



## Frequency of Human Hydatidosis of People Referring to the Health Centers in Sistan, Southeastern Iran

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### Dear Editor-in-Chief

Hydatidosis is one of the most prevalent zoonotic diseases in the world, causing major economic and healthy problems. The agent of the disease is *Echinococcus granulosus*, a parasite of cestodes (1). The disease is established through ingestion of the parasite's egg with various factors such as vegetables, air, soil, contact with dog, etc (2). Hydatid cyst establishes generally in the liver (more than 65% of the cases) and lungs (25% of the cases) in intermediate hosts, however, other organs can be involved, including heart, kidneys, spleen, bone, eyes, muscles and central nervous system (3). The aim of this study was to conduct a sero-epidemiological survey in Sistan, Southeastern Iran to detect the rate of human hydatidosis using ELISA test. The optimal serological test for the diagnosis of hydatidosis is ELISA. Specifically, among parasite's antigens, AgB resistant to 100 °C temperature is the most prominent test, which has been used for the diagnosis of hydatid cyst (4). Sistan Province includes 5 counties of Zabol, Zahak, Hirmand, Nimrooz and Hamoon and the population is 400,000 according to the last census in 2016.

Totally 830 blood samples were collected from subjects referred to different health centers in

urban and rural regions of Sistan in 2018. Random cluster sampling was applied to select the participants.

The study was approved by the Ethics Committee of Zabol University of Medical Sciences, Zabol, Iran. Code of ethics: IR.ZBMU.REC.1397.055 Research code: 55.

Demographic characteristics such as age, sex, job, locality, education level, keeping the dog, vegetable consumption, etc. were detected as well. Samples after collection were transferred to the Laboratory of Medical Parasitology, Zabol University of Medical Science, and subsequently all sera were examined by AgB-ELISA test in the Dept. of Medical Parasitology, School of Public Health, Tehran University of Medical Sciences, Iran. Antigen B was prepared from the hydatid cyst fluid of *E. granulosus*, collected from cysts developed in the liver of sheep as previously described (4). ELISA test was performed as mentioned already (5, 6). Altogether 30 samples of sera from healthy volunteers had been collected during the previous studies were examined to set the cut-off. Cut-off was calculated as mean + 3 SD. (5, 6). Data analysis was conducted using SPSS 18 software (Chicago, IL, USA).



The result of seroprevalence study of human hydatidosis was detected as 0% (0 cases) by ELISA test in Sistan Province. This is the first report of human hydatidosis infection in the general population in Sistan. According to a study infection rate of hydatidosis in dogs of Sistan and Balouchestan was 3.3%, which is the lowest rate in the whole country (7). A survey of gastrointestinal helminth of stray dogs in Zabol City showed no case of *Echinococcus granulosus* (8). The prevalence of hydatid cyst in Shahrebabk was 1.1%, this city has a warm, semi-arid climate, with an average annual rainfall of 195 mm. *Echinococcus* egg are not able to grow in these climate conditions (9). The seroprevalence of human hydatidosis was 0% by AgB-ELISA Test in the region. With attention to the weather conditions and lack of adequate moisture in Sistan region and thus the lack of essential growth condition for egg parasite, it is expected that the prevalence of this disease is minimized.

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## Conflict of interest

All authors declare that there is no conflict of interest.

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