

Post-immunization immunohistochemical expression of Caspase 3 and p53 apoptotic markers in experimental hydatidosis.

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ABSTRACT

The aim of this study was to investigate post-immunization apoptotic changes in experimental hydatidosis, using Caspase 3 and p53 immunohistochemical markers. Two groups of rabbits were immunized with a crude antigen (group 1) or a partially purified antigen (group 2) and were compared to an infected non-immunized control group. More effective immune responses were obtained in group 2 than group 1, signified by fewer and smaller cystic lesions and more severe destructive changes. Normal growth of cysts was attained in the control group, with no expression of apoptotic markers. Significantly higher expression of Caspase 3 and p53 were observed in group 1 compared to group 2, as indicated by OD and area percentage, respectively (Group 1 Caspase 3: 0.89 ± 0.21 , $93.5\% \pm 6.2$; Group 1 p53: 0.46 ± 0.18 , $53.26\% \pm 11.6$; Group 2 Caspase 3: 0.52 ± 0.15 , $49.23\% \pm 11.7$; Group 2 p53: 0.19 ± 0.4 , $18.17\% \pm 7.3$). Vaccine-induced immune responses and cellular damage may underlie the expression of apoptotic markers that appeared to result in a degenerative and atrophic course of action upon immunization. The results of the current study emphasize the importance of immunization for the stimulation of protective immune responses and in preventing mechanisms of evasion to ensure normal cell growth. A cost/benefit control program that implements proper vaccine preparations should be further assessed for complete elimination of severe infections in endemic areas.

Key words: Experimental hydatidosis – Caspase 3 – p53 – Apoptosis.