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Abstract

This study present the detection of total Ig, IgG, IgG isotypes, IgA and IgM antibodies against crude somatic antigen from young adult female *Angiostrongylus cantonensis* by enzyme-linked immunosorbent assay (ELISA). Sera from 9 parasitologically confirmed angiostrongyliasis, 98 clinical eosinophilic meningitis (EOM), 27 healthy control and 71 other helminthiases sera were examined. The mean ELISA optical densities (ODs) and standard deviation (SD) at 490 nm of angiostrongyliasis, EOM and healthy controls were shown as following : total Ig were 0.460±0.020, 0.538±0.210 and 0.219±0.063 respectively, IgG were 0.601±0.360, 0.599±0.350 and 0.155±0.063 respectively, IgA were 0.094±0.080, 0.110±0.110 and 0.045±0.032 respectively, IgM were 0.090±0.050, 0.218±0.200 and 0.113±0.058 respectively, IgG_1 were 0.880±0.070, 0.669±0.610 and 0.106± 0.038 respectively, IgG_2 were 0.789±0.460, 0.703±0.060 and 0.137±0.081 respectively, IgG_3 were 0.065±0.050, 0.067±0.100 and 0.020±0.014 respectively and IgG_4 were 0.341±0.230, 0.312±0.490 and 0.026±0.025 respectively. The mean ELISA ODs of total Ig, IgG, IgA and IgG_{1-4} isotypes anti-*A. cantonensis* antibodies of angiostrongyliasis group and EOM group were statistically significant higher than healthy control group ($P<0.001$) while no statistically significant between angiostrongyliasis and EOM ($P>0.001$) was shown. The mean ELISA values of the specific IgM antibody between angiostrongyliasis and healthy control groups were not statistically significant ($P>0.05$) while the values between EOM and healthy control groups was statistically significant ($P<0.05$). The mean ELISA OD values of specific IgG_1, IgG_2 and IgG_4 antibodies were high but poor for IgG_3, IgM and IgA. The IgG_1 antibody demonstrated the highest sensitivity for angiostrongyliasis and EOM groups. The antibodies- cross reactivity against *A. cantonensis* antigen were also shown in cysticercosis, trichinosis, strongyloidiasis, capillariasis, gnathostomiasis, paragonimiasis, opisthorchiasis and fascioliasis serum samples. Of different immunoglobulin types (total Ig, IgG, IgG_{1-4}, IgA and IgM) in the EOM group, the difference of antibody reactivity values between weeks from the onset of disease were not significantly difference ($P>0.05$).

This present study described the first study of the use of ELISA and subclass-specific reagent in the measurement of antibody patterns in parasitologically confirmed angiostrongyliasis and EOM groups. The levels of antibody subclasses are possibly related to the unraveling of the distinct immune response to the parasite. This test might be used in serological assay, however the purified-specific *A. cantonensis* antigen need to be tested.