PULSUS
WWW.PULSUS.COM

Diagnostic efficacy of Tsolp-27 recombinant antigen for the serological diagnosis of neurocysticercosis in Central America and sub-Saharan Africa

Fernando Salazar-Anton[1], Noemia Nhancupe[2] and **Johan Lindh[3]**
[1]National Autonomous University of Nicaragua, Nicaragua
[2]Eduardo Mondlane University, Mozambique
[3]Uppsala University, Sweden

Cysticercosis is a disease caused by larval stages of *Taenia solium (T. solium)*, which is considered a public health problem in many low-income countries in Latin America, Africa, and Asia. This illness is now also emerging in some high-income nations as a result of travel to or immigration from endemic areas. Accurate diagnosis of neurocysticercosis (NCC) requires costly neuroimaging techniques or commercial enzyme-linked immunoeletrotransfer blot (EITB), which are seldom affordable for people in endemic countries. Hence, new low-cost diagnostic methods offering high sensitivity and specificity are needed. The aim of the present study is to identify, express and evaluate the antigenicity of Tsolp-27 in human sera from Nicaragua and Mozambique. Immunogenic Tsolp-27 protein from *T. solium* cysticerci were identified by two-dimensional electrophoresis Western blotting using human sera from Nicaragua and Mozambique confirmed to be positive for NCC by computer tomography. The crude Tsolp-27 antigen was sequenced by liquid chromatography-mass spectrometry. The gene corresponding to Tsolp-27 was cloned, expressed, purified and evaluated serologically. We evaluated the recombinant antigen Tsolp-27 in relation to commercial and in-house Enzyme-Linked Immunosorbent assay (ELISA), Western blot-TsolHSP36 and compared them with the EITB that was regarded as the gold standard method. The analyzed serum samples were obtained from 265 epileptic patients from Nicaragua and Mozambique, 31 of them were confirmed to be NCC positive by EITB. The serological analysis of Tsolp-27 recombinant antigen in Nicaragua and Mozambique showed a sensibility and specificity of 86.20 % and of 97.24% respectively. Furthermore, considering the simplicity and low-cost of this test, it might be preferable as a diagnostic method in poorly equipped laboratories in endemic countries. The recombinant protein is now available and we expect to be useful in the diagnosis of cysticercosis not only in Central and Sub-Saharan Africa, but also in other endemic regions in the world.

fernando_salazar1@hotmail.com