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Research Article

Study of Protoscolicidal Effects of Hypertonic Glucose on Protoscolices of Hydatid Cyst at Different Concentrations and Exposure Times

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Surgical operation is the treatment of choice for hydatid cyst. To date, many protoscolicidal substances have been used for inactivation of hydatid cyst contents but most of these compounds may produce several side effects. The aim of this study was to evaluate the protoscolicidal effects of hypertonic glucose on protoscolices of hydatid cyst at different concentrations and exposure times. Protoscolices were obtained aseptically from the livers of slaughtered sheep at Qazvin abattoir, Iran. Protoscolices were exposed to different concentrations of hypertonic glucose (10%, 15%, 20%, 25%, 30%, 40%, and 50%) at different times (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, 30, 40, 50, and 60 min). Viability of protoscolices was evaluated by 0.1% eosin and the movement of protoscolices flame cells. The highest protoscolicidal effect (100%) of hypertonic glucose was obtained at concentrations 40% and 50% following 40 and 20 min exposure times, respectively. Some protoscolicidal agents show a variety of dangerous complications such as biliary tract fibrosis and liver necrosis; however, hypertonic glucose especially at a concentration of 40% may demonstrate less side effects compared with glucose 50%. Further in vivo investigations are suggested.