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ASSOCIATION BETWEEN OBESITY AND FATTY LIVER AMONG PATIENTS

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Abstract:

Objective: *The purpose of this case work is to find out the relationship between fatty liver & fatness among the patients appeared in Ganga Ram Hospital, Lahore, Pakistan.*

Methodology: *This case study is a retroactive case work reviewing the clinical records of the fat patients present with fatty liver for a period of complete one year from May 2017 to April 2018. The collection of data regarding age of the patient, sex, nationality, body mass index, alanine level in serum as ALT & AST as aspartate transaminases, LDL, TSH, cholesterol, bilirubin, triglyceride, albumin & HbA1C carried for every patient. The diagnosis of the fatty liver carried out with normal routine ultrasound when most of the patients appeared with severe pain in their abdomen cavity.*

Results: *Total two hundred and thirty five files of patients were the part of this case work. The average age of the studied population was 46.0 ± 14.40 years with 35.0% (n: 82) males & 65.0% (n: 153) females. The average level of aspartate amino-transferase was 43.90 ±6.180 units / L; the average level of alanine amino-transferase was 36.20 ± 5.10 units / L. A transaminase level of more than routine value was available in 6.40% (n: 15) patients only, while the levels of cholesterol & triglyceride above routine levels were available in 7.20% (n: 17). Fatness & obesity were very important factors of risks in the patient group of this case work. The average body mass index of the patients was 33.60 ± 7.50 Kg/m2. Diabetes mellitus with the obesity is the very vital risk factor for the presence of fatty liver. Thirty three percent (n: 78) patients of this case work were suffering from diabetes. Metabolic syndrome was another important risk factor linked with the availability of the fatty liver which is present in 14.90%*
& hypothyroidism was available in 3.80% patients.

Conclusion*: Fatness and obesity are very vital risk factors for the patients of fatty liver in our population of Pakistan. This complication is very dominating in the female sex. Ultrasound is very important tool for the determination of the fatty liver in the obese adult patients even in the non-availability of the hypertransaminasemia. There should be encouragement for the obese population to decrease their weight for the reduction in the abnormalities of the liver.*

KEY WORDS: *Obesity, fatness, ultrasound, risk factor, methodology, metabolic syndrome, dominating, diabetes, complication.*

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INTRODUCTION

Dr. Ludwig and his colleagues for the very first time in 1980 described the term NASH (non-alcoholic steato hepatosis) to elaborate the past diagnosed clinic-pathologic syndrome [1]. The pure syndrome was available in predominantly obese females with diabetes who were denying the use of the alcohol but in them hepatic histology was constant with the hepatitis due to alcohol [2]. NAFLD (non-alcoholic fatty liver disorders) is the very frequent disease of liver in the USA with an occurrence of 5.0% in the normal public [3] & reaching 25.0% to 75.0% patients suffering from obesity as well as Type-2 diabetes mellitus [4]. An occurrence of 7.0% to 10.0% concluded in the normal public of Lahore [5, 6].

Non-alcoholic disease of fatty liver covers a range of diseases ranging from normal deposition of the liver to the inflammation, fibrosis & cirrhosis [7, 8]. The clear cause of the disease is not obvious but it is the part of the syndrome of metabolism linked with the resistance to insulin, diabetes mellitus, fatness & hypertension. The patients available with elevation of asymptomatic serum amino-transferase of two to three times than the normal [9]. Fatigue and pain of the abdomen cavity are some of the symptoms. Physical assessment may display hepatomegaly [10]. The biopsy of the liver is very effective indicator for prognosis but is very expansive tool for the identification of the fatty liver [11]. Hyper-echogenic liver shows the steatosis with the utilization of the ultrasonography [12]. There is no available effective treatment [13].

We should encourage the patients with obesity to decrease their weight which has an association with the betterment of the liver anomalies [14]. The occurrence of the fatness & obesity is increasing in or population particularly in females because of change in the habits of diet and artificial style of life. We researched the relationship between the fatty liver as identified by the ultrasonography and obesity among patients appeared in the Ganga Ram Hospital, Lahore Pakistan.

METHODOLOGY:

This is a retroactive review of the patients who underwent the assessment for diagnosis of fatty liver with obesity for a period of complete one year at Ganga Ram Hospital. Ultrasonography was in use for the diagnosis of the fatty liver. The criteria for ultrasonography which was in use for the identification of fatty liver contained echo discrepancy of liver & kidney, availability of an enhanced echogenicity of liver, penetration of echo into very deep region of the liver, & clarity of the structures of blood vessels of liver. All the patients available with fatty liver as diagnosed by ultrasound with the availability of sever abdomen pain were the part of this case work.

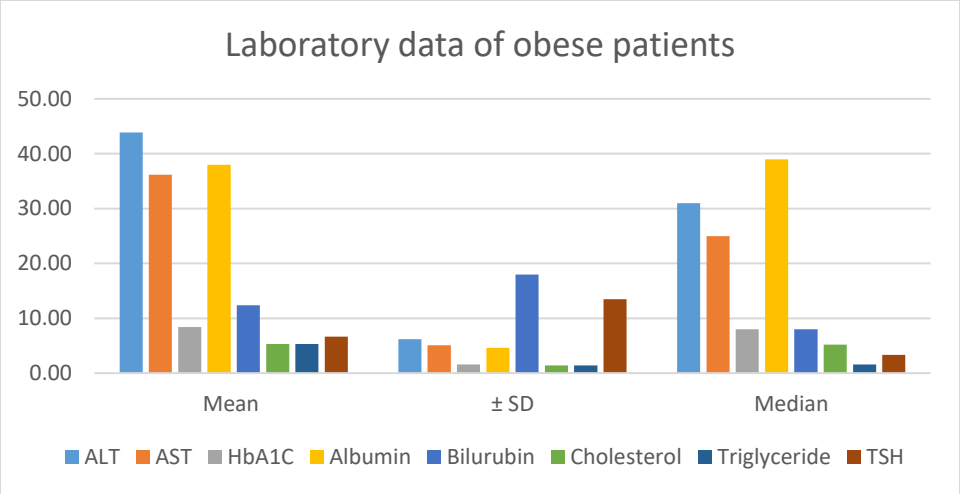
The documentation of the information as ALT, AST, cholesterol, triglyceride, TSH, bilirubin & albumin carried out. Greater than 30 body mass index was in the category of obesity. We gathered the information from the patients about body mass index, height, nationality, sex & medical appearance of the pain in abdomen or availability of the hepatomegaly. All the other diseases of liver other than fatty liver were not the part of this case work. All the patients of this case work denied the use of alcohol. Average and SD values for the expression of the Student's T test & Chi-square test.

RESULTS:

There were total two hundred and thirty five patients with fatness & obesity were the participants of this case work. The average age of the patients was 46.0 ± 14.40 years. There were 35.0% (n: 82) & 65.0% (n: 153) females in this case work. Forty nine percent (n: 115) patients were the resident of Lahore city and other patients were from outside of Lahore. The laboratory data of all the patients is available in Table-1.

Table-I: Laboratory data in obese patients with fatty liver

Laboratory Tests	Mean	± SD	Median	Range
ALT	43.90	6.18	31.0	17.0-519
AST	36.20	5.10	25.0	19.0-536
HbA1C	8.40	1.60	8.0	6.0-12%
Albumin	38.00	4.60	39.0	16.0-47.0
Bilirubin	12.40	18.00	8.0	2.0-144.0
Cholesterol	5.30	1.40	5.2	2.0-14.3
Triglyceride	5.30	1.40	1.6	0.1-12.1
TSH	6.64	13.50	3.3	0.2-95.0

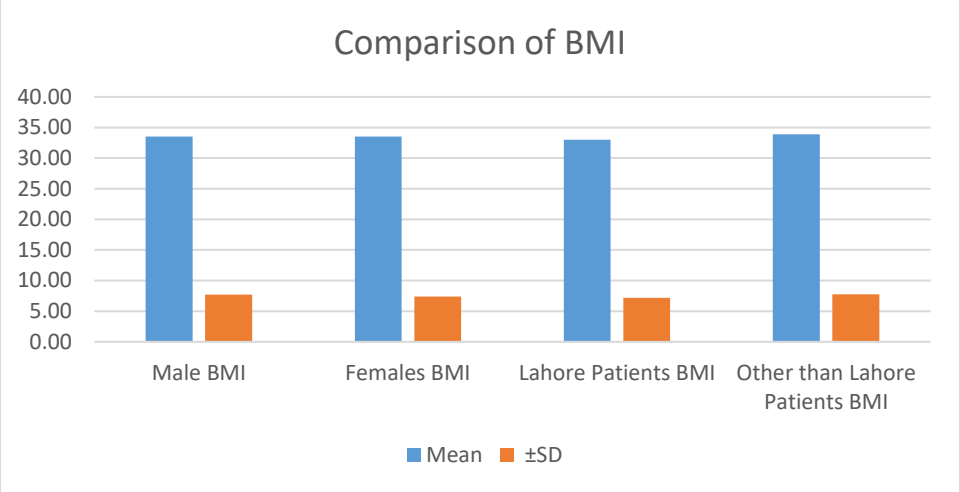


Average level of serum aspartate amino-transferase was 43.90 ± 6.180.1 units / L, alanine amino-transferase average level was 36.20 ± 5.10 units / L & bilirubin was 12.40 ± 18.0 mmol/L. An amount of transaminase beyond the routine range was available in 6.40% (n: 15) patients. The prevalence of the hypertransaminasemia was not important in association with the body mass index and patient's age. The levels of the cholesterol & triglyceride were above the routine limit available in 7.20% (n: 17) patients in which thirteen patients were suffering from diabetes.

The average level of cholesterol was 5.30 ± 1.40 mmol/L & average level of triglyceride was 5.30 ± 1.40 mmol/L. Fatness & obesity are the main factors of risk for the fatty liver in our population. The average value of body mass index was 33.60 ± 7.50 Kg/m2. Important disparity in body mass index was available between people of Lahore and outsiders as elaborated in Table-2. There was an important association between the female gender and the fatty liver. Diabetes was also an important risk factor. Thirty three percent population of this case work were suffering from diabetes.

able-II: Comparison of BMI between sex and nationality in patients with fatty liver

Character	Mean	±SD	P-value
Male BMI	33.50	7.70	<0.005
Females BMI	33.50	7.40	
Lahore Patients BMI	33.00	7.20	<0.005
Other than Lahore Patients BMI	33.90	7.76	



DISCUSSION:

Greater than thirty BMI is definition of obesity according to NASH. It has an association with those people who are fat moderately 10% to 40% more than the ideal weight of their body [14]. NASH is very common issue in the population with obesity and fatness. This complication is very much similar in young females. Past surveys about epidemiology have displayed a high occurrence of fat & obesity among the population of our people [15, 16]. The obesity is very high prevalent among the females of our country in comparison with the rate in other countries [17-19]. The prevalence of hypertransaminasemia among patients with identified fatty liver according to ultrasound is same to the other case works in the same subject [20]. Obesity & diabetes mellitus have a close association. Our study was unable to display an association between the period of diabetes and the extremity of the fatty liver.

Metabolic syndrome was present in 14.90% population of this case work which is same with many other case works [21]. Hypothyroidism is very important risk factor linked with obesity & fatty liver which were present in 3.80% of this study population [22]. Hypertransaminasemia was present among the patients suffering from extreme fatty liver; hemolytic anemia was present in 2 patients because of shortage of red cell Mg2± adenosine tri-phosphatase & one patient found with a disease of glycogen deficiency [23]. There can be an incidental discovery of the fatty liver during ultrasound of the fatty liver which is unclear, nondescript aching in person [24].

CONCLUSION :

Fatness and obesity are very important factors of risk for presence of fatty liver in our population which is more occurring among females. Ultrasound is very effective tool for the determination of the fatty liver among fat adults even in the non-availability of the hypertransaminasemia. There is no proper effective treatment completely. There should be an encouragement of the patients for the decrease in their weight which has association with the betterment in the anomalies of liver.

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