

A STUDY ON RISK FACTORS CONTRIBUTING TO FASCIOLIASIS  
ENDEMICITY IN A FOCUS IN DAKAHLIA GOVERNORATE

Protocol of Thesis  
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## INTRODUCTION

In Egypt, fascioliasis is a zoonotic parasitic disease caused by *Fasciola gigantica* (*F. gigantica*) and *F. hepatic* that affects the hepatobiliary system of herbivorous animals and man (Andrews, 1999; Haseeb *et al.*, 2002). Human fascioliasis is becoming an increasing important health problem in many countries including Egypt (Rezk *et al.*, 2000). The infection rate in the Nile Delta ranged between 2-17% with clustering in the same family (El-Shabrawi *et al.*, 1997).

The clinical manifestations of human fascioliasis were divided into three phases: acute or invasive phase which being two months after infection, chronic latent phase and chronic obstructive phase (Sherlock and Dooley, 1997). The acute stage coincides with the larval migration and worm maturation in the hepatic tissue, and the chronic stage coincides with the persistence of *Fasciola* worms in the bile duct (Langley and Hillyer, 1989). The clinical manifestations of human fascioliasis are not markedly defined from many hepatobiliary diseases of other aetiology (Chen and Mott, 1990; Wilson, 1991). However, the tetrad of fever, painful hepatomegaly, anaemia and high eosinophilia are suggestive manifestations for fascioliasis (El Shazly *et al.*, 2001). In a group of Egyptian fascioliasis patients, Abdel Wahab *et al.* (1996) reported fever, diarrhoea, hepatomegaly, right hypochondrial pain and tenderness, as well as anorexia and leucocytosis with high eosinophilia. Nausea and /or vomiting and icterus were not so common.

The occurrence of human fascioliasis is determined by the presence of the intermediate snail host, herbivorous animals the human dietary beha-

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viour. Climatic conditions are critical for the development of *Lym-naea* species and the flukes. The infection is spreading more in the rural than the urban areas. The usual behaviour of swallowing or chewing aquatic plants and their roots particularly by children, the use of stagnant canal water in washing raw vegetables and for human consumption as well as the contamination between man and infected excreta of herbivorous animals raised on vegetables around canals are factors contributing to the epidemiology of fascioliasis (WHO, 1995).

Apart from man, fascioliasis has a worldwide distribution in a large variety of grass grazing animals as sheep, goats, cattle, buffaloes, horses and rabbits (Farrag, 1998). In Egypt, even donkeys (Ashour *et al.*, 1999), camels (Haridy and Morsy, 2000) and even rodents (Haridy *et al.*, 2003). were reported as reservoirs for fascioliasis. Livestock infection causes heavy economic losses in wool, milk and meat production (Soliman, 1998).

#### **AIM OF THE WORK**

This work aimed to study the risk factors contributing to fascioliasis endemicity in a focus in Dakahlia Governorate.

#### **SUBJECTS, MATERIALS AND METHODS**

To fulfil the aim of the study, two areas were chosen: Kafr El-Hessah (Talka Centre) an endemic area in comparison to a non endemic area, Oweish El Hager (Mansoura Centre). The following points will be carried out on the three main items:

I- Human factor: All individuals sharing in the study will be subjected to the following:-

a- Personal history: All data will be recorded in numerical medical sheets: name, age, sex, occupation, education, socio-economic status, eating habits, water source and water contact behaviour, pet animals and animal dealing behaviour, medical history and similar complaints in the family member(s).

b- Clinical examination including general, and abdominal examination

c- Laboratory investigations including:

1- Urine analysis.

2- Stool analysis. Those who were positive, were re-examined after being on liver-free diet for 7 days.

3- Complete blood picture.

4- Liver function tests.

5- Serodiagnosis for fascioliasis by a- Indirect haemagglutination test (IHAT), b- ELISA using *Fasciola hepatica* excretory/secretory (Fh/es) antigen.

6- Abdominal ultra-sonography (whenever possible).

II- Animal factor:

Identification of natural fascioliasis infection among representative samples of edible animals by coprologic examination.

III Snail factor:

1- Collection of snails from the different water sources in the vicinity of the studied areas.

2- Identification of the snails according to the standard freshwater keys of Ibrahim *et al.* (1999).

3- The ecology of the water sources, climatic conditions, time and methods of collection, the aquatic fauna and flora will be recorded.



- 4- Chemical constitutions of the water sources will be studied whenever.
- 5- Examination of the collected snails by the shedding and the crushing methods for the immature stages of trematodes.

Statistical analysis:

All data will be computerized and statistically analyzed.

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