SPSS statistical package version 15.0. p value < 0.05 was considered statistically significant.

Results

The present study was carried out on total 150 subjects aged between 35-60 years. Subjects were divided into three groups. 50 subjects were cirrhosis of liver and 50 were alcoholic liver disease. Control group which consist of 50 subjects who had no complain and history of liver disease.

Statistical Analysis of Liver Enzymes in Various Liver Disease

PARAMETERS	CIRRHOSIS OF LIVER	ALCOHOLIC LIVER DISEASE	CONTROLS	P.Value
BILIRUBIN				
MEAN	5.05	6.8	0.9	<0.005
SD	1.5	1.2	o.3	
SGOT				
MEAN	333.8	392	45	<0.001
SD	80.3	69	12	
SGPT				
MEAN	362.8	409	43	<0.005
SD	72.9	45	14	
ALP				
MEAN	330.6	377.5	85	<0.001
SD	74.9	60.2	23	
GGT				
MEAN	250	432	52	<0.005
SD	56	84	15	

Discussion

The present study involves estimation of parameters relating to inflammatory process, defence mechanism of the individual and also the products for damage caused to the cells in liver diseases. The estimated parameters or enzymes Bilirubin, SGOT, SGPT & ALP AND Gama glutamyl transferase related to hepatocellular damage.

The liver function lists are the biochemical investigations to assess the capacity of the liver to carry out any of the function it performs. LFT'S are simple, easy biochemical investigations which help to detect the abnormalities & the extent of liver damage.

The various enzymatic parameters included in LFT'S are Serum Bilirubin, SGOT, SGPT, GGT & ALP. These are useful to diagnose various liver diseases from the present study it is observed that in alcoholic Liver Disease shows a highest rise in Gama glutamyl transferase, high levels of GGT lives are the markers in the diagnosis of alcoholic liver disease. In cirrhosis of liver SGOT and SGPT levels are high these shows that these are the marker enzyme for cirrhosis of liver.

Estimation of these parameters is a guide for assessment of severity of the damage to the liver as also a good prognostic value. Irrespective of the ethiology of liver estimation of these parameters substantially provides complete picture of liver disease.

Conclusion

The present study it is observed that in alcoholic Liver Disease shows a highest rise in Gama glutamyl transferase and ALP levels, high levels of GGT lives are the markers in the diagnosis of alcoholic liver disease. In cirrhosis of liver SGOT and SGPT levels are high these shows that these are the marker enzyme for cirrhosis of liver. Most of the liver diseases are asymptomatic. A simple and easy LFT can early diagnose a disease in a single visit of a patient, and conformed with ultrasonography. Thus, early diagnosis, treatment can halt the progression of liver diseases, modifiable risk factors like alcohol can be withdrawn by life style modifications. As the study is done the rural community, around kadapa most of the patients are found to be with jaundice at later stages. The reason was thought to be because of illiteracy, ignorance & unawareness of the severity of the disease. For this reason it is very important to bring an awareness among the rural society about the importance of alcohol abuse, drug abuse, malnutrition, hepatitis & vaccination to children.

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