AB039. Peptidyl-prolyl cis-trans isomerase A (PPIA)—a novel biomarker of multi-episodic (recurrent) ocular toxoplasmosis

Jordan Isenberg[1,2], Rubens N. Belfort[1,3], Makan Golizeh[4], Alexandre Da Silva[5], Miguel N. Burnier[1,3], Momar Ndao[4]

[1]The Henry C. Witleson Ocular Pathology Laboratory, McGill University, Montréal, Québec, Canada; [2]Department of Ophthalmology, University of Montreal, Montréal, Québec, Canada; [3]Vision Institute, Department of Ophthalmology, Federal University of São Paulo, São Paulo, SP, Brazil; [4]National Reference Centre for Parasitology, Research Institute of the McGill University Health Centre, Montreal General Hospital, Montréal, Québec, Canada; [5]Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration, Laurel, MD, USA

Background: Ocular toxoplasmosis (OT) is the most common etiology of posterior uveitis. The high incidence of macular scarring associated with OT is a leading cause of visual morbidity. Serum biomarkers of the disease would aid in its diagnosis. This work was designed as a pilot study to detect OT potential biomarkers.

Methods: Blood samples were collected from four groups of nine patients each; toxoplasmosis IgG- with no history of uveitis, non-toxoplasmosis uveitic, first episode OT, and symptomatic recurrent OT. Plasma serum was isolated and subjected to proteomics analysis using 2D gel electrophoresis (GE) and surface-enhanced laser desorption ionization mass spectrometry (SELDI-MS). Selected proteins were separated by GE and sequenced using tandem MS.

Results: Fifty markers of OT and 46 markers of recurrent disease were discovered by MS; 47% were cross-validated; 14 biomarkers were selected for verification by 1D-GE. 2D-GE analysis yielded 57 differentially expressed bands, 20 of which were excised and identified. One serum protein, peptidyl-prolyl cis-trans isomerase A, was validated to be a biomarker of multi-episodic OT by immunoblotting in patient and control samples.

Conclusions: This pilot study sought, for the first time, to elucidate plasma serum biomarkers for OT. This study demonstrates the potential for SELDI- MS and well as other MS technologies to identify novel disease biomarkers.

Keywords: Toxoplasmosis; uveitis; biomarker; diagnostic

doi: 10.21037/aes.2018.AB039

Cite this abstract as: Isenberg J, Belfort RN, Golizeh M, Da Silva A, Burnier MN, Ndao M. Peptidyl-prolyl cis-trans isomerase A (PPIA)—a novel biomarker of multi-episodic (recurrent) ocular toxoplasmosis. Ann Eye Sci 2018;3:AB039.