

Western blotting method for diagnosis of hydatid cyst antigens

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Background and Aims: Hydatidosis is one of the most important and commonly found parasitic zoonoses in both humans and different animals, which is caused by the cestode helminthes *Echinococcus granulosus*. The diagnosis of the disease is primarily based on imagery techniques. Thus, highly sensitive and reliable serologic methods are required to confirm the diagnosis. Antigen B (AgB) and protoscoleces antigen (PSC Ag) were purified as two specific parasitic antigens and then evaluated against sera from two groups of hydatidosis and non-hydatidosis (control) subjects using the western blotting method in order to identify the most sensitive and specific antigen.

Methods: Sera samples were taken from 22 patients under operation for hydatid cyst. 16 patients were also included as control group. Cyst fluid and protoscoleces were extracted and partially purified in a protein A column. Using SDS-page, subunits of the cyst fluid antigen, AgB, and PSC Ag were identified. Finally, the subunit were transferred from gel to nitrocellulose membrane in a western blot test and reacted with hydatid and control sera in order to assess their sensitivity and specificity.

Results: Three antigens were identified as the subunits of AgB while 10 antigens were identified as PSC Ag. The sensitivity and specificity of AgB subunits in the western blot test were 77% and 100%, respectively. None of the PSC Ag subunits had both high sensitivity and high specificity concurrently.

Conclusions: It has been shown by the western blot test that the AgB 8/12 and 16 kDa subunit components had high diagnostic sensitivity and specificity level (81% and 100% respectively) and that they could presumably assist the physician in his pre and post operation diagnosis of hydatid cyst.

Keywords: Hydatid cyst; Western blotting; AgB; Protoscoleces