SUMMARY

**Background:** Non Alcoholic Fatty Liver Disease (NAFLD) describes a spectrum of diseases ranging from simple steatosis to non alcoholic steatohepatitis with or without fibrosis to cirrhosis and liver failure. It is a common cause of Chronic Liver Disease and its presence is associated with increased morbidity and mortality. In view of the increase in the number people with known risk factors for NAFLD such as Type 2 Diabetes Mellitus (T2DM) and Obesity worldwide including Sub-Saharan Africa, it is rapidly emerging as a public health issue. It has also been implicated in increasing both microvascular and macrovascular complications in people with Type 2 Diabetes Mellitus. Radiological investigations such as ultrasound scans can aid the diagnosis of NAFLD. Prevalence of NAFLD in T2DM varies worldwide and certain risk factors for developing NAFLD in T2DM such as Obesity and Dyslipidemia have been well documented in world Literature but not much work has been done with regards to Nigeria and Africa as a whole. This study aims to address this paucity of data concerning Prevalence of and associated risk factors for NAFLD in patients with T2DM in this part of the world.

**Objectives:** To determine prevalence of NAFLD as well as associated risk factors for NAFLD in patients with T2DM and also to compare some biochemical parameters such as fasting lipid profile and Liver function tests in diabetics based on their NAFLD status.

**Research Design and Methodology:** This is a prospective case control study of 336 subjects comprising of 168 cases with T2DM and 168 non diabetic controls. This study was carried out at Lagos University Teaching Hospital. Consecutive patients who satisfied the study criteria were
recruited and an investigator administered questionnaire was filled to determine risk factors for liver disease and other metabolic conditions. Physical examination was carried for signs of liver disease and anthropometric measurements were done. Fasting blood samples were taken for lipid profile, liver enzymes, and serology for Hepatitis B and C. Abdominal ultrasound scan was done in order to determine radiological evidence of fatty liver using Aloka Pro-sound 3500 machine equipped with a 3.75MHz probe after a 6 hour fast by the subjects.

**Results:** A higher prevalence of fatty liver was found in patients with T2DM compared with the non diabetic controls (16.7% versus 1.2% P=0.00). The odds of developing NAFLD were increased 16.6 fold in patients with type 2 DM, odds ratio 16.6 (CI 95%, 3.9-70.9). The mean transaminases, TCHOL, LDL-C and TG, though higher in diabetics with NAFLD than those without was not statistically significant. Only 2 diabetics with NAFLD had elevated transaminases. Obesity including Central obesity using the waist circumference was significantly higher in diabetics with NAFLD compared with those without. Male diabetics with NAFLD had lower HDL-C than those without NAFLD.

**Conclusions:** The prevalence of NAFLD in type 2 DM, though not as high as in studies from the western world was still very significant, as people with T2DM were 16.6 times more likely to develop NAFLD compared to non-diabetics. Biochemical parameters like fasting lipid profile and liver biochemistry were not significantly different in T2DM with regard to their NAFLD status. The presence of NAFLD in T2DM was associated with Obesity including Central Obesity and low HDL-C in males.