

PREVALENCE OF NON ALCOHOLIC FATTY LIVER DISEASE IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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INTRODUCTION

The prevalence of diabetes in India is 3.834. It's well known that diabetes is a systemic ailment, it affects nearly all organsystems. Non- alcoholic adipose liver complication (NAFLD) is being decreasingly feted now as a potentially serious complication of diabetes, especially type 2. The diapason of NAFLD extends from simple steatosis or steatosis with mild inflammation to severenon-alcoholic steatohepatitis (NASH). The pathophysiology and treatment remain unclear in numerous commendations , but important progress has been made since the prolusion of the termsnon-alcoholic steatohepatitis (NASH) in 1980 andnon-alcoholic adipose liver complication(NAFLD) in 1986. ^{1,2}

AIM

To estimate the prevalence of NAFLD in patients with Type 2 diabetes mellitus

MATERIALS AND METHODS

The study was conducted in a tertiary care hospital in Tamil Nadu. The following are the patients' inclusion and exclusion criteria:

INCLUSION CRITERIA:

1. Presence of type 2 diabetes mellitus.

EXCLUSION CRITERIA:

1. Consumption of alcohol
2. Seropositivity to HIV ELISA
3. Seropositivity of anti HCV antibody
4. Patients on drugs that are proven to cause steatohepatitis (steroids, amiodarone, oral contraceptive pills and other estrogen containing preparations.

A total of 150 type 2 diabetes were studied during this period. Both inpatients and outpatients were included in the study after screening for eligibility criteria.

The following investigations were done on these patients:

- Liver function test
- Lipid profile
- Ultrasound abdomen
- Random blood sugar

The patient's weight and height were measured and BMI calculated. A BMI >25 was considered overweight. Waist hip ratio was also measured to look for central obesity. If the ultrasound showed evidence of fatty liver, with or without the elevation of transaminases, a presumptive diagnosis of NAFLD was made.

The data were collected and analysed using SPSS v.16 for the following:

- Prevalence of NAFLD
- Association between lipid profile and presence of NAFLD
- Relationship between central obesity and NAFLD.

RESULTS

Table 1: Baseline characteristics of study participants

| Parameter | Frequency n=150 | Percentage (%) |
|-------------------------|-----------------------|----------------|
| Age | 51.88±20.12 (mean±SD) | |
| Gender | | |
| Male | 30 | 20 |
| Female | 120 | 80 |
| Duration of T2DM | 5.17±14.65 (mean±SD) | |

Table 2: Fatty liver status in study participants

| Parameter | Frequency n=150 | Percentage (%) |
|------------------------|----------------------------|----------------------------------|
| Fatty liver | | |
| Present | 62 | 41.33 |
| | Male - 4 Female - 58 | Male - 2.6 Female - 38.6 |
| Absent | 88 | 58.67 |
| | Male - 26 Female - 62 | Male - 13.54 Female - 45.13 |
| Waist Hip ratio | | |
| <1 | 16 | 25.8 |
| >1 | 46 | 74.19 |
| Triglycerides | | |
| Normal | 6 | 9.67 |
| Increased | 56 | 90.32 |
| Cholesterol | | |
| Normal (<200) | 22 | 35.48 |
| Increased (>200) | 40 | 64.52 |
| BMI | | |
| <25 | 20 | 32.2 |
| >25 | 42 | 67.74 |

DISCUSSION

The frequency of adipose liver in this study was introduced to be 41.3. According to a study conducted by DaadH. Akbar, the frequency of NAFLD was found to be 55.8. According to

another study conducted by Gupta P et al the frequency of NAFLD, by ultrasound examination, was found to be 49.6

Among the cases with NAFLD the chance of cases who were fat was 67.74. Wanless and Lentz set up mild to severe steatosis in roughly 70 of fat cases and 35 of spare cases. Garcia Monzon et al set up NASH in 69 whereas 22 had simple steatosis and only 8 had normal vivisection findings.⁷ In another study the presence of NAFLD was topmost among fat cases, with BMI of 30/-5.5 kg/ m².⁶ still, in another study there was no significant difference in body mass indicator among cases with NAFLD.⁸

NASH can live with only non specific symptoms for times in fat cases before manifesting itself either apropos or with complications of cirrhosis or portal hypertension. The frequency of adipose liver was set up to be advanced among women (38.6) than men. numerous studies have set up the presence of adipose liver to be advanced in women.^{2, 8}

NAFLD and NASH have been described in cases without the classic threat factors of rotundity, diabetes and overt hyperlipidemia. It has been described in cases with central of visceral obesity in a study conducted by Bacon BR et al. ⁷ In another study, adipose liver was explosively identified with visceral adipose towel.⁴⁸ In this study the chance of cases with central rotundity among cases with adipose liver was 100 and those with a waist hip ratio of > 1 was 74.

The no. of cases with increased triglycerides and cholesterol was set up to be 90.3 and 64.5 independently. As mentioned before two thirds of cases with hypertriglyceridemia and one third of cases with hypercholesterolemia have adipose liver.⁶ In another study, among cases with rotundity and adipose liver, roughly 20 have some type of preliminarily linked hyperlipidemia.⁸ In other studies, adipose liver was explosively identified with the degree of dyslipidemia, especially the position of triglycerides. Hypertriglyceridemia was linked as an important threat factor in the development of NAFLD and NASH, it also correlates well with the histological inflexibility of the complaint.^{6,7,8}

In summary, rotundity and type 2 diabetes are the stylish characterized threat factors, with aged age and presence of hypertriglyceridemia, are predictors of the inflexibility of underpinning histologic changes. numerous spare cases with adipose liver have truncal or central obesity. The frequency of NAFLD is more in women than men. Only 10 of successively examined fat cases have normal results at liver postmortem examination. Approximately 5 have cirrhosis and 85 have steatosis. One third of the ultimate have NASH.

CONCLUSION

The frequency of non-alcoholic adipose liver complaint was 41.3 in cases with type 2 diabetes mellitus. It passed more generally in women (38.66) than men. The circumstance of non-alcoholic adipose liver was set up to be advanced in cases who were fat/ fat and in those with central

rotundity. 90.3% of the cases with adipose liver had dyslipidemias(especially hypertriglyceridemia.

REFERENCES

1. Ludwig J, Viggiano TR, McGill DB. Non alcoholic steatohepatitis. Mayo Clin Proc 1980;55:434 – 438.
2. Schaffner F, Thaler H. Non alcoholic fatty liver disease. Prog Liver Dis 1986; 8283 -8298.
3. Harper's Biochemistry 25th ed, 2000; edited by Murray, Grannes, Mayes, Rodwell; 214 – 218.
4. Review of Medical Physiology, editor: William F. Ganong , 21st ed, 2003, Lange publications, 336-358.
5. Lonsoli A, Nurjhan N, Capani F, Gerich J: Predominant role of gluconeogenesis in increased hepatic glucose production in NIDDM. Diabetes 38; 550 – 557, 1989
6. Stone BE, Van Thiel DH; Diabetes mellitus and the liver. Sem Liver Dis 5; 8 – 28, 1985.
7. Gavin N Levinthal, Anthony S. Liver disease and Diabetes Mellitus. Clin Diabetes 17; 1- 12, 1999.
8. Kautzsch E: Leberbefunde bei diabetes mellitus. Med Mschr 17: 229 – 34, 1963