ФЕСТИВАЛЬ МОЛОДІЖНОЇ НАУКИ

"Медицина третього тисячоліття"

13-15 лютого 2023

ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

ЗБІРНИК ТЕЗ

акушерство
та гінекологія

manifestations. Various psychoneurological disorders, such as increased anxiety, memory impairment, headache, and depression were also identified.

Thus, various manifestations of the post-COVID syndrome in patients of a young age were found, regardless of the severity of the coronavirus infection course, which dictates the need for a comprehensive approach to the involvement of related specialists in the diagnosis and pharmacological management of the identified symptoms.

Rozhdestvenska Anastasiia,
INTERLEUKINS AS BIOMARKERS OF NON-ALCOHOLIC STEATOHEPATITIS SEVERITY IN HYPERTENSIVE PATIENTS
Ukraine, Kharkiv
Kharkiv National Medical University
Department of Internal Medicine №1
Scientific advisor: Zhelezniakova Natalia Merabivna

Introduction. Nonalcoholic steatohepatitis (NASH) is defined as a more severe stage of nonalcoholic fatty liver disease. Pathology is often associated with an imbalance of pro-inflammatory and anti-inflammatory cytokines (in particular, interleukin-1β (IL-1β) and interleukin-10 (IL-10), respectively). Prevention of irreversible complications of the disease requires early diagnosis of liver fibrosis. This issue is especially relevant for patients with concomitant hypertension (HT), which complicates the NAFLD.

The aim of the study. To analyze the properties of cytokines IL-1β and IL-10 as markers of liver fibrosis in patients with NASH and HT.

Materials and methods. The study included 63 patients with NASH and HT, 52 patients with isolated NASH and 20 relatively healthy volunteers. Patients underwent a physical examination, general and special laboratory tests. The level of interleukins was determined by enzyme-linked immunosorbent assay (ELISA). Liver parenchyma stiffness was assessed using shear wave elastography on a Soneus P7 device. Statistical processing was carried out using standard descriptive analyzes and the sequential exclusion multiple linear regression analysis method.

The primary model included parameters such as systolic and diastolic blood pressure levels, waist circumference, alanine aminotransferase, aspartate aminotransferase, IL

1β, IL-10, thickness of liver lobes according to ultrasonographic data. The coefficient of determination (R2), ANOVA, analysis of residuals, assessment of the correlation of observed and predicted values were used to assess the quality of the model. The results were considered reliable at $p<0.05$.

Results. In patients with NASH and HT, there was a significant increase in the IL-1β levels (17.55 ng/ml (95% CI 17.06, 19.73)) compared to the isolated NASH group (15.72 ng/ml (95% CI CI 15.25; 17.44), $p<0.001$) and control values (8.26 ng/ml (95% CI 7.79; 8.46), $p<0.001$). IL-10 activity in the group of NASH and HT was significantly lower (12.69 ng/ml (95% CI 11.93, 12.95) than in patients with isolated NASH (14.34 ng/ml (95% CI 13 .27; 14.34), $p<0.001$) and in relatively healthy volunteers (16.19 ng/ml (95% CI 15.15; 17.74), $p<0.001$). Consecutive removal of multicollinearity and non-significant variables during model construction led to the retention of only IL-1β and IL-10 levels among significant predictors. The model was determined to be relevant (adjusted R2=0.606, F=17.421, $p<0.001$).

The correlation between observed and predicted values was 0.58 (Spearman coefficient, $p<0.001$). The residuals had a normal distribution (Shapiro-Wilka W=0.978, p=0.327) and did not show dependence on the predicted values (r=0.016, p=0.900), which indicated a high quality of the model. Constant B values indicate a direct relationship between the liver stiffness and IL-1β values, and an inverse correlation of the liver fibrosis signs with IL-10 levels.

Conclusions. The significant IL-1β activity increase and IL-10 levels decrease were observed in patients with NASH and HT. Both interleukins were identified as significant predictors of liver fibrosis in patients with this comorbidity. Calculation of liver stiffness according to this model is obviously a valuable tool for predicting a liver fibrosis stage in patients with NASH, in particular, in the presence of concomitant HT as an aggravating factor for NAFLD prognosis.