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Original Article

An Analysis of Hydatid Cyst Surgeries in Patients Referred To Hospitals in Khorram-Abad, Lorestan during 2002-06

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Abstract

Background: Echinococcosis or hydatid cyst (HC) is considered as one of the major parasitic infections in Iran that causes many health problems and economic losses in communities. The aim of this study was to determine the prevalence of HC in patients referred to surgery wards of three hospitals in Khorram-Abad, the center of Lorestan province in South-West of Iran from 2002 - 2006.

Methods: Totally, 64513 medical records of patients referred to surgery wards of Shohadaye Ashayer, Tohid and Taamine Ejtemaee hospitals in Khorram-Abad Lorestan were studied. These patients had gone under surgical operations for different reasons. Among these medical records, 43.7% belonged to Shohadaye Ashayer, 8.2% to Tohid and 18.1% to Taamine ejtemaee hospitals.

Results: Cysts were found in liver and lung in 61.5% and 20.5% of cases, respectively. In addition, cysts were found in brain, muscle, kidney eye and peritonea in the remaining 18% of cases.

Conclusion: A very low level of knowledge about hydatid disease was found in the community. The mean age of the patients was 40.2 years and the highest rate of infection with HC was observed in women. Further studies are required to find the etiologic factors of H.C in Khorram-Abad Lorestan-Iran.

Keywords: *Hydatid cyst, Liver, Echinococcosis, Iran*

Introduction

Human cystic echinococcosis (CE) is a chronic zoonotic disease that results from infection with the larval stage of the dog tapeworm, *Echinococcus granulosus*. The disease is highly endemic in most of the countries of the Mediterranean basin, including North Africa and the Middle East (1, 2). Also it has been reported as an important public health problem in Jordan, Libyan Arab Jamahiriya, Morocco, Tunisia, and Israel (3– 7). The annual incidence rates of diagnosed human cases/100,000 inhabitants vary widely (8).

Cystic echinococcosis is endemic in Iran, and is maintained in three distinct cycles, a livestock/dog domestic cycle, a desert cycle between dogs and camels, and a cylvatic cycle between wild carnivores and wild ruminants (9).

The *E. granulosus* cycle is typically a dogsheep cycle and implies contamination of a sheep through the feces of an infected dog. Humans accidentally take the place of the sheep in the parasite cycle through close contact with an infected dog (5). Humans are usually a "dead-end" for the parasite (6). Serological methods, used for the diagnosis of hydatid diseases are direct haemagglutination, latex agglutination, immunoelectrophoresis, skin tests and ELISA (7). Radiological imaging methods such as computed tomography (CT) and MR imaging play an important role in the diagnosis (10, 11).

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Liver is the main organ affected in human, followed by lung tissue; however, there is usually no direct parasitological evidence for the presence of cysts in organs or tissues (12).
Human cases are constantly reported from different medical centers of Iran (13- 24). For instance, in similar studies was performed by using data on patient's referred to Milad and Taleghani hospitals in Tehran, 78 and 43 cases of H.C were reported respectively (17, 21).
According to other studies, the incidence rate of H.C in East-Azerbaijan, Najaf-Abad, Kurdistan and Khuzestan were 259, 159, 43 and 17 cases respectively (13, 18, 19, 24). In the present study the hydatid cysts were analyzed in 3 hospitals during the 5 yr period in Khorram-Abad the center of Lorestan province in South- West of Iran.

Materials and Methods

The study was carried out at Shohadaye Ashayer, Tohid and Taamine Ejtemaee which are general hospitals in Khorram-Abad, the center of Lorestan province in South-West of Iran.
People from different parts of the province are referred to these hospitals for general surgery. This study reviewed inpatient records from all sites for the period September 2002-October 2006. None of the records were kept on computer; therefore, the medical records were searched manually. In this descriptive study, 64513 medical records of patients were studied. These patients were operated for different reasons. Medical records of patients who had been hydatid cyst (HC) positive were collected and analyzed.

Results

Thirty nine HC positive were observed among studied medical records. Of these patients, 17 (43.4%) were male. The highest rate belonged to housewives (housewives 20, students 9, officers 5, farmers 4, others 1). There was no relationship between incidence of HC and age of patients. Results analysis with chi-square revealed that incidence rate of HC in women's liver was higher then the other organs. ($P< 0.05$).The youngest patient was 5 and the oldest was 85 yr old. (Table 1)
The most common involved organs were liver (61.5%) and lung (20.5%), respectively (Fig. 1).
The prevalence of HC surgery in Shohadaye Ashayer was higher than the other hospitals (Table 2).

Table 1: Age of patients infected with H.C

Age (yr)	Number of patients	Males	Females
≤10	3	2	1
11-20	6	3	3
21-30	6	2	4
31-40	6	4	2
41-50	3	2	1
51-60	6	2	4
61-70	5	-	5
>70	4	1	3

Table 2: Annual clinical incidence of H.C in 3 hospitals

Hospitals	Year	population	No.	Present
	2002	3876	6	0.15
Shohadaye	2003	8240	7	0.08
Ashayer	2004	8249	10	0.12
	2005	9770	4	0.04
	2006	7844	5	0.06
	2002	3867	1	0.02
	2003	3711	2	0.05
Tohid	2004	3650	1	0.02
	2005	3054	1	0.03
	2006	599	-	----
	2002	1544	-	----
Taamine	2003	1702	-	----
Ejtemaee	2004	3044	1	0.03
	2005	4004	1	0.02
	2006	2943	-	----

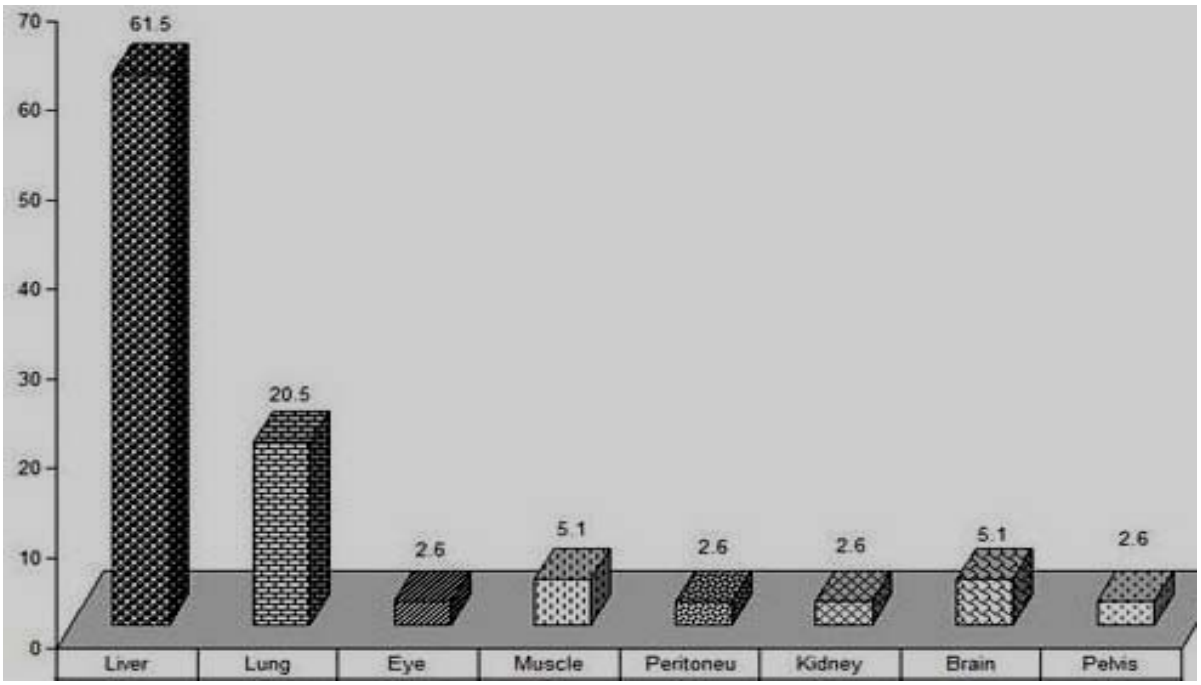

Fig.1: Involvement of different organ (n=39)

Discussion

Hydatid disease is one of the major parasitic problems in human and livestock in Iran (17, 20-24). This multi- host parasite is prevalent all over the country particular in the west and South-west of Iran (9, 15, 16, 19, 22, 23). Annually the economic loss in livestock due to this parasite is significant.

According to published data, Iran is one of the hyper endemic areas with human infection rate of more than 1% of total population (15- 16). Humans are intermediate hosts and are being exposed to the parasite by fecal-oral and hand-to-mouth spread ways (14).

In the present survey, most of the suffering women from HC were housewives. This result is in consistent with study in Taleghani Hospital of Tehran during 1994-2003 (17), in East-Azerbaijan province during 1995-2002 (18) and in Kurdistan Province during 5 yr period (19) study. According to the results of these studies, females were found more infected with HC (53.9 %) than males (46.1%) (17-19).

Our study showed that different organs were involved with HC but liver is the most affected organ in both men and women. During studies carried out in different provinces of Iran (Markazi, Tehran, Isfahan, Kurdistan, Khuzestan) women had more hydatid surgeries than men and the most affected organ was liver (17, 20- 24). However, the result of Fallah *et al.* in East-Azerbaijan showed that the predominant cysts in men were higher than women and cysts were located mostly in liver and lung, respectively (18).

In conclusion, retrospective hospital surveys have been criticized for not providing precise estimates of disease incidence as not all hospitals in a particular region or district are included in the study, and the population is calculated rather than based on actual census. Furthermore, retrospective hospital survey data on human CE cannot give an accurate picture of the prevalence of infection. A certain number of cases are not seen in hospitals because the infection is asymptomatic or does not require surgical intervention, and some data are not avail-

able in the files. However, despite such limitations, careful examination of hospital records provides a useful indication of infection expressed as annual rate of hospital cases.

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