

# Study of Non Alcoholic Fatty Liver in Patients of Andhra Pradesh Population

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## ABSTRACT

95 non-alcoholic fatty liver patients aged between 30 and 70 year were studied. The type of NAFLD were Grade-1(Mild steatosis) 21 (22%) Grade-2(moderate steatosis) were 42 (44.2%) Grade-3(sever steatosis) were 32(33.6%) the history of NAFLD patients was BMI in 42(44.2%) patients had 22.8 to 23.2 and in 53(55.7%) patients had 23.3 to 24.3 pre-diabetic patients were 30(31.5%) and diabetic were 65 (68.4%) Normatensive were 20 (21%) and hypertensive were 75 (73.6%) patients with IHD were 20 (21%) and MI patients were 6(6.31%) the parameters of bio-chemical study was total cholesterol value  $225 \pm 10.2$  triglyceride  $250 \pm 15.3$  HDL  $43.2 \pm 2.5$  LDL  $130 \pm 15.6$  AST  $53.7 \pm 3.5$  ALT  $69.2 \pm 6$ . ALP  $109 \pm 12.6$  S. Albumin value as  $3.52 \pm 0.10$ , total bilirubin  $0.95 \pm 11$  FBS  $129 \pm 3.2$ (mg/dl) HbA<sub>1c</sub>  $9.11 \pm 3.2$  (mg/dl), Systolic BP was  $140 \pm 5.40$ , Diastolic Bp  $85 \pm 5.12$ . This study of NAFLD is quite useful to review the clinical manifestation because NAFLD is the most prevalent cause of liver disease in India and abroad. The development of non -alcoholic steato hepatitis (NASH) and fibrosis identifies an at risk group with increased risk of cardiovascular and liver related death, hence management of NAFLD remains a clinical challenge.

**Keywords-** NAFLD- Non-alcoholic fatty liver diseases, NASH- Non alcoholic steato hepatitis, DM- Diabetic mellitus, Andhra Pradesh

## INTRODUCTION

Non-alcoholic fatty liver diseases (NAFLD) is a spectrum of disorder defined by excess of accumulation of triglyceride in hepatocytes, ranging from simple steatosis which is often clinically stable to non-alcoholic steato hepatitis (NASH) which may progress into cirrhosis of liver, NAFLD has risen rapidly in parallel with dramatic rise in population levels of obesity and diabetes. The presence of non-alcoholic fatty liver diseases (NAFLD) has become most prevalent cause of liver disease. It includes patients with simple steatosis as also those with non-alcoholic steato-hepatitis. Non-alcoholic steato hepatitis is more advanced stage of NAFLD<sup>(1)</sup> and has higher risk of progressing to liver cirrhosis or hepato cellular carcinoma. Even in the

absence of alcoholic intake patients who have one or more components of metabolic syndrome with insulin resistance develop hepatic steatosis due to increased lipolysis and increased delivery of fatty acids from adipose tissue to liver<sup>(2)</sup> some of these patients with hepatic steatosis develop hepatic oxidative stress and recruitment of various cytokines, leading to hepatic inflammation and/or fibrosis. It is presumed that NAFLD has initial benign and non-progressive course. It may have large burden of viral hepatitis. Urbanization, sedentary lifestyle and fat rich diet, and a higher inherited tendency for diabetes mellitus makes more prone to metabolic syndrome or insulin resistance and its manifestations lead to NAFLD.<sup>(3)(4)</sup> Hence attempt was made to study the type of NAFLD and its associated complications so that, there could be systemic review and emerging strategies for the diagnosis and proper treatment to avoid the further secondary complications, which end into death of the patients.

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## MATERIAL AND METHOD

95 patients ( 55 males and 40 females) aged

between 30 to 70 years who were regularly visiting of Konasima Institute of Medical Science. (KIMS) Amalapuram - 533201, East Godavari. Andhra Pradesh – Were selected for the study, USG ( Ultrasonography) of Abdomen and Bio chemical investigations, BMI was carried out to confirm the diagnosis. Alcoholic intake, haemochromatosis, hydatid cyst, HIV patients were excluded from the study. These finding were grouped and put in a percentage

The duration of the study was about three year.

## OBSERVATION AND RESULTS

**Table -1** Type of Non fatty liver

Grade-I- (Mild sterosis) 21(22.1%),2.Grade-II- (Moderate steatosis) 42(44.2%),3.Grade-III- (Severe steatosis) 32(33, 6%)

**Table-2** History of NAFLD

BMI in 42(44.2%) patients was 22.8 to 23.2 in 53(55.7%) patients it was 23.3 to 24.3

Pre diabetic patients were 30 (31.5%) Diabetic were 65(68.4%)

Norma tensive patients were 20(21%) and hypertensive were 75(78.9%)

Hyper-lipidemic 70(73.6%)

IHD were 20 (21%), MI patients were 6 (6.31%)

**Table-3** Mean value Biochemical study in NAFLD patients. Total cholesterol  $255 \pm 10.2$  triglyceride  $250 \pm 15.3$ , HDL  $43.2 \pm 2.5$ , LDL- $130 \pm 1.6$ , AST  $53.7 \pm 3.5$ , ALP  $109 \pm 12.6$ , ALT  $69.2 \pm 6.3$ , S. Albumin value  $3.52 \pm 0.10$ . Total bilirubin  $0.95 \pm 0.11$ , FBS  $129 \pm 12.1$  HB A<sub>1</sub>C  $9.11 \pm 3.2$ , Systolic BP  $140 \pm 5.40$ , Diastolic BP  $85 \pm 5.12$ .

## DISCUSSION

In the present study of NAFDL in the patients of Andrapradesh had grade-1(mild steatosis ) patients were 21( 22%), grade -2 ( moderate steatosis ) were 42 (44.2), grade -3 server steatosis were 32(33.6%) (Table-1). History of NAFLD was BMI in 42 (42.2%) patients had 22.8 to 23.2, in 53(55.7%) patients had 23.3 to 24.3, Pre- diabetic were 30(31.5%), diabetic 65 (68.4%), Normatensive were 20(21%), and hyper tensive were 75 (78.9%), Hyper lipidemic were 70 (73.6%), IHD patients

were 20(21%) MI patients were 6(6.3%) (Table-2). In the biochemical study mean value of total cholesterol was  $225 \pm 0.2$ , triglyceride was  $250 \pm 15.3$ , HDL  $43.2 \pm 2.5$ , LDL  $130 \pm 15.6$ , AST  $3.7 \pm 3.5$  ALT  $69.2 \pm 6.3$  ALP  $109 \pm 12.6$ . S Albumin  $3.5 \pm 0.10$  Total bilirubin  $0.95 \pm 0.11$ , FBS  $129 \pm 12.1$  HbA<sub>1</sub>C  $9.11 \pm 3.2$ , Systolic BP  $140 \pm 5.40$  Diabetic BP  $85 \pm 5.12$  (Table-3) .These finding were more or less in agreement with previous studies.<sup>(5)(6)</sup> <sup>(7)</sup> NAFLD is associated with metabolic syndrome which is characterized by insulin resistance, hyper tension, cholesterol abnormality, increased risk of blood clotting, type -2 DM, obesity, elevated serum triglyceride, reduced HDL which has greater risk of heart disease, stroke and liver related diseases<sup>(8)</sup> associated with difference in lipid metabolism.<sup>(9)</sup> The causes could be nutritional status, which leads to rapid weight loss, drug induced steatosis, rare metabolic disorder. Drug induced agents include glucocorticoids, amiodarone, synthetic estrogens and highly active anti retroviral drugs. Steatosis is frequently associated with hepatatis C particularly genotype-3 and endocrine disorders such as polycystic ovarian syndrome (PCOS), hypopituitarism and hypothyroidism.<sup>(10)</sup> It is also reported that, the presence of just simple steatosis with no inflammation or fibrosis is associated with similar overall and liver related mortality.<sup>(11)</sup> Hence NAFLD is the third most common cause of chronic liver diseases and chronic viral hepatitis. Insulin resistance is believed to be the key factor that leads to increased lipolysis in peripheral adipose tissue and increased uptake of fatty acids by hepatocytes. The end result is an increase in fatty acids and triglycerides in the hepotocytes leading to steatosis. Insulin resistance is almost universal in patients with NAFLD and is related to an imbalance between pro-insulin (adiponectin) and anti-insulin cytokines (TNF- $\alpha$ )

## SUMMARY AND CONCLUSION

The study of non-alcoholic liver disease (NAFLD) in patients of Andra paradesh population will be quite useful to physician, endocrinologist, radiologist, pathologist to correlate the findings to treat the patients. The rising levels of obesity, diabetes and the metabolic syndrome render it an increasingly important cause of mortality. This present study demands further genetic, nutritional, bio chemical, hormonal study because etiology or pathogenesis of NAFLD is not completely understood.

This research, paper was approved by ethical committee of KIMS. Amalapuram -533201, East Godavari, Andhra Pradesh

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ALP= Alkaline phosphates, FBS=Fasting blood sugar

ALT=Alanine amino transferase, LDL=Low density lipoprotein

HDL= High density lipoprotein, AST= Aspartate Amino transferase

Hb A<sub>1</sub>C= Hemoglobin A<sub>1</sub>C

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