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PARASSITOLOGIA

TOXOPLASMA GONDII SEROTYPING BY AN HOMEMADE ELISA TEST

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INTRODUZIONE

Toxoplasma gondii is a protozoan responsible for Toxoplasmosis in humans. The severity of clinical manifestations is often related to the different parasite genotype: 3 clonal lineage of T.gondii and different recombinant strains with variable global distribution. In Italy, to date, no studies have been carried out to define the circulating strains and their correlation with the various clinical manifestations. The aim of the study is to detect in human sera antibodies against amino acid sequences of antigens, that characterize the 3 main genotypes (I-II-III) by an ELISA test (Enzyme-Linked Immunosorbent Assay). This test would be able to discriminate between the type II strain (frequent in Europe) and the other strains (I-III and atypical) and therefore could be used for an epidemiological investigation.

METODI

In our retrospective study, 59 patient sera previously tested with the VIDAS Toxo IgG II test (Biomerieux - Mercy l ' Etoile - France) and LIAISON® XL Toxoplasma IgG and IgM (DiaSorin-Saluggia-Italy) were selected from Pavia and Negrar laboratory: 35 positive and 24 negative as control. The execution of ELISA test and the choice of peptides were based, with some modifications, on the protocol developed by Kong J.T. et al 2003. KLH (hemocyanin from Megathura crenulata) conjugated peptides have been syntetised by PRIMM (Milano- Italy).

RISULTATI

All 24 control samples were negative. A cut-off was established as the mean OD of negative control +/-2 SD. We found: 14/35 (40%) type II, 11/35 (31.4%) atypical strain, and 10/35 (28.6%) type I/III. In Italian patients Type II strain account for 78.6% (11/14) of the cases, followed by atypical (2/14, 14.3%) and I/III (1/14, 7.1%) strain. In African patients, II type strain was found in 8.3% (1/12) of the sera, differently from atypical serotype and type I/III, 50% (6/12) and 41.7% (5/12), respectively. In South American patients, II strain was absent, whereas the serotype I/III and atypical were detected both in 50% (3/6). Three out the 35 positive patients were of unknown nationality.

CONCLUSIONI

These preliminary results showed that this new Elisa test has a good ability to discriminate type II, type I-III and atypical strains. Furthermore, the test does not require invasive sampling and expensive equipment. In our population, atypical and I/III serotypes were prevalent in both African and American subjects. The new homemade ELISA test will be used in a second prospective phase of our research in order to evaluate a possible correlation between the strains of Toxoplasma and the clinical outcome.