WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Prevalence of Fatty Liver and its Risk Factors as Detected using USG among Kashmiri people : A Cross Sectional Study

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ABSTRACT:

USG Abdomen is the simplest modality to detect fatty liver and to grade it. Usually an asymptomatic condition in itself fatty liver is often detected for USG done for other indications. Simple grading system(Grade 1,2,3) can be used. Worldwide NAFLD and NASH are the leading causes of CLD. This study tries to find out the prevalence of fatty liver among kashmiri population, and also the prevalence of high risk factors including Type 2 Diabetes Mellitus, Obesity, hypothyroidism, PCOS, among patients diagnosed with fatty liver.

Keywords: Fatty Liver, USG, T2DM, Obesity

INTRODUCTION

Fatty Liver is diagnosed on USG when the echopattern of Liver is brighter than surrounding structures such as kidney. When the echopattern is so bright that the walls of portal vein/portal radicles are not definable fatty liver is categorised as Grade 2. When the echopattern becomes so bright that the diaphragm is not separately visible the fatty liver is categorised as Grade 3. Traditional knowledge relates fatty liver with metabolic syndrome, high plasma triglycerides, high chances of Coronary Artery Disease and various other effects. To find out the prevalence of fatty liver disease and its risk factors is the basis of this study.

METHODS

Patients presenting to Out Patient Department (during 2020-2021) of SKIMS with a request for USG Abdomen were evaluated. Patients with no evidence of fatty Liver and presence of fatty liver were documented. Fatty Liver was graded as Grade 1,2,or3. Findings were documented and evaluated subsequently. Since most patients were dated properly and were being evaluated on OPD basis history of High risk factors being present or absent was noted on OPD cards. All such relevant information was collected and tabulated, with the consent of patients.

RESULTS

A total of 572 patients were evaluated in this study.

Table 1: Age distribution of patients with fatty liver

Age	No of patients with fatty liver	No of patients without fatty liver	Total
<18	8(8.8%)	82	90
18-30	26(20.1%)	123	129
30-45	46(32.1%)	97	143
>45	67(31.9%)	143	210
Total	147(25.6)	425	572

The table clearly reveals that the prevalence of fatty liver increases steadily with advancing age.

Table 2: **Gender Distribution of patients**

Gender	No of patients with fatty liver	Total
Male	82(26.4%)	310
Female	65(24.8%)	262
Total	147	572

The prevalence of fatty liver was almost the same among both women and men, with men reporting just a percentage and a half higher prevalence

Table 3: Prevalence of Grades of Fatty Liver

Grade of Fatty Liver on USG	No of patients with prevalence %age
Grade 1	66(11.5%)
Grade 2	45(7.8%)
Grade 3	36(6.2%)

Grade 1 was the most common grade of fatty liver depicting only Mild fatty changes,while grade 2 and grade 3 were equally common in this study.

Table 4: High Risk Factors among patients of Fatty Liver

High risk factors	No of patients(Out of 147)
Obesity (BMI>25)	43(29%)
Type 2 DM	37(25.5%)
PCOS	14(9.5%)
Chronic Alcohol Abuse	8(5.4%)
Hypothyroidism	16(10.8%)

Obesity and Type 2 Diabetes Mellitus were the most common high risk factors associated with Fatty Liver. Chronic Alcohol Abuse was much less commonly noted in this study as compared to worldwide averages. PCOS and hypothyroidism were also significant high risk factors.

IMAGES:

Figure1: Normal liver as seen on usg

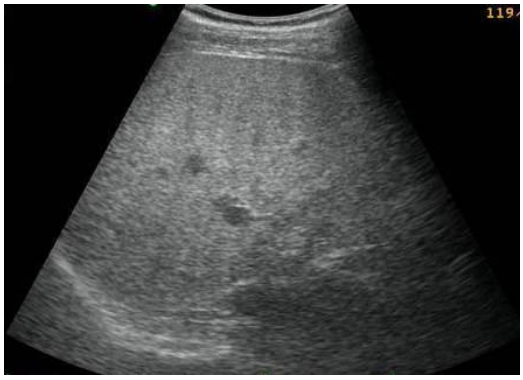

Figure 2: Grade 1 fatty liver as seen on usg

Figure 3: Grade 3 fatty liver with obscuration of diaphragm

DISCUSSION:

Our data show that the overall prevalence of Fatty Liver among this cohort of patients was 25.6%, ranging from 8% among those aged <18 years to 20% among those 18-30years, and 30% among those aged >45 years. These data confirm that there is a high prevalence of Fatty Liver among adolescence as well as young adults, and suggests that the prevalence of Fatty Liver increases with age.

Obesity was seen in 29% of patients diagnosed with fatty liver disease, becoming the most common high risk factor. In addition to obesity, we assessed the prevalence of T2DM in this cohort. Among those with Fatty Liver disease, the overall prevalence rate of T2DM was 25%. Alcohol contributed much less to the prevalence of Fatty Liver in our study. Even with all the risk factors a significant proportion of patients (app 40%) had no underlying high risk factors suggesting incomplete understanding of the disease

CONCLUSION:

Fatty Liver is a growing epidemic in our population. Even teenagers and adlosecents are affected by this problem. Obesity, T2DM , and PCOS are some of the easily targetable associations/root causes of this problem. Prevention of these high risk factors by exercise and intake of low calorie healthy food may help mitigate this problem and bring down the overall prevalence of this disease.

Conflicts of Interest: None

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