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Research Article

**NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) IN  
PATIENTS WITH TYPE 2 DIABETES MELLITUS**<sup>1</sup>Dr. Muhammad Adnan Bawany, <sup>2</sup>Dr. Naveed Aslam Lashari, <sup>3</sup>Dr. Majid Ali Soomro,  
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Jamshoro<sup>4</sup> General Practitioner Zulekha Hospital Dubai United Arab Emirates**ABSTRACT:****OBJECTIVE:** To determine the frequency of non-alcoholic fatty liver disease (NAFLD) by ultrasonography in patients with type 2 diabetes mellitus**PATIENTS AND METHODS:** The three months cross sectional study consists of type 2 diabetic population. The clinical history was taken and relevant physical examination was performed while the laboratory investigations included blood sugar level, liver function tests, fasting lipid profile and haemoglobin A1C whereas the NAFLD was diagnosed by ultrasound of the liver. The data was collected and analyzed in SPSS 17 to gain the frequencies, percentages and mean  $\pm$ SD.**RESULTS:** During three month study period the prevalence of NAFLD with male population predominance having mean  $\pm$  SD for age (yrs) and duration of diabetes (yrs) was  $52.76 \pm 7.75$  and  $9.95 \pm 3.74$ . The existence of NAFLD was more common in patients with raised HBA1C and diabetic population with raised BMI.**CONCLUSION:** NAFLD is associated with type 2 diabetic patients and ultrasonography is the simple, economical and easily accessible tool to detected NAFLD in type 2 diabetic population.**KEYWORDS:** Non-alcoholic fatty liver disease, diabetes mellitus and Metabolic syndrome**Corresponding author:****Dr. Hamid Nawaz Ali Memon,**

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**INTRODUCTION:**

Non-alcoholic greasy liver illness (NAFLD) involves a range of pathologic conditions including basic steatosis, nonalcoholic steatohepatitis and cirrhosis impacts roughly 20-30% of the all inclusive community and its predominance is expanding overall [1,2]. In China with constantly expanding pandemic of metabolic issue, for example, weight, insulin safe and metabolic disorder (MetS), NAFLD has additionally been developing at a disturbing rate and representing an extensive extent of the Chinese populace in danger of approaching liver infections in the following decade. NAFLD is usually connected with weight and insulin obstruction, which in essence are firmly identified with a group of other metabolic variations from the norm [3]. Current pervasiveness gauges are generally viewed as moderate since patients with NAFLD are frequently asymptomatic, variations from the norm are distinguished incidentally, and indicative tests need exactness and noninvasiveness [4]. The most critical hazard factors for NAFLD incorporate the segments of metabolic disorder: corpulence, glucose prejudice or diabetes, hypertension, and dyslipidemia, especially raised triglycerides and low levels of HDL cholesterol [5]. NAFLD itself is a hazard factor for expanded dreariness, mortality and cardiovascular sickness. Regardless of these actualities, most patients have a decent guess if the condition is gotten in its beginning times [6]. In this manner there is a need the information to distinguish, evaluate, and treat patients for NAFLD to guarantee better patient results. Diabetes mellitus and cardiovascular sickness are

quickly increasing tremendous size in Pakistan. In type 2 diabetic patients NAFLD usually exists and led to assess the commonness of NAFLD as analyzed by ultrasound examination of the liver in type 2 diabetic population.

**PATIENTS AND METHODS:**

The cross sectional study of three months comprises the type 2 diabetic population of  $\geq 35$  year of age and either gender were screened physically, biochemically and ultrasonographically while the patients known hepatic disorders, HBsAg or HCV positive, ingestion of hepatotoxic drug and known alcoholics were excluded from the study. After the relevant clinical history and physical examination all the patients were explored for NAFLD by ultrasound and the fatty liver was defined as the existence of bright liver (hyperechogenic ) with contrast between liver and kidney parenchyma, vessel blurring while all the baseline and routine investigations were also explored accordingly whereas the glycemic control was assessed on HBA1C. The data was collected on pre-structured proforma and analyzed in SPSS while categoric variables were expressed as frequencies and percentages while the numerical variables as mean  $\pm$ SD.

**RESULTS:**

Total fifty patients of type 2 diabetes mellitus were explored and study having mean age  $\pm$  SD (yrs) and duration of diabetes (yrs) was  $52.76 \pm 7.75$  and  $9.95 \pm 3.74$  with male gender predominance (64%). The results are presented in Table 1.

**TABLE 01: DEMOGRAPHICAL AND CLINICAL PROFILE OF THE STUDY POPULATION**

<b>Parameter</b>	<b>Frequency (N=50)</b>	<b>Percentage (%)</b>
<b>AGE (yrs)</b>	08	16
35-39	16	32
40-49	11	22
50-59	11	22
60+	04	08
<b>GENDER</b>		
Male	32	64
Female	18	36
<b>DURATION OF DIABETES (yrs)</b>		
≤5	15	30
>5	35	70
<b>OBESITY</b>		
Yes	30	60
No	20	40
<b>GLYCEMIC CONTROL</b>		
Good (HBA1C ≤6)	33	66
Bad (HBA1C >6)	17	34
<b>DYSLIPIDEMIA</b>		
Yes	36	72
No	14	28
<b>SMOKING</b>		
Yes	30	60
No	20	40
<b>RESIDENCE</b>		
Urban	32	64
Rural	18	36
<b>Hypertension</b>		
Yes	27	54
No	23	46
<b>NAFLD</b>		
Yes	36	72
No	14	28

**DISCUSSION:**

In this study, the prevalence of NAFLD in type 2 diabetes mellitus patients is explored and increase in prevalence of NAFLD in diabetic population was observed as 72%. The raised prevalence of NAFLD in type 2 diabetes mellitus patients needs further exploration and assessment in type 2 diabetic individuals [7] The diabetic population in terms of NAFLD should also assess for dyslipidemia, obesity,

hypertension, and liver function test and dietary habits. The findings of present study are consistent with former studies [8, 9] In a study by Yi et al found that the prevalence of NAFLD was higher in male population than female and the gender variation in context of NAFLD could be due to existence of dyslipidemia [10] as the level of lipoproteins are more disturbed in obese male population and the findings are correlated with current study. Obesity

and increased waist circumferences are the risk factor for NAFLD reported by former studies [11,12]. It has been found that body mass index was significantly higher in NAFLD population [13]. Due to fatty pathogenesis the liver enzymes (ALT and AST) are also disturbed in type 2 diabetic population although few studies had shown no association among liver enzymes and the existence of NAFLD in type 2 diabetic individuals [14, 15] while another study shown the positive association between NAFLD and disturbed liver function test [16]. In former study the NAFLD was commonly observed in un-controlled diabetic population (elevated HbA1c) [17] and the current series also suggested that there is positive relationship among HbA1c and NAFLD. The limitation of present study was that the diagnosis of NAFLD was made on ultrasonography and not confirmed by liver biopsy although the ultrasonography is the commonest tool for detecting the NAFLD in clinical practice and has good specificity and sensitivity.

#### CONCLUSION:

The overall prevalence for NAFLD in type 2 diabetes mellitus population is higher and implies more cares to prevent fatty liver disorder.

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