

RISK FACTORS FOR DEVELOPING DIASTOLIC DYSFUNCTION IN NONALCOHOLIC STEATOHEPATITIS

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INTRODUCTION

In the last 20 years, nonalcoholic fatty liver disease (NAFLD) has become the leading cause of chronic liver disease worldwide, primarily as a result of the epidemic of metabolic syndrome. NAFLD is strongly associated with insulin resistance, glucose intolerance, and dyslipidemia and is currently regarded as the liver manifestation of the metabolic syndrome. Mortality in NAFLD is associated with cardiovascular disease, not with liver failure. Nonalcoholic steatohepatitis (NASH) is a type of NAFLD. NASH suggest about inflammation in liver cell damage.

OBJECTIVE

To assess the risk factors in nonalcoholic steatohepatitis, which can lead to the development of diastolic dysfunction.

RESEARCH DESIGN AND METHODS

In cohort study, we enrolled 140 patients with nonalcoholic steatohepatitis (NASH) in results of metabolic syndrome. All patient was non-alcoholic and without any concomitant heart disease. All patients undergone biochemical blood testing, ultrasonography and echocardiography. NASH was diagnosed by ultrasonography and biochemical blood analysis. All patients were excluded for viral hepatitis (B, C, D).

RESULTS

According to our echocardiography data we found occurrence of diastolic dysfunction in NASH is 60%. Diastolic dysfunction was more often in male than female. Patient with grade 3 diastolic dysfunction was symptomatic in terms of dyspnea, palpitation and intolerance to moderate to heavy physical activity. HOMA-IR index was raised in 96% patients with NASH. In presence diastolic dysfunction in NASH observed that high level of the HOMA-IR

(6.06 ± 0.7 , $p < 0,05$), fasting glucose ($6,30 \pm 1.91$ mmol/l, $p < 0,05$), ALT ($43,61 \pm 0,422$ u/l, $p < 0,05$), Alkaline phosphatase ($143,59 \pm 2,848$ u/l, $p < 0,001$), Gamma-glutamyl transferase ($82,22 \pm 1,178$ u/l, $p < 0,05$) cholesterol ($5,99 \pm 1,324$ mmol/l, $p < 0,05$), triglyceride ($2,91 \pm 0,258$ mmol/l, $p < 0,05$), LDL ($1,68 \pm 0,492$ mmol/l, $p < 0,05$) compare to patients without presence of diastolic dysfunction in NASH. In patient with NASH had high level of uric acid. In presence of diastolic dysfunction in NASH 56.90% of patients had high level of uric acid (male $427,60 \pm 12,344$ mmol/l, $p < 0,05$, female $365,43 \pm 10,344$ mmol/l, $p < 0,05$) compare those patients without diastolic dysfunction in NASH.

CONCLUSIONS

Our study data showed that high level of HOMA-IR, LFT (ALT, alkaline phosphatase, gamma-glutamyl transferase), dyslipidemia, uric acid are associated with diastolic dysfunction in NASH. Probably these factors lead to development of cardiovascular disease in NASH.

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