Summary

Introduction

Neuropsychiatric disorders in the form of hepatic encephalopathy are a common complication in patients with both acute and chronic liver diseases. While overt hepatic encephalopathy is relatively easy to diagnose and includes neurological and psychiatric symptoms, ranging from mild disturbances of consciousness to coma, the diagnosis of its subclinical form, i.e. minimal hepatic encephalopathy (MHE), is a challenge for physicians and psychologists. MHE is found in 20-80% of patients with liver cirrhosis, and its occurrence increases the risk of developing overt encephalopathy in the next 5 years. Difficulties in its diagnosis result from the lack of overt clinical symptoms with the simultaneous impairment of cognitive and psychomotor functions as well as the flaws of the available diagnostic tests. Primary biliary cholangitis (PBC) is a chronic autoimmune liver disease characterized by destruction of the intrahepatic bile ducts, leading to chronic cholestasis, progressive fibrosis and, consequently, liver cirrhosis with complications.

Aim of the study

The main aim of the study was to assess the prevalence of MHE in patients with PBC. Moreover, the relationship between the occurrence of MHE and the results of laboratory and neuropsychological tests, as well as the degree of liver failure and fibrosis, was assessed.

Methods

The study included 51 participants (38 patients with PBC and 13 healthy volunteers matched for age and sex). The Psychometric Hepatic Encephalopathy Score (PHES) was used to diagnose MHE. Blood laboratory tests were performed and the degree of liver failure was assessed using the MELD (Model for End-Stage Liver Disease) and Child-Pugh scales. The degree of liver fibrosis was assessed using the non-invasive Elastography Point Qualification (ElastPQ), APRI (AST to Platelet Ratio Index) and Fib-4 (Fibrosis-4) tests.

Results

There was no overt encephalopathy in any of the study participants. Using PHES tests, MHE was diagnosed in 9 patients (24.3%) with PBC but not in the control group. For most

laboratory test results, there were no significant differences between the groups, with the exception of: RBC, PLT, AST, ALT, CRP. These parameters differentiated the group of patients with PBC from the group of healthy volunteers, but did not differentiate the groups with and without MHE. In patients with PBC, the results of serological tests and non-invasive markers of liver fibrosis (ElastPQ, APRI, Fib-4) did not differentiate patients with and without MHE. However, the MELD and Child-Pugh scores were higher in the group of patients with PBC and MHE than in the group with PBC without MHE. Based on logistic regression, the only significant predictor of MHE was the MELD scale, OR = 1.52 CI_{95} [1.08; 2.38], p = 0.032. The optimal cut-off point for MELD as a diagnostic test for MHE was determined based on ROC analysis and it was 8.5 (with sensitivity of 56% and specificity of 85%).

Conclusions

PHES psychological tests are useful in the diagnosis of MHE in patients with PBC. MHE can be present in PBC despite the absence of advanced liver fibrosis or cirrhosis. Non-invasive markers of liver fibrosis and the results of elastography, as well as the results of basic laboratory tests, did not differentiate patients with MHE from other study participants. A slightly elevated MELD result may indicate a higher risk of MHE.