

Association of Dyslipidemia with Hepatic Fibrosis and Steatosis in Metabolic-Dysfunction Associated Fatty Liver Disease

A.M.D.S. Karunaratna¹, S. Ekanayake^{1*}, C.K. Ranawaka²

¹*Department of Biochemistry, Faculty of Medical Sciences, University of Sri Jayewardenepura, Nugegoda, 10250, Sri Lanka*

²*Department of Gastroenterology, Colombo North Teaching Hospital, Ragama, 11010, Sri Lanka*

**sagarikae@hotmail.com; sagarikae@sjp.ac.lk*

Metabolic-dysfunction-associated fatty liver disease (MAFLD) is a chronic liver disorder that has become more prevalent recently. Dyslipidemia plays a crucial role in the etiopathogenesis of MAFLD. Hence, this study aimed to determine the prevalence of dyslipidemia among MAFLD patients and to evaluate the association between dyslipidemia and hepatic steatosis, fibrosis, and liver profile. A cross-sectional study was conducted with 110 MAFLD patients referred to the Gastroenterology unit, North Colombo Teaching Hospital, Ragama. Hepatic fibrosis (Liver stiffness meter-kPa) and hepatic steatosis (controlled attenuated parameter-dB/m) were determined by FibroScan. The lipid and liver profiles were assessed. Independent t-test was performed to compare the hepatic fibrosis and steatosis scores and liver profile parameters of patients with and without dyslipidemia. The majority of MAFLD patients (n=97, 88%) were diagnosed with dyslipidemia. The prevalence of hypercholesterolemia, hypertriglyceridemia, high levels of low-density lipoproteins cholesterol (LDL-C), and low levels of high-density lipoproteins cholesterol (HDL-C) were 57%, 22%, 36%, and 39%. A total of 52 patients (49%) were under lipid-lowering therapy whereas 45 were dyslipidemic but not under therapy. The mean values of hepatic fibrosis, hepatic steatosis, total cholesterol, LDL-C, HDL-C, and triglycerides were 8.8±2.7kPa, 302.8±34.4dB/m, 190.5±43.1mg/dL, 118.3±37.8mg/dL, 47.3±7.4mg/dL, and 127.9±49.3mg/dL. The hepatic steatosis and fibrosis levels were not significantly different in MAFLD patients with hypercholesterolemia, hypertriglyceridemia, high levels of LDL-C, or low levels of HDL-C when compared to patients without lipid disorders (p>0.05). The gamma-glutamyl transaminase level was significantly high among the patients with hypertriglyceridemia (p=0.002). Significantly high levels of aspartate transaminase and alanine transaminase levels were found in patients with high LDL-C. The MAFLD patients with dyslipidemia had elevated levels of liver enzymes indicating liver injury. Therefore, the management of dyslipidemia is crucial to prevent further progression MAFLD.

Keywords: Metabolic-Associated Fatty Liver Disease, Dyslipidemia, Hepatic Steatosis, Hepatic Fibrosis

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