

AN EPIDEMIOLOGICAL STUDY ON HUMAN HYDATID DISEASE IN THI-QAR PROVINCE DURING (2000-2005)⁺

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Abstract

Hydatid disease is endemic in Thi-Qar province. A total of 349 surgical proven cases were studied in Thi-Qar. The infection rate was higher in females 229(65.8%) than the males 119(34.19%). The ages of the patients varied from one year to 80 with high peak in (30-40) year's age group. The most affected organ is the liver 269(77%) followed by kidney 47(13.4%) and other organs 33(9.45%). The incidence of surgical cases is estimated for entire Thi-Qar province. It was 4.8 cases per 100000 (medium incidence level) per year.

المستخلص:

يعد مرض الاكياس العدرية من الامراض المتوطنة في محافظة ذي قار. لقد تمت دراسة 349 حالة مشخصة جراحيا، أذ وجد ان نسبة الخمج بالاثاث 65,8% اعلى من الذكور 34,19%. تراوحت أعمار المرضى المخمجين من عمر سنة واحدة لغاية الثمانين وكانت اعلى نسبة اصابة هي في الفئة العمرية 31-40 سنة.

ان اكثر الاعضاء تأثرا بالاصابة هو الكبد 77% وتليه الرئتان 13,4%, اما بقية الاعضاء الاخرى فكانت نسبة الاصابة بها 9,45%. علما ان اعلى نسبة اصابة كانت في مركز المحافظة.

Introduction

The cystic hydatid disease known as hydatidosis or cystic echinococcosis is a cyclozoonotic disease. It is one of the world most geographic widely spreader resulting from the development of large cysts in the viscera and other organs of herbivorous animals and human[1].

The disease is caused by larval stage (metacestode) of taeniid tape worm species belongs to the genus: *Echinococcus*, order: Cyclophyllidea, class: Cestoda. Hydatid disease is considered as one of the most serious helminthic infections of human in the world, caused by larval stages of two cestode species *Echinococcus granulosus* and *E. multilocularis* cause alveolar echinococcosis, another third type *E. vogeli* that causes

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poly cystic echinococcosis [2]. Cystic echinococcosis is endemic across Arab North Africa from Morocco to Egypt and in all the west Asian. Levant countries of the Middle East which include Jordan, Palestine, Syria and Lebanon is highly endemic with disease [3, 4]. Hydatidosis is endemic disease in the southern of Iraq including Thi-Qar province [5].

Materials and Methods

A total of (349) surgically confirmed cases of human hydatidosis were studied between 2000-2005 in Thi-Qar province. These cases which were registered at the main Thi-Qar hospitals that analysis according to age as groups 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80 years, sex (male and female), sit of infection and residency.

The distribution of the surgical cases and the locality of the cysts in different organs of the human body (liver, kidney, and other sites) were investigated.

The geographical distribution (Medical geography) of (349) surgical cases scattered in the major region of Thi-Qar province estimated in order to evaluated the endemic of the disease.

Results

A total of (349) surgically proven hydatidosis patients were studied in the Thi-Qar during the period between "2000-2005". The distribution of these cases according to the sex and age is shown in (Table, 1).

Table (1): Annual surgical cases of human hydatidosis in Thi-Qar (2000-2005)

Year	Total cases	sex		Age group (years)							
		Male	Female	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
2000	85	16	69	6	13	21	16	11	8	7	3
2001	77	27	50	3	13	19	16	11	7	6	2
2002	61	28	33	2	11	15	11	8	6	6	2
2003	37	15	22	1	4	9	8	6	5	3	1
2004	89	33	56	5	10	23	17	14	10	8	2
Total	349	119	230	17	51	87	68	50	36	30	10

Table (2), shows that the females have higher infection rate 65.9% than the males 34%. Table (3) shows the distribution of infection in different body organs. Among which liver ranks first 77.06% followed by kidney 13.46% and other organs 9.47%.

Table (2): Distribution of the hydatidosis cases according to the gender and age

Age	Number of patients %		Total
	Male	Female	
1-10	7(5.88%)	10(4.35%)	17(4.87%)
11-20	15(12.6%)	36(15.65%)	51(14.6%)
21-30	29(24.37%)	58(25.22%)	87(24.9%)
31-40	24(20.17%)	44(19.13%)	68(19.4%)
41-50	16(13.45%)	34(14.78%)	50(14.3%)
51-60	14(11.76%)	22(9.59%)	36(10.3%)
61-70	10(8.4%)	20(8.7%)	30(8.5%)
71-80	4(3.36%)	6(2.6%)	10(2.6%)
Total	119(34.1%)	230(65.9%)	100%

Table (3): The distribution of hydatid cyst in different organs of the body in present study

Organ	Positive infected cases	%
Liver	269	77.08%
Lungs	47	13.47%
Kidney	6	1.72%
Ovary	11	3.15%
Liver & Spleen	4	1.15%
Spleen	3	0.86%
Testes	1	0.29%
Peritoneal	5	1.43%
Brain	3	0.86%
Total	349	100%

The geographical distribution of surgical cases in Thi-Qar is shown in (Table, 4). The majority of patients resident at Thi-Qar center followed by Al-Shattrra, Al-Reffiae, Suq AlShuch and Al-Jebaish.

The average rate of entire Thi-Qar province through "2000-2005" was 4.8 cases per 100000 populations (medical incidence level). The annual cases rate of Al-Jebaish was 6.2 per 100000 followed by Al-Reffiae , Suq Al-Shuch, Thi-Qar center and Al-Shattrra, 5.5, 5.3, 4.9, and 4 respectively.

Table (4): The geographical distribution of surgical cystic echinococosis admitted to the main Thi-Qar hospital (2000-2005)

Area	Populations	Average No. of cases	Cases/100000/year
Thi-Qar center	502612	(125)25	4.9
Al-Shattra	316175	(64)12.5	4.0
Al-Refaee	254620	(71)14.2	5.5
Suq Al-Shuch	212796	(57)11.4	5.3
Al-Jebaish	102171	(32)6.4	6.2
Total	1388374	(349)69.8	4.8

The geographical distribution of 349 surgical of cystic Echinococosis admitted to the main Thi-Qar hospital "2000-2005" is shown in (Table 4).

Discussion

The high infection rate of hydatid disease in females more than of males given found in the present study is agreement with finding of [6; 7] in Baghdad, [8] in Mosul and [5] in Basrah.

The present study shows that the sex difference may be attributed to the epidemiological factors such as socio-cultural and occupational risk or due to the fact that the females more closely associated with the source of infection, with infected soil, water and vegetable contamination and also work at live stock breeding in rural area and agriculture.

The liver is found infected in 77.07% of the total cases in the present study, followed by lung 13.4% and other organs 9.47%. Larval localization occurs within the liver sinusoids (capillaries) as first organ faced by oncospheres after entrance in to intraportal circulation. Moreover liver is considered as a good media for nutrient and growth due to protein synthesis, albumin, prothrombin and fibrinogen of the blood plasma [9].

The infection levels of geographical distribution of all surgical cases within the region, is expressed as the annual rate of new hospital cases (surgical cases only) or total patient per 100000 of total population. In general the average rate of surgical cases in Thi-Qar province was 4.8 cases per 100000 populations. Similar result was obtained by [10] in Kuwait with surgical incidence rate of 3.6 per 100000 population. On the other hand [11] reported mean annual morbidity 7.8% cases per 100000 population in Kirkuk city. In the United Arab Emirates (Al-Ain District), annual incidence rate of 0.75 per 100000 populations [12].

In general term the distribution of E. granulosus is influenced by many factors (agricultures, economic, education levels, social or cultural habits) which is associated with their domestic livestock. The incidence of hydatidosis in Thi-Qar means that it is still endemic.

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