

SCOLICIDAL EFFICACY OF CHLORHEXIDINE AND CONTRAST AGENTS IN HEPATIC ECHINOCOCCOSIS**Sultonzoda Nizomiddin Doniyor ugli**

Bukhara State Medical Institute, Uzbekistan, Bukhara

Research objective. To evaluate the scolicidal activity of chlorhexidine and contrast agents against echinococcal protoscoleces and to assess their potential use for local sanitation of echinococcal cavities.

Methods. An in vitro experimental study was performed to evaluate the viability of echinococcal protoscoleces following exposure to scolicidal agents. Protoscoleces were obtained from hydatid cyst fluid collected under sterile conditions during surgical treatment of hepatic echinococcosis. Samples with confirmed protoscolex viability were selected for analysis. The protoscoleces were exposed to 0.05% chlorhexidine solution and a 25% contrast agent solution for standardized exposure intervals. Each sample was processed in controlled laboratory conditions to ensure reproducibility. Viability assessment was carried out using light microscopy and vital staining techniques. Protoscoleces were evaluated based on motility, preservation of morphological structure, tegument integrity, and staining response. The percentage of nonviable protoscoleces was calculated and compared between the tested solutions.

Results. Both tested agents demonstrated measurable scolicidal activity against echinococcal protoscoleces. However, chlorhexidine exhibited markedly superior efficacy compared to the contrast solution. More than 80% of protoscoleces exposed to 0.05% chlorhexidine showed irreversible structural damage, complete loss of motility, and staining characteristics indicative of nonviability. Microscopic evaluation revealed progressive destruction of the tegument, disorganization of internal structures, and pronounced deformation of the scolex. In many samples, membrane rupture and leakage of cellular contents were observed, confirming severe parasite injury. Degeneration of the germinal elements occurred rapidly after exposure, with subsequent collapse of protoscolex architecture. The 25% contrast solution also produced detectable degenerative changes, including reduced motility and partial structural alterations. However, a considerable proportion of protoscoleces retained partial viability, indicating a weaker scolicidal effect compared to chlorhexidine. Overall, chlorhexidine demonstrated a fast-acting and consistent parasiticidal effect, suggesting its high potential as a local scolicidal agent in the management of hepatic echinococcosis.

Conclusion. Chlorhexidine demonstrates pronounced scolicidal properties and can be effectively used for local sanitation of echinococcal cavities. Its use may enhance the radicality of surgical and endoscopic treatment of hepatic echinococcosis and contribute to the prevention of recurrence.