

EVALUATION OF LIPID PROFILE IN PATIENTS WITH CHRONIC HEPATITIS C

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Results: Total 150 patients were included. Mean age +SD was 46.35 + 2.5 (ranged 20 to 65 years). The majority of individuals 141(94.0%) demonstrate reduced levels of serum triglycerides. Low level of cholesterol was observed in 20 individuals, Levels were Low to normal in 127 persons. Hypercholesterolemia was revealed in 3 individuals i.e. 3 (2.0%). Total cholesterol, triglycerides, High Density Lipoprotein and Low Density Lipoprotein levels were less in majority of the cases. A few patients showed hyperlipidemia and some patients had normal lipid profile. It demonstrates that disturbed blood lipid pattern is a universal and frequent outcome in persons having from hepatitis C for prolonged period.

Conclusion: Disturbed lipid profile is a usual outcome in chronic hepatitis C. Blood Lipid

Abstract

Objective: To evaluate the lipid profile amongst individuals having chronic hepatitis C.

Patients and Methods: This Hospital based observational study was done in the Medical wards, Indus Medical College Hospital, Tando Muhammad Khan during six months period(March 2017 to September 2017) and individuals having chronic hepatitis C were enrolled inside this research study. Fasting lipid profile sampling was taken from every single one individuals having chronic hepatitis C.

levels should be checked in all persons suffering from chronic hepatitis C.

Key words: Lipid profile, Triglycerides, Low Density Lipoprotein-c, Dyslipidemia

INTRODUCTION:

Hepatitis C virus infection is a wellbeing matter of great importance. Chronic hepatitis C is complicated by hepatic cirrhosis and post cirrhotic hepatocellular carcinoma in different nations of the world, approximately 500 000 new cases of hepatocellular carcinoma are reported annually, among them 22% are due to Hepatitis C Virus infection (World Health Organization, 1996). Several research studies have demonstrated that majority of individuals of acute hepatitis C become unremitting infections; 10-20% of these will build up

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complications of chronic hepatic illness such as hepatic cirrhosis ahead and few individuals will develop hepatocellular carcinoma.¹

It is practical to contemplate a disturbed blood lipid levels in persons with chronic hepatic illness due to hepatitis C because important cellular functions and homeostasis are controlled by lipids and liver has a vital part in lipid metabolism. There is decrease in triglyceride and cholesterol levels in persons with severe hepatitis and liver failure due to decrease biosynthesis of lipoprotein. Due to decreased hepatic biosynthesis capability, low levels of cholesterol and triglyceride are typically identified in continual chronic hepatic illnesses.²

Chronic hepatic illnesses due to different etiologies are generally related with affecting declines in cholesterol and triglyceride level due to reduced lipoprotein synthetic capacity. Cholestasis is linked with high cholesterol while the above excretory pathway of cholesterol is barren in this illness.³

The apolipoproteins are needed for the construction of lipoproteins. Lipoproteins have a vital part in the absorption of dietary cholesterol, long chain fatty acids and fat soluble vitamins. The transport of triglycerides, cholesterol and fat soluble vitamins from the liver to peripheral tissue and transport of cholesterol from peripheral tissue to liver is by lipoproteins. Apolipoproteins activate enzymes essential in lipoprotein metabolism and to adjust the binding of lipoproteins to cell surface receptors. Liver is the main area of formation and clearance of lipoproteins.⁴

This demonstrates that liver is involved in numerous steps of lipid metabolism and transport. Thus in severe hepatic disease, lipid metabolism is extremely concerned. Dyslipidemia observed in chronic hepatitis C varies from that observed in majority of the other etiologies of secondary dyslipidemias for the reason that circulating lipoproteins are not only found in atypical amount but they also usually

have anomalous composition, electrophoretic mobility and appearance. Pre beta and alpha bands can be missing on electrophoreses in wide range of hepatic diseases.⁵

There is lot of reasearch on Cholestatic hepatic illness . In obstructive hepatic disease cholesterol and phospholipids are noticeable increased. In acute liver disoders such as viral or alcoholic hepatitis, there is a cholestatic phase and analogous alterations may be noticed. elevated cholesterol and phospholipid levels.⁵

Due to decreased hepatic biosynthetic capacity in chronic hepatitis C unusually low levels of cholesterol and tri-glycerides are observed.

This study has been conducted to observe the serum lipid pattern in patients suffering from chronic hepatitis C at Indus Medical College Hospital, Tando Muhammad Khan.

METHODOLOGY: This research study was carried out on 150 patients admitted in Indus Medical College for the period of six months i.e. from March 2017 to September 2017. The patients included were suffering from chronic hepatitis C for more than six months having HCV-RNA positive via PCR and antiviral treatment has not been started. The individuals suffering from affiliated disoders like Diabetes Mellitus, High blood pressure ,chronic kidney problems, thyroid illnesses, alcohol users, hepatitis B virus infected patients, chronic liver disease due to other causes than hepatitis c and patients on lipid lowering drugs were not included in this research study. After complete history taking and thorough physical examination, fasting blood sampling were taken for blood lipid contour and sent to the laboratory. All the relevent data were documented on a pre-designed proforma.

STATISTICAL ANALYSIS: Statistical program SPSS version 18.0. was used for data evaluation. Simple frequencies and percentages were computed for categorical data such as gender, age in years and lipid profile. No statistical test was applied due to descriptive data.

RESULTS: A total 150 patients were enrolled in this research study. Mean age + Standard Deviation was 46.35 + 2.5 (ranged 20 to 65 years). 97 (64.6%) were male and 53 (35.3%) were female patients (Figure 1).

In this research study, most of the patients i.e. 89(59.3%, n = 150) were observed in the age group 41 to 50 years. Majority of the individuals 141(94.0%) show decreased serum triglyceride levels (Table 1).

Low cholesterol levels was observed in 20

patients, 8 were male (8.2%) and 12 were (22.64%) female patients. Low to normal levels were observed in 127 persons. High cholesterol level was seen in 3 individuals i.e. 3 (2.0%). It was noted that Total Cholesterol, triglycerides, High Density Lipoproteins and Low Density Lipoprotein levels were decreased in majority of individuals. Normal levels were observed in few individuals. Some patients showed high lipid levels. It demonstrates that dyslipidemia is frequent outcome in individuals having chronic hepatitis C (Table 2).

Figure 1. Gender Distribution of patients (n = 150)

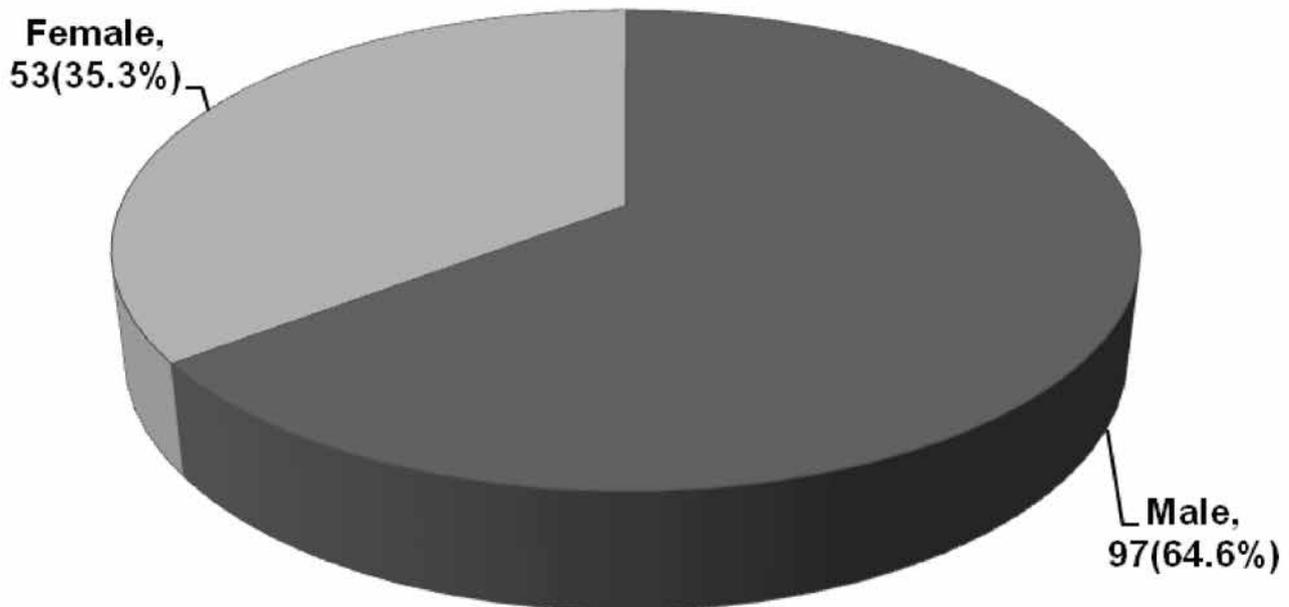


Table 1: Distribution of age in years (n = 150)

Age in Year	Number	Percentage
20-30	11	7.3%
31-40	30	20.0%
41-50	89	59.3%
51-60	15	10.0%
61 and above	05	3.3%

Table 2: Gender Distribution with Serum Lipid Profile (n=150)

Total Cholesterol (mg/dl)	Male n=97	%	Female n=53	%	Total	Percentage
50-100	08	8.2	12	22.6	20	13.3
101-150	80	82.4	38	71.6	118	78.6
151-200	06	6.1	03	5.6	09	6.0
201-250	02	2.0	00	0	02	1.3
251 and above	01	1.0	00	0	01	0.6
Serum Triglycerides (mg/dl)						
50-75	08	8.2	04	7.5	12	8.0
76-100	65	67.0	15	28.3	80	53.3
101-125	14	14.4	24	45.2	38	25.3
126-150	05	5.1	06	11.3	11	7.3
151 and above	05	5.1	04	7.5	09	6.0
. HDL-c (mg/dl)						
20-30	05	5.1	02	3.7	07	4.6
31-40	82	84.5	47	88.6	129	86.0
41-50	10	10.3	04	7.5	14	9.3
51-60	00	0	00	0	0	0
61 and more	00	0	00	0	0	0
LDL-c Levels (mg/dl)						
50-75	7	7.2	18	33.9	25	16.6
76-100	13	13.4	05	9.4	18	12.0
101-125	60	61.8	25	47.1	85	56.6
126-150	11	11.3	03	5.6	14	9.3
151 and above	06	6.1	02	3.7	08	5.3

DISCUSSION: In chronic hepatitis C patients, disturbed lipid profile is frequent observation. Disturbed lipid pattern is also common finding in further diseases similar to diabetes Mellitus and persistent and chronic kidney disease. Several local research studies are carried out related with serum lipid profile in chronic renal disease and diabetes mellitus⁶. No research study was carried out previously for serum lipid profile in chronic hepatitis C in our population. Various research studies in which the derangement of lipid metabolism and its linkage with causes of the chronic hepatic illness is made obvious.⁷

Fernandez and Rodriguez CM.⁸ demonstrated in study that Hepatitis C genotype 3 chronic hepatic illness is related with serum lipid changes and these changes are reversible with

sustained viral response.

Few research studies have demonstrated linkage with Chronic hepatitis C and lipid metabolism. Some research studies have validated that in individuals infected with hepatitis C virus a greater prevalence of high cholesterol level and low Low density lipoprotein levels.⁹

Other research studies described decrease triglyceride (TG) levels in chronic Hepatitis C virus infected individuals.¹⁰ Even though altered serum lipid pattern is frequent observation of individuals with chronic hepatic illness of any cause, the association linking Hepatitis C virus and lipid metabolism looks to be further particular: binding of Hepatitis C virus particles to human HDL, (LDL) low

density lipoprotein, and very low LDL has been mentioned.⁹ Moreover the Low density Lipoprotein receptors could permit the entry of Hepatitis C virus in hepatocytes.⁹

Brier C et al¹¹ studied lipoproteins, HDL-apolipoproteins and actions of hepatic lipase and lecithin cholesterol acyl transference in the plasma of patients with post alcoholic hepatic cirrhosis. Their consequences revealed that in alcoholic cirrhosis, total cholesterol, High Density Lipoprotein, Very Low Density Lipoprotein, High Density Lipoprotein-cholesterol and HL were all reduced. Intermediate density lipoproteins were not obvious noticeable in hepatic cirrhosis. Low Density Lipoproteins in cirrhosis of liver patients enclosed more triglycerides (TG) and less esterified and free cholesterol.

Disturbed lipid profile in several hepatic diseases such as chronic hepatitis, hepatic cirrhosis, ca liver and hepatic illness of metastasis was studied by Ooik et al.¹² They observed that various lipid abnormalities exist in several hepatic disorders e.g. in chronic hepatitis, cirrhosis of liver and ca liver, triglyceride (TG) and Cholesterol levels decreased while Low Density Lipoprotein-triglyceride fraction elevated, metastatic hepatocellular carcinoma revealed a lower High Density Lipoprotein-fraction level however greater levels of other factors than CA liver.

Jiang J, et al.¹³ described that triglycerides levels, cholesterol, free fatty acids, High Density Lipoproteins, low density lipoproteins Lp (a), Apo A, and Apo B, were reduced in individuals of CA liver. They also advocated that this may be because of hepatocellular impairment and this also proposes bad prognosis. Noticeable lipid abnormalities are observed in individuals having Hepatitis C and HIV infection together.¹⁴ This research study reveals reduced levels of Total Cholesterol, Triglycerides (TG), Low Density Lipoproteins and High Density Lipoproteins in chronic hepatic disease. Low lipid levels are also seen in malabsorption,

malnutrition, malignancy, hyperthyroidism and immunoglobulin problems.¹⁵ Because of that persons having other associated illnesses were omitted from this research study.

Hypolipidemia is mostly linked with genotype 3 hepatitis C virus and this is straightly linked with viral response and viral load.¹⁶⁻¹⁸

CONCLUSION: This research study concludes that dyslipidemia is a common observation of chronic hepatic disease due to hepatitis. It assists in finding out of harshness of hepatic illness and also acts as a good prognostic sign. Lipid profile must be done in all individuals with chronic hepatitis C.

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