SJOEGREN'S SYNDROME DIAGNOSIS USING TWO-DIMENSIONAL TEAR PROTEINS ELECTROPHORESIS AT THE PATIENTS WITH DIFFERENT RHEUMATIC DISEASES

V. Cojocaru[1], C. Ciurtin [2], E. Pucheanu [1], F. Antohe [1]. [1]Cellular Biology, N. Simionescu Cellular Biology Institute, [2]Rheumatology, Dr. I. Cantacuzino Clinical Hospital, Bucharest, Romania

Background: Ocular involvement among patients with rheumatic diseases is frequently, the most common being secondary Sjogren's syndrome (SS) and uveitis [1]. The routine clinical diagnosis of SS remains difficult. Subjects report frequent and intense ocular surface symptoms such as discomfort and dryness. The results of the standard tests such as the Schirmer test, tear film break-up and the corneal fluorescein staining were less correlated with global clinical grade of dry eye [2, 3].**Objectives:** This study analyzes and compares electrophoretic tears patterns of normal subjects and patients with systemic lupus erythematosus (SLE), rheumatoid arthritis (RA) and other mixed connective tissue diseases. Thus, we try to introduce one fast procedure that can be used to differentiate patients with secondary SS from health individuals on the basis of tears fluid protein patterns.

Methods: Subjects were a SLE group (n=8), a rheumatoid arthritis group (n=12), a group with other mixed connective tissue diseases (n=3) and a control group comprising healthy volunteers (n=15). Tears were sampled using the Shirmer method and the sample was eluted from the filter paper in 40 microL of elution solution containing sodium dodecyl sulfate 6%, urea 4M, EDTA 4mM, beta-mercaptoetanol and bromphenol blue.Tear proteins were separated by two-dimensional electrophoresis, in the combination of isoelectric focusing with sodium dodecyl sulfate-poliacrylamide gel electrophoresis and protein bands were stained with silver.

Results: Tear proteins could be separated into more 20 bands, main components (tear-specific pre-albumin, lactoferrin, lysozyme, secretory immunoglobulin A and immunoglobulin G) being identified using a marker of molecular weight. Isoelectric points of all proteins separated were determined by comparison with isoelectric point standards. The densitometric analysis of electrophoretic lanes was performed with ordinary flat scanner. Densitometric data files were created and used for multivariate statistical procedures using Origin 6.0 statistical program.The concentration of total tear proteins varied between 1.98 microG/microL and 3.95 microG/microL. The tear protein patterns of some patients with rheumatic diseases are different in number and intensity of spots from those of healthy subjects. Thus, there were subjects with a decreased level of lysozyme and lactoferrin that can indicate a secondary SS clinical undiagnosed [4].

Conclusion: Two-dimensional electrophoretic analysis of tear protein patterns of rheumatic patients is a fast, reproducible and simple method that provides information for a precocious diagnosis of ocular involvement. Statistical evaluation can reveal whether an unidentified tear sample from a patient with a rheumatic disease can be classified as SS or not.

References:

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