

ASSESSMENT AND EVALUATION OF PROFILE OF FATTY LIVER AT TERTIARY CARE HOSPITAL

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ABSTRACT

Background: Fatty liver is a typical histological and clinical finding. Fatty liver can be two types, non-alcoholic fatty liver disease (NAFLD) or alcoholic fatty liver disease (AFLD) extensively. Non-alcoholic fatty liver disease (NAFLD) is characterized as a liver fat of more than 5-10% of total liver weight, which isn't because of overabundance liquor utilization or different reasons for steatosis. **Material & Methods:** The present prospective observational study was conducted at the Department of Medicine at tertiary care hospital. The study duration was September 2014 to March 2016. In the present study, we enrolled 100 patient's fatty liver diagnosed by ultrasonography method. Those who were found to have fatty liver were included in the present study. **Results** In the present study, among the total study participants the most common presentation of fatty liver was seen in associated with dyslipidemia in (69%) patients, which was followed by smoking history in (21%) patients, which was followed by alcohol consumption history in (18%) patients. Elevated SGPT/ SGOT levels were found in 20% of patients in the biochemical investigation, specifically elevation of SGPT levels was more significant than SGOT levels. Among the total study participants, the most common presentation of fatty liver was seen in associated with obesity in (44%) patients and the following associations were found with different disease respectively hypertension in (33%) patients, diabetes mellitus in (27%) patients CAD in (5%) patients and CKD in (2%) patients. **Conclusion:** We concluded from the present study that most of the patients with fatty liver disease when diagnosed by ultrasound abdomen examination followed necessary healthy lifestyle modifications, can prevent the development and progression of metabolic syndrome, hepatocellular carcinoma, and mortality.

Keywords: Fatty liver, NAFLD, AFLD.

INTRODUCTION

Postpartum Fatty liver is a typical histological and clinical finding. Fatty liver can be two types, non-alcoholic fatty liver disease (NAFLD) or alcoholic fatty liver disease (AFLD) extensively. Non-alcoholic fatty liver disease (NAFLD) is characterized as a liver fat of more than 5-10% of total liver weight, which isn't because of overabundance liquor utilization or different reasons for steatosis (1). If there is no coinciding liver disease, for example, alcoholic hepatitis or steatohepatitis, further nearby organ damage doesn't occur. In the clinical setting, it is hard to differentiate

subjects with NAFLD and AFLD utilizing anomalous liver function tests (LFTs) (2).

Non-alcoholic fatty liver illness is a significant reason for chronic liver disease in India. Its incidence in the Indian population goes from 5 to 28%, which is similar to the other studies worldwide (3). A metabolic syndrome is a group of diseases that increment the danger of coronary illness, stroke, and diabetes. The event of fatty liver in individuals with metabolic disorder is presently regular due to expanded urbanization and changing food propensities and an inactive lifestyle. Obesity and its

antagonistic affiliations, particularly type2 diabetes and hypertriglyceridemia, are the primary components answerable for the flow epidemic (4). Non-alcoholic fatty liver infection (NAFLD) is currently viewed as what could be compared to metabolic syndrome (5).

Fatty liver is related to a few atherosclerotic danger factors, for example, hypertension, diabetes, and dyslipidemia. It has additionally been identified with insulin resistance. This affiliation was found in NIDDM patients just as in non-diabetic patients (6). Although a relationship between atherosclerotic risk factors and hepatic steatosis has been portrayed, conceivable direct connections between hepatic steatosis and atherosclerosis stay to be researched. Hence the present study was conducted to assess and evaluate the profile of fatty liver at tertiary care hospital.

MATERIALS & METHODS

The present prospective observational study was conducted at the Department of Medicine at tertiary care hospital. The study duration was September 2014 to March 2016. A sample size of 100 was calculated at a 95 % confidence interval at a 10 % acceptable margin of error by epi info software version 7.2. In the present study, we enrolled 100 patient's fatty liver diagnosed by ultrasonography method. Those who were found to have fatty liver were included in the present study. Patients were enrolled from the outpatient department and ward by simple random sampling. Clearance from Institutional Ethics Committee was taken before the start of the study. Written informed consent was taken from each study participant.

All the patients who were given consent irrespective of age and gender were included in the study design. The demographic details and clinical history, including the history of associated risk factors, history of drugs and associated comorbid diseases, liver function test result, treatment is given and length of hospital stay was recorded for each study participant. Clinical data of all patients were collected and analyzed. In the present study clinically and hemodynamically unstable patients were excluded. Data analysis was carried out using SPSS v22. All tests were done at an alpha (level significance) of 5%; means a significant association present if the p-value was less than 0.05.

RESULTS

In the present study, we enrolled 100 patient's fatty liver diagnosed by ultrasonography method. Those

who were found to have fatty liver were included in the present study. The study included 100 patients with an average age of 47.7 years with 36 patients male and 64 patients' female patients with an average BMI of 26.6 kg/m². In the present study, among the total study participants, the most common presentation of fatty liver was seen in 41-60 years age group (60%), which was followed by in 61-70 years age group (22%), which was followed by in 20-40 years age group (15%) and which was followed by in more than 70 years age group (3%). (Table 1)

Table 1: Distribution of study subjects according to the study parameters.

Age	Mean 47.7 Years
20-40 years	15%
41-60 years	60%
61-70 years	22%
>70 years	3%
Sex	
Male	36 patients
Female-	64 patients
Body Mass Index(kg/m ²)	Mean -26.6 kg/m ²

In the present study, among the total study participants, the most common presentation of fatty liver was seen in associated with dyslipidemia in (69%) patients, which was followed by smoking history in (21%) patients, which was followed by alcohol consumption history in (18%) patients. Elevated SGPT/ SGOT levels were found in 20% of patients in the biochemical investigation, specifically elevation of SGPT levels was more significant than SGOT levels. (Table 2).

Table 2: Distribution of study subjects according to the associated factors.

Parameter	No. of Patients
Alcohol consumption	18%
Smoking	21%
Dyslipidemia	69%
Elevated SGPT/ SGOT	20%

In the present study, among the total study participants, the most common presentation of fatty liver was seen in associated with obesity in (44%) patients, which was followed by associated with hypertension in (33%) patients, which was followed by associated with diabetes mellitus in (27%) patients, which was followed by associated with

CAD in (5%) patients and which was followed by associated with CKD in (2%) patients. (Table 3)

Table 3: Distribution of study subjects according to the associated comorbidities.

Associated comorbidities	No. of Patients
Obesity	44%
Hypertension	33%
Diabetes mellitus	27%
CAD	5%
CKD	2%

DISCUSSION

In the present study, we enrolled 100 patient's fatty liver diagnosed by ultrasonography method. Those who were found to have fatty liver were included in the present study. The study included 100 patients with an average age of 47.7 years with 36 patients male and 64 patients' female patients with an average BMI of 26.6 kg/m². In the present study, among the total study participants, the most common presentation of fatty liver was seen in 41-60 years age group (60%), which was followed by in 61-70 years age group (22%), which was followed by in 20-40 years age group (15%) and which was followed by in more than 70 years age group (3%). Similar results were obtained in a study conducted by Shaik KU et al among 250 patients with fatty liver diagnosed by ultrasonography method. They reported the age ranged from 18 to 65 years, the mean age being 48.87 years. Out of the 70 patients with fatty liver, 23 were males and 46 are females (7). Similar results were obtained in a study conducted by Danasekaran V et al among 60 patients with fatty liver diagnosed by ultrasonography method. They reported the out of the 60 study patients, the mean age of patients was 47.9±9.3 years and according to the age distribution, most of the patients 40% were belonged to the age group of 41-50 years, with an almost equal distribution of male and female (8).

In the present study, among the total study participants, the most common presentation of fatty liver was seen in associated with dyslipidemia in (69%) patients, which was followed by smoking history in (21%) patients, which was followed by alcohol consumption history in (18%) patients. Elevated SGPT/ SGOT levels were found in 20% of patients in the biochemical investigation, specifically elevation of SGPT levels was more significant than

SGOT levels. Similar results were obtained in a study conducted by Chouhan M et al among 88 patients with fatty liver diagnosed by ultrasonography method. They reported similar results compared to the present study (9). Similar results were obtained in a study conducted by Dhyani M et al among patients with Non-alcoholic fatty liver disease diagnosed by ultrasonography method. They reported similar results compared to the present study (10).

In the present study, among the total study participants, the most common presentation of fatty liver was seen in associated with obesity in (44%) patients, which was followed by associated with hypertension in (33%) patients, which was followed by associated with diabetes mellitus in (27%) patients, which was followed by associated with CAD in (5%) patients and which was followed by associated with CKD in (2%) patients. Similar results were obtained in a study conducted by Ajay D et al among 100 patients with Non-alcoholic fatty liver disease diagnosed by ultrasonography method. They reported similar results compared to the present study (11). Similar results were obtained in a study conducted by Bhatt H et al among patients with Non-alcoholic fatty liver disease diagnosed by ultrasonography method. They reported similar results compared to the present study (12).

CONCLUSION

We concluded from the present study that most of the patients with fatty liver disease when diagnosed by ultrasound abdomen examination followed necessary healthy lifestyle modifications, can prevent the development and progression of metabolic syndrome, hepatocellular carcinoma, and mortality.

REFERENCES

1. Sarin SK, Kumar M, Eslam M, George J, Al Mahtab M, AkbarSMF, Jia J, Tian Q, Aggarwal R, Muljono DH, Omata M, Ooka Y, HanKH, LeeHW, Jafri W, Butt AS, Chong CH, LimSG, PwuRF, Chen DS. Liver diseases in the Asia-Pacific region: a Lancet gastroenterology&Hepatology Commission. *Lancet GastroenterolHepatol.* 2020;5(2):167-228. doi:[10.1016/S2468-1253\(19\)30342-5](https://doi.org/10.1016/S2468-1253(19)30342-5), PMID31852635.
2. De A, Duseja A. Natural history of simplesteatosis or nonalcoholicfatty liver. *J ClinExpHepatol.* 2020;10(3):255-62. doi:[10.1016/j.jceh.2019.09.005](https://doi.org/10.1016/j.jceh.2019.09.005), PMID32405182.

3. Sanal MG, Sarin SK. Association of nonalcoholic fatty liver disease with metabolic syndrome in Indian population. *Diabetes Metab Syndr Clin Res Rev.* 2011;5(2):76-80. doi:[10.1016/j.dsx.2012.02.015](https://doi.org/10.1016/j.dsx.2012.02.015), PMID[22813407](https://pubmed.ncbi.nlm.nih.gov/22813407/).
4. Duseja A. Nonalcoholic fatty liver disease in India--is it different? *Trop Gastroenterol Off J DigDisFound.* 2006;27(4):142-6. PMID[17542290](https://pubmed.ncbi.nlm.nih.gov/17542290/).
5. Sharma M, Kulkarni A, Kumar P, Nori VB, JagtapN, Gupta R, ReddyDN, RaoPN. Difference in lifestyle and metabolic profile of non-alcoholic fatty liver disease with raised alanine aminotransferases between obese and non-overweight subjects. *Sci Rep.* 2020Dec1;10(1):15232. doi:[10.1038/s41598-020-72306-x](https://doi.org/10.1038/s41598-020-72306-x), PMID[32943747](https://pubmed.ncbi.nlm.nih.gov/32943747/).
6. Goyal A, Arora H, Arora S. Prevalence of fatty liver in metabolic syndrome. *J Fam Med Prim Care.* 2020;9(7):3246-50. doi:[10.4103/jfmpe.jfmpe_1108_19](https://doi.org/10.4103/jfmpe.jfmpe_1108_19), PMID[33102278](https://pubmed.ncbi.nlm.nih.gov/33102278/).
7. Shaik KU, Deepthi KG, Nagabhushana MV, Keerthana B. A study on fatty liver in patients admitted to medical wards in tertiary hospital. *Int J Adv Med.* 2016;5(6):1388. doi:[10.18203/2349-3933.ijam20184241](https://doi.org/10.18203/2349-3933.ijam20184241).
8. Danasekaran V, Narayanan M. An observational study of the evaluation of fatty liver in non-alcoholics with metabolic syndrome using fatty liver index and its correlation with USG elastography. *Int J Adv Med.* 2014;7(4):673. doi:[10.18203/2349-3933.ijam20201121](https://doi.org/10.18203/2349-3933.ijam20201121).
9. Chouhan M, Kansal A, Trikha S, Gupta M. To study the carotid intima media thickness in patients of fatty liver disease. *Int J Adv Med.* 2013;4(5):1282. doi:[10.18203/2349-3933.ijam20173715](https://doi.org/10.18203/2349-3933.ijam20173715).
10. Li Q, Dhyani M, Grajo JR, Sirlin C, Samir AE. Current status of imaging in nonalcoholic fatty liver disease. *World J Hepatol.* 2018 Aug 27;10(8):530-42. doi: [10.4254/wjh.v10.i8.530](https://doi.org/10.4254/wjh.v10.i8.530), PMID[30190781](https://pubmed.ncbi.nlm.nih.gov/30190781/).
11. Duseja A, Das A, Das R, Dhiman RK, Chawla Y, Bhansali A, Kalra N. The clinicopathological profile of Indian patients with nonalcoholic fatty liver disease (NAFLD) is different from that in the West. *Dig Dis Sci.* 2007Sep;52(9):2368-74. doi: [10.1007/s10620-006-9136-y](https://doi.org/10.1007/s10620-006-9136-y), PMID[17420951](https://pubmed.ncbi.nlm.nih.gov/17420951/).
12. Bhatt HB, Smith RJ. Fatty liver disease in diabetes mellitus. *Hepatobiliary Surg Nutr.* 2015;4(2):101-8. doi:[10.3978/j.issn.2304-3881.2015.01.03](https://doi.org/10.3978/j.issn.2304-3881.2015.01.03), PMID[26005676](https://pubmed.ncbi.nlm.nih.gov/26005676/).

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