ABSTRACT

Determination of the concentration of α_1 – antitrypsin in the stool is a diagnostic indicator of inflammatory diseases of the small and the large intestine, especially malabsorption syndrome.

α_1 – antitrypsin belongs to the family of plasma proteins with antiproteinase effect. α_1 – antitrypsin is synthesized in liver, in small amount in macrophage and is a protease inhibitor of serine proteases sercected from neutrophils.

α_1 – antitrypsin is acute phase protein. Higher α_1 – antitrypsin values are in early phase of inflammation associated with raised CRP and other pozitive acute phase proteins. Fecal α_1 – antitrypsin clearance is a sensitive and specific marker of protein loss.

For α_1 – antitrypsin determination in stool samples ELISA method can be used. ELISA is noncompetetive immunoassay used to detect presence of antibody or an antigen in a sample.

The aim of this work was to compare two ELISA sets (Immundiagnostik and Ridascreen) used for determination α_1 – antitrypsin in the stool. Then examine stability of α_1 – antitrypsin in the stool and in extract prepared from stool in various storing conditions temperature and time. After this establish this method as routine in laboratory.

20 patient stool samples were examined to compare ELISA sets. Samples were suggested to be α_1 – antitrypsin positive, from patients suffering from inflammatory intestine diseases. Correlation between concentration of α_1 – antitrypsin measured by sets were determined by program STATISTICA 9.1. Correlational coefficient was 0.91.

For examination stability of α_1 – antitrypsin three stool samples suggested α_1 – antitrypsin positive were chosen. From each sample extracts was prepared and stored at -30 ^{o}C, 5 ^{o}C and 25 ^{o}C. One extract from each sample was measured immediately, one was stored for a day and one for eight days. At the same temperatures for the same period of time, stool samples were stored and after that extract were prepared right before measurement.

Values of α_1 – antitrypsin in stool extracts showed, that highest concentrations of α_1 – antitrypsin were in extracts prepared one day before measurement and stored in refrigerator. Results suggest that compare to producer instructions which suggest to prepare extract right before measurement, is better to prepare stool extracts one day before measurement and store them in refrigerator.

Results also show that storing stool samples for one or eight days in refrigerator doesn´t affect α_1 – antitrypsin concentrations. When stool samples were stored for eight days in refrigerator or at room temperature α_1 – antitrypsin concentrations were lowered.

Key words : α_1 – antitrypsin, stool, inflammatory diseases, ELISA