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بالرسالة صفحات
لم ترد بالأصل

Study of the effect of a proton pump inhibitor intake on the intensity of Giardia lamblia infection

Thesis

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By

Hend Rashad Saad

M.B.B.Ch (Alex.)

Faculty of Medicine

Resident at Alexandria University Hospitals

2000

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SUPERVISORS

Prof. Dr. / Ahmed Zaky Helaly

Professor of Internal Medicine

and Head of GIT Unit,

Faculty of Medicine,

University of Alexandria.

Prof .Dr. / Aly Nasrat Mohamed Kassem

Professor of Internal Medicine,

Faculty of Medicine,

University of Alexandria.

Dr./ Sonia Rifaat Allam

Lecturer of Parasitology,

Faculty of Medicine,

University of Alexandria.

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Dedicated to

My Parents

and Family

Who gave me

Life, Love and Loyalty

Hend

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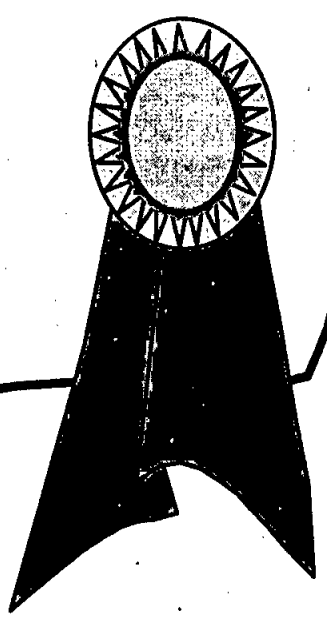
INTRODUCTION



INTRODUCTION

Giardia Lamblia was probably the first of man's intestinal parasites to be studied.[1] The organism was first identified in (1681) by Anton Van Leeuwenhoek using one of his own house-made hand lenses. Vilem Lamble redescribed the parasite in (1859) and published the first line drawings of both trophozoite and cyst forms of the parasite in diarrheal stools, the debate continued for many decades as to whether *Giardia* was a true entero-pathogen or merely a harmless commensal. In the succeeding decades, numerous clinical reports of symptomatic human infection with *Giardia* were reported, and its place as a human entero-pathogen was established.[2]

Giardiasis occurs throughout temperate and tropical regions world wide and continues to be the most prominent human protozoal entero-pathogen. Prevalence rates, depend primarily upon local sanitary conditions, vary from 2 % to 5 % in the industrialized world to 20 % to 30 % in the developing world.[3-6]

In the rural Egypt, it was reported that the incidence of giardiasis is 30 % in persons below puberty age and declined to 16 % above that age. In Cairo, the incidence was found to be 4.2 % in a random sample and

12% among food handlers.[7] In Alexandria, a prevalence rate of 9.7 % was reported in children and adults.[8]

The *Giardia* cyst is highly infectious for humans, and patent infections can be established by ingestion of 10 viable cysts.[9] The cyst can be ingested from a variety of different sources.

In developing countries, direct fecal-oral transmission is the major mean by which infection spreads.

The prevalence of infection is increased in children attending day care centers, and may be as high as 35 %.[10]

Transmission from fingers of asymptomatic mothers to their infants is equally important.

The increased prevalence of gardiasis in homosexuals is most probably the result of fecal-oral transmission.[11]

Food-borne transmission is less common, but a well-documented source of infection.

Outbreaks have most probably occurred through contamination of freshly prepared food by an infected food handler.[12]

Infected humans constitute a major reservoir of infection worldwide, and because of the high rate of asymptomatic carriage and the rapidity with which reinfection can occur in highly endemic areas, it seems unlikely that this infection will be eliminated.

Other reservoirs of infection, such as fresh surface water, present an even greater problem, particularly as it seems to be relatively easy to maintain contamination through infected humans.

Regarding water-borne transmission, gardiasis is considered to be the most common cause of epidemic water-borne diarrheal disease, and numerous outbreaks of gardiasis associated with contaminated water have been reported. Investigations implicated inadequate water treatment, simple chlorination only and contamination of the water main with sewage.[13]

Infected wild animals have also been incriminated for water contamination and zoonotic transmission of *Giardia Lamblia* to humans.[14] *Giardia* cysts are only moderately susceptible to the usual levels of chlorine 0.5% recommended for drinking water; therefore, outbreaks of giardiasis can occur from water that has an acceptably low level of coli form organisms.[13]

Water-borne transmission has also been implicated as a cause of giardiasis in travelers. Despite the high prevalence of infection in developing countries of the tropics, giardiasis has more frequently been reported in travelers to northern countries.[15] Perhaps, water – born epidemics do occur in cooler climates because *Giardia lamblia* cysts survive well at low temperature; more than two months at 4^0C and less than 4 days at 37^0C. Cysts are killed immediately at 50 ^{0}C. [16]

Immunodeficiency is another factor that predisposes to the acquisition of giardiasis and is probably a major contributor to the development of chronic infection. [17]

Giardia species exist as the motile trophozoite, which colonizes the intestinal tract and produces diarrheal disease, and the cyst, which is able to survive outside the host and is the form responsible for the transmission of infection. The trophozoite has two nuclei and four symmetrically placed flagella. The other major intra-cytoplasmic structure is the median body. This is found in the posterior aspect of the trophozoite and is one of the features that distinguishes *Giardia lamblia*, the human parasite, from G.muris (mice and some other rodents) and G.agilils (amphibians).