Thi-Qar Medical Journal (TQMJ): Vol. (28), No. (2), 2024
Web Site: https://jmed.utq.edu Email: utjmed@utq.edu.iq
ISSN (Print):1992-9218 ISSN (Online): 3006-4791

The Epidemiological Characteristics, Clinical Presentations, Diagnostic Methods, Medical, Endoscopic & Surgical Intervention in Human Fasciola Hepatica in Sulaimani Governorate, Kurdistan / Iraq

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Abstract:

Background: Human fasciolosis is a worldwide zoonotic disease. The disease is increasing and affecting countries and areas not affected before. Animal trafficking and animal raising contribute to the disease.

Objectives: Characterize the epidemiology and the clinical presentations of the disease in Iraqi Kurdistan.

Patients & methods: Thirty-six patients were diagnosed with human fasciolosis. The epidemiology and clinical characteristics of the infestation was studied and evaluated.

Results: Among the 36 patients, half of the patients were male and the other half was females. The diagnosis was suspected from the clinical presentation, characterized by imaging's and confirmed by serology and or stool ova.

Conclusions: Human fasciolosis is an emerging disease in Iraqi Kurdistan. It should enter in the differential diagnosis of liver abscess, eosinophilia, moving objects in the cholecystectmomt field& ERCP.

Key words: Fasciolosis, liver abscess, Eosinophilia, ERCP.

Introduction:

Fascioliasis is a foodborne trematode infection with a worldwide distribution. Fasciola infection has been reported in 81 countries. Fascioliasis is considered a neglected zoonotic disease by the World Health Organization (1). Two accepted species, Fasciola hepatica and Fasciola gigantica, infect a wide range of mammals including livestock and humans (2). The current burden of human infection is not well known. The lack of supporting information from large epidemiologic studies and the particularities of the distribution of fascioliasis significantly hinder the estimation of the

number of infected people and disease burden. It was estimated that between 2.4 million and 17 million people were infected around the world. However, these estimates date back more than 25 years and the data used for their calculation are not provided (3). The more recent estimate of 2.6 million infections by Fürst et al was based on expert opinion (4). Given the emerging character of fascioliasis and reports of its expanding endemic areas,(5,6,7,8).it is likely that the number of infections around the world surpasses previous estimates 9.It had been observed in both human & animals in the countries around Iraq like Iran & Iraq, but rarely in Other Arab countries & only in immigrants (10). Until recently Fasciolosis was rare in Iraq, but later cases appeared in Iraqi Kurdistan and to start with the presentations were puzzling surgeon & physicians because the disease was not reported before. The surgeons were faced by finding moving objects during biliary surgery & physicians faced cases of liver abscesses not responding to metronidazole, the usual treatment of amebic liver abscess & other cases of blood eosinophilia without clear causes. Later physicians & surgeons recognized the disease after considering the case reports and even mini epidemics in neighboring countries; Iran and Turkey. Animals trading between neighboring countries help to introduce the infestation from a endemic countries to their neighbors. In Iran the epidemiological picture of human fascioliasis has changed in recent years. The number of reports of humans infected with Fasciola hepatica has increased significantly since 1980 and several geographical areas have been described as endemic for the disease in humans, with prevalence and intensity ranging from low to very high. High prevalence of fascioliasis in humans does not necessarily occur in areas where fascioliasis is a major veterinary problem. Human fascioliasis can no longer be considered merely as a secondary zoonotic disease but must be considered to be an important human parasitic disease. Accordingly, we present in this article a proposed new classification for the epidemiology of human fascioliasis. The following situations are distinguished: imported cases; autochthonous, isolated, nonconstant cases; hypo-, meso-, hyper-, and holoendemics; epidemics in areas where fascioliasis is endemic in animals but not humans; and epidemics in human endemic areas (10).In turkey prevalence of F. hepatica was higher in females (7.2%) than in males (4.2%) and was higher in the ≥36-year age group (6.7%) than in the ≤35-year age group (4.4%). Abdominal pain (93.3%), fatigue (88.8%), and weight loss (69.7%) were the most common symptoms. Eosinophilia was present in 89.9% of the patients. All seropositive patients had a history of eating raw aquatic plants. Stool examination alone is not sufficient to diagnose F. hepatica. Serological tests such as ELISA must be used together with stool examination (11).

Material Methods: Thirty-six patients were diagnosed with fasciola hepatica in Sulaimani - Iraqi Kurdistan most in Kurdistan center for gastroenterology & hepatology (KCGH) in Sulaimani teaching Hospital & the surgical department of the same hospital. Most of the cases diagnosed namely 28 cases were evaluated and diagnosed in the KCGH while the remaining in the surgical department of the same hospital. The cases were presenting with obstructive jaundice & were

valuated by liver chemistry, liver functions, complete blood pictures including eosinophil count, serology testing by ELISA for the parasite, abdominal ultrasound, Magnetic resonance cholangiopancreatography (MRCP) then decided to undergo endoscopic retro grace cholangiopancreatography (ERCP) during which fasciola hepatica worm were seen & extracted successfully. In the surgical department the worms were discovered during Common bile duct exploration. Some of these cases were already published as case reports or series.

Results:

Table (1): clinical & epidemiological characteristics of the patients:

Patients	Number	Age Median Years	Lab Diagnosis	Residency
Females	18	45	Serology/Or Stool Ova +Ve	KD/PG/SS
Males	18	39		KD/PG/SS
	36	42		
KD: Kala Diza. PG: Penguin. SS: Said Sadiq.				

Table (2): Presentations, Imaging diagnosis & interventions.

Presentations	Number	Imaging Diagnosis	Interventions
Right Hypochondrial Pain.	8	Ultrasound, MRCP.	Laparoscopic Cholecystectomy Or Open Surgery.
Liver Abscess.	8	Ultrasound.	Medical Treatment
Eosinophilia.	2	Ultrasound.	Medical Treatment.
Obstructive Jaundice.	18	U/S, MRCP, EUS.	ERCP + Medical Treatment.

Discussion: In this study 36 cases of proved human fasciolosis was diagnosed in Sulaimani center during a period of 4 years from 2016-2020. The diagnosis was suspected when the patients were presented as right hypochondrial pain or obstructive jaundice or eosinophilia or liver abscess. The diagnosis was characterized by abdominal ultrasound, magnetic resonance or EUS & confirmed by serology and or stool ova.

Most of the cases were from the rural areas bordering Iran. This explaining that the introduction of the infestation was through animal trafficking that is common between Iraq & Iran and other explanation is that these areas are full of waters surfaces rich in water cresses & snails, the source of the infection to both animals and human.

Although the prevalence of human fasciolosis is not common but it is not rare & should be put in the differential diagnosis of hepatobiliary diseases& should spark the preventive public health efforts to control the infestation by breaking the infestation cycle.

Table Number 1 shows the male female distribution of the patients, the residency and the ages of the patients. This shows that the patients are from rural areas bordering Iran where the infection is more prevalent and this support our suggestion that this infestation previously not present in our area, really was introduced through animal trafficking across the border.

Table Number 2 shows the clinical presentations of the patients including right hypochondrial pain, liver abscess, eosinophilia or obstructive jaundice. The table also shows the imaging diagnostic methods including laparoscopy or open surgery, medical treatment as oral trichlorbendazole or ERCP retrieval of the worms followed by medical treatment.

Conclusion: Human fasciolosis is an emerging disease in Iraqi Kurdistan.

It should enter in the differential diagnosis of liver abscess, eosinophilia, moving objects in the cholecystectmomt field& ERCP.

Recommendations:

1. Physicians and surgeons should be aware of this new emerging disease & should use the available resources to diagnose & treat the disease.

2. Public health authorities should activate the process of controlling this new emerging disease by breaking the infestation cycle.

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