American Diabetes Association. diabetes

Poster Presentations: Acute and Chronic Complications

405-P: Relationship between NAFLD and Cardiac Complications and Function in T2DM

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Diabetes 2020 Jun; 69(Supplement 1): -.
https://doi.org/10.2337/db20-405-P

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Abstract

NAFLD is common in T2DM patients and has been proposed to be part of the cardiometabolic syndrome.

Aim: To determine the relationship between hepatic fibrosis and cardiovascular abnormalities in T2DM.

Subjects: 72 T2DM patients with NAFLD and 38 T2DM without NAFLD were studied. Based upon liver elastography and Bonacini and Metavir scores T2DM patients with NAFLD were divided into 3 groups: (I) NAFLD with hepatic fibrosis ≥F2 (n=29); (II) NAFL without fibrosis/inflammation (n=11); (III) NASH (n=32). All subjects had cardiac echo to quantitate ventricular volumes, ejection fraction, and diastolic function.

Results: Incidence of cardiovascular complications was higher in patients with hepatic fibrosis: prevalence of arterial hypertension was 40% in T2DM without NAFLD vs. 44 % in NAFL, 69 % in NASH ($p<0.01$) and 70 % in hepatic fibrosis ($p<0.001$). Coronary heart disease was present in 20% of T2DM patients without NAFLD, 37% with NAFL, 36 % with NASH and 53 % with hepatic fibrosis ($p<0.001$). No patient with T2DM without NAFLD had non-fatal myocardial infarction; MI was present in 3.7% of patients with NAFL, 1.7 % with NASH and 15 % with hepatic fibrosis. 3.2% of patients with hepatic fibrosis had stroke; no other patient had stroke. Ejection fraction was decreased ($p<0.05$) in patients with NASH (57 ±3%) and hepatic fibrosis (54 ±2%) vs. NAFL patients (66 ±2%) and T2DM without NAFLD (63 ±1%). End-diastolic volume was increased in patients with NAFL (189 ±6 ml) and NASH (125±8 ml) vs. hepatic fibrosis (106±3ml) and T2DM patients without NAFLD (110±6 ml). End-systolic volume was increased in patients with NAFL (58±5 ml), NASH (55±3 ml) and hepatic fibrosis (48±4 ml) vs. T2DM without NAFLD (42±4 ml).

Conclusion: Liver fibrosis in T2DM is associated with impaired cardiac function and increased cardiovascular complications. The results demonstrate that hepatic inflammation and fibrosis in T2DM patients with NAFLD is an important risk factor for cardiovascular disease and is associated with cardiac dysfunction.

Disclosure O. Lavrynenko: None. **O. Zemlianitsyna:** None. **I. Dunaeva:** None. **N. Kravchun:** None. **V. Sinaiko:**None. **R.A. DeFronzo:** None.