Streszczenie w języku angielskim

Psoriasis vulgaris is a chronic inflammatory skin disease, affecting 2-3% of population worlwide. It is currently considered as a systemic disease closely related to the metabolic syndrome. The incidence of metabolic syndrome in this group of patients ranges between 40 and 60%, and the risk of its development is two times higher in comparision to the general population. Recently, non alcoholic fatty liver disease (NAFLD) is predominantly regarded as a hepatic manifestation of metabolic syndrome, it can develop in about 50% of psoriatic patients.

The background of metabolic complications of psoriasis is persistent low-grade inflammation, coexisting with immunological disturbances and impaired lipid metabolism. These complex relationships prompt search for prognostic indicators of the course of the psoriasis, and also the risk of developing metabolic disorders in this group of patients.

The aim of the study was to assess the concentration of selected fatty acids, ceramides and epidermal fatty acid binding protein (*FABP5, E-FABP*) in serum of patients with psoriasis and coexisting metabolic disturbances.

Eighty five patients with various severity of psoriasis and 32 healthy subjects were included in the study. The overweight was diagnosed in 30 of them (35%), obesity – in 27 of patients (32%), elevated concentration of alanine aminotransferase (ALT) in serum in 12 of them (14%). In the studied group of patients concentration of sphingosine-1-phosphate was significantly higher in comparison to the controls. Patients with psoriasis had a significantly lower percentage of unsaturated fatty acids compared to healthy population. We found positive correlation of nervonic ceramide (C24: 1) and negative of eicosapentaenoic ceramide (C20: 5) with the psoriasis severity. The similar correlations were found in relation to C-reactive protein (CRP) in patients with normal body weight. Patients with elevated concentration of ALT had more severe course of psoriasis and higher concentration of CRP compared to patients with ALT within the normal range. The concentration of myristic ceramide (C14:0) and sphingosine-1-phosphate were higher in patients with elevated ALT levels compared to the control group. The concentration of ALT in serum positively correlated with the concentration of saturated fatty acids and negatively with the concentration of unsaturated fatty acids.

74 patients with psoriasis and 30 healthy controls were included in the next study evaluating epidermal fatty acid binding protein. The higher concentration of epidermal fatty acid binding protein among psoriatic patients was shown in comparison to healthy controls. The serum concetration of FABP5 was significantly higher in patients with severe psoriasis

compared to individuals with mild course of the disease. The positive correlation was found between the concentration of FABP5 and PASI (Psoriasis Area and Severity Index) and markers of inflammation. The concentration of epidermal fatty acid binding protein was significantly lower after NB-UVB (narrow band UVB) treatment.

Conclusions:

1. Patients with psoriasis vulgaris have a different lipid profile (serum concentration of free fatty acids, ceramides, sphingosine-1-phosphate and epidermal fatty acid binding protein) in comparison to the healthy controls.
2. Serum concentration of sphingosine-1-phosphate is higher in psoriatic patients with normal weight and overweight compared to the control group, which may partly explain the predisposition of those patients in developing metabolic syndrome.
3. Total concentrations of ceramides in serum cannot be used as a marker of metabolic and hepatic disorders.
4. Correlations between the concetration of alanine aminotrasferase with selected fractions of free fatty acids, ceramides and severity of the skin disease confirm the connection of psoriasis with liver dysfunction.
5. Serum concentration of epidermal fatty acid binding protein can be used to monitor the severity of psoriasis and to evaluate the effectiveness of NB-UVB treatment.
6. Detailed examination of correlation of individual lipid fractions with the severity of psoriasis, inflammatory markers and metabolic disorders markers may contribute to the early introduction of systemic treatment of psoriasis, as well as the implementation of early prevention of concomitant diseases.