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Review Article

**A STUDY OF HYDATID CYST CASES IN IRAN, A  
SYSTEMATIC REVIEW****Ehsan Faghiri<sup>1\*</sup>, Zahra Noori<sup>2</sup>, Mohamad Reza Havasian<sup>3</sup>**<sup>1</sup>Doctor of Veterinary Medicine, Zabol University, Zabol, Iran.<sup>2</sup>Resident of Veterinary Surgery in Ferdowsi University of Mashhad, Mashhad, Iran.<sup>3</sup>Department of Periodontics, School of Dentistry, Ilam University of Medical Sciences, Ilam, Iran.**Abstract:**

*Hydatid cyst is an infectious disease common between humans and animals which is spread worldwide and has been known to humans since old times. Different accounts have been presented on the individual characteristics of people suffering from hydatid cyst, clinical course, different treatment and diagnosis methods, and its recurrence. The hydatid cyst infection exists in various parts of the world, and Iran is on the endemic belt of the disease, in a way that different rates have been reported in different studies. Depending on climate conditions, social customs, nutritional status, and the amount of contact with canidae animals, incidence rates of up to 10% have been reported in human populations for these diseases. The present research is a systematic review study. In order to find the studies conducted in Iran, the articles in national and international journals and dissertations available on Magiran, Iranmedex, SID, Google-scholar, and PubMed databases were used, and more than 100 articles were found, among which 14 articles related to the topic that met the criteria for entering the study were investigated. The data collected were analyzed by SPSS version 18 through using descriptive-analytical statistics and chi-squared statistical test ( $X^2$  test). The results of the study showed that infection rate in the liver of cows to hydatid cyst is 62%, while lung infection in native and hybrid breeds in the city of Baneh is 7.75%. In rural area of Tehran, 437 person, 276 women and 161 men, in the age range of 4-76 years of age were studied, and one person was positive and seven persons were suspected to the disease. The results of the present study showed that, although the infection rate of hydatid cyst in urban and developed parts of Iran is at an acceptable and satisfactory level, the statistics in lesser-developed areas is endemic and alarming and deserves paying more attention and developing organized plans to control the disease.*

**Keywords:** Hydatid Cyst, Systematic Review, Iran,**Corresponding Authors:****Ehsan Faghiri,**

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## INTRODUCTION:

As carnivorous animals, mammals such as dogs and cats are considered to be the final host for many of the known pathogenic parasites. Many of these diseases can be transmitted to humans, and it is a major health problem in developing countries [1, 2]. One of the important and common diseases transmitted from canidae animals to humans and other animals is the larval stage echinococcus-granulosus, which is known as hydatid cyst. This disease is common in Mediterranean regions. The infection rate for this cestode varies across different regions of the world. This disease is endemic in Iran and has great medical, economic, and health importance [3]. The hydatid cyst infection exists in various parts of the world, and Iran is on the endemic belt of the disease [4], in a way that different rates have been reported in different studies [5, 6]. Depending on climate conditions, social customs, nutritional status, and the amount of contact with canidae animals, incidence rates of up to 10% have been reported in human populations for this diseases [7]. It is very common in Australia, southern Africa, Mediterranean countries, New Zealand, and Asia [8]. The cysts produced in the human body is often located in the liver and lungs, and there have been reports on the presence and formation of the cyst in other organs of the body [9]. Hydatid cyst is an infectious disease common between humans and animals which is spread worldwide and has been known to humans since old times, such that Hippocrates has mentioned it [10]. Direct contact with infected dogs, especially children's contact with pet dogs, seems to be the most important source of human infection. Contaminated water and vegetables also have an important role in human infection [11]. The infection rates to echinococcus-granulosus among stray dogs have been reported to be 5 to 49 % in different parts of Iran. Although there are numerous accounts on the incidence status, spread, and transmission of different types of intestinal parasites, especially echinococcus-granulosus, in humans and animals in different parts of Iran for particular time periods, there is not a precise body of information on the general spread of this disease in an aggregated form. Thus, the present study investigated cases of hydatid cyst in Iran.

## MATERIALS AND METHODS

The present research is a systematic review study. In order to find the studies conducted in Iran, the articles in national and international journals and dissertations available on Magiran, Iranmedex, SID, Google-scholar, and PubMed databases were used, and more than 100 articles were found, among which 14 articles related to the topic that met the criteria for

entering the study were investigated. The infection rate for this type of cestode is different in different parts of Iran, and to better analyze and further study the issue, Iran was divided into 5 regions of north, south, west, east, and center. The data collected were analyzed by SPSS version 18 through using descriptive-analytical statistics and chi-squared statistical test ( $X^2$  test)[12, 13]. Moreover,  $P < 0.05$  was considered as the significance level.

## FINDING

The results of the study showed that infection rate in the liver of cows to hydatid cyst is 62%, while lung infection in native and hybrid breeds in the city of Baneh is 7.75%. In rural area of Tehran, 437 person, 276 women and 161 men, in the age range of 4-76 years of age were studied, and one person was positive and seven persons were suspected to the disease. In the city of Khoy, 1553 slaughtered water buffalos were examined, with the infection rate being 1.54%. In Charmahal Bakhtiari, of the 2524 persons examined, the infection rate was 4.8%. In Yazd, of the 401 camel bodies examined, 26.7% were infected to hydatid cyst. In Torbat Heydarieh, the examination of 235509 slaughtered animals showed that 20% of the investigated animals were infected to hydatid cyst.

## DISCUSSION:

The echinococcus-granulosus parasite is of great health and economic importance in Iran, due to the suitable and favorable climate and the popularity of animal husbandry. According to Eslami *et al.* (1991), this parasite is the most common intestinal worm in Iran [14]. In the past studies, the general incidence rate echinococcus has been 27.4%, being a lot lower in comparison with Iraq (79.1%), and almost the same as the incidence rate in India (33.2%)[15]. Thus, the present study was conducted to investigate the cases of hydatid cyst in Iran. This study shows that infection rate of echinococcus-granulosus has not changed in comparison with the past, which reflects the fact that control plans for hydatidiosis have not been effective. Also, the incidence rate of hydatidiosis is different in different parts of Iran. In Dehkordi *et al.* (2012), a study conducted to investigate the incidence rate of hydatid cyst in slaughtered cows in slaughterhouses of the city of Baneh, the results showed that the infection rate to hydatid cyst in the liver of cows was 62%, and the infection rate in the lungs was 7.75%, the important point being the amount of infected livestock traffic in Iran and abroad. Also, this amount of infection causes the liver to be removed from slaughter cycle and an economic loss as the consequence of the removal of liver from animal husbandry industry

[16]. In Farokhzad et al. (2006), which was conducted to do a seroepidemiologic study of hydatid cyst in rural areas of Shemiranat, health plans seem to have been effective, based on the percentage of infections. The infection rate of the disease in this area is now alarming. Also, living in the vicinity of a modern urban lifestyle of the inhabitants of this area can be one of the reasons for the low incidence rate of the infection [17]. In Mohaghegh et al. (2011), conducted to study infection rate to hydatid cyst in slaughtered livestock in Torbat-e Heydarieh, the infection rate to hydatid cyst among sheep, goats, cow, and camel was 93.08%, 2%, 6.9%, and zero percent, respectively, which shows that, given the high rate of infection to hydatid cyst among livestock, especially sheep, it is necessary to pay more attention educational and health issue in order to prevent human infection [18]. In Sarkari et al. (2007), a Human cystic echinococcosis in Yasuj: A survey of ten years, the results showed that, given the fact that hydatid cyst is a native disease in the area, no significant change in the trend of the disease has occurred over the past few years, with the annual cases of infection in the area in higher than other areas in the country [19]. Therefore, it is necessary that effective measures be taken to control and prevent this disease.

### CONCLUSION:

The results of the present study showed that, although the infection rate of hydatid cyst in urban and developed parts of Iran is at an acceptable and satisfactory level, the statistics in lesser-developed areas is endemic and alarming and deserves paying more attention and developing organized plans to control the disease.

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