

LIPIDOMICS IN SARCOIDOSIS - PRELIMINARY REPORT

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Background: The aim of this study was to determine the use of the lipid profile of patients with sarcoidosis and compare it with healthy subjects. We assume that lipid profile of serum in sarcoidosis differs from the control subjects lipid profile.

Methods: Serum was collected from 9 patients with II stage of sarcoidosis and 5 control subjects. In our studies proton nuclear magnetic resonance (NMR) spectroscopy of lipid extracts was used. NMR spectra were collected using 400MHz spectrometer and standard one pulse sequence. Lipids were extracted from serum before analysis using modified Bligh and Dyer method and dissolved in deuterated chloroform. Thirty four NMR signals of lipid compounds were analyzed. Partial least square discriminant analysis (PLS-DA) with Pareto scaling were used to analyzed lipid profile.

Results: Univariate t-test analysis show significant differences in NMR signals of both esterified and free cholesterol and fatty acids ($p < 0.05$). For analyzing lipid profile discriminant analysis was applied. Obtained PLS-DA model consisted of three components and very good explain the data and also predict the data. Discriminant analysis correctly classified patients according to their groups for 100% of sarcoidose and 100% of control. Lipidomics indicated significant differences in phosphatidylcholine, triglycerides, fatty acids and sphigomyelin two unassigned compounds (4.94ppm, 514ppm) levels.