

# GIARDIA LAMBLIA IN PATIENTS UNDERGOING UPPER G.I. ENDOSCOPY

Pages with reference to book, From 74 To 75

M. Naqi Zafar ( Zafar Research and Diagnostic Centre, Rimpa Plaza, MA. Jinnah Road, Karachi. )

Rakhshanda Baqai, Tariq Zia Lodi, Suha Ahmad, Waquar uddin Ahmed, Huma Qureshi, Sarwar J.Zuberi ( PMRC Research Centre, Basic Medical Sciences Institute, Jinnah Postgraduate Medical Centre, Karachi. )

Qamar Jamal, S. Mahmood Alam ( Department of Pathology, Basic Medical Sciences Institute, Jinnah Postgraduate Medical Centre, Karachi. )

## ABSTRACT

To determine the frequency of giardiasis in patients undergoing upper G.I. endoscopy for dyspepsia and other upper G.I. disorders, duodenal aspirates were collected in 200 patients and simultaneous duodenal biopsies in 163 patients. Nine percent aspirates and 1.8% duodenal biopsies showed Giardia lamblia trophozoites. Giardia as a cause of dyspepsia should be considered in patients with negative endoscopy and in those who remain symptomatic inspite of adequate treatment for known upper G.I. disorders (JPMA 41: 74, 1991).

## INTRODUCTION

Giardia lamblia is a flagellated protozoan which resides in the upper part of the small intestine. The parasite has two forms vegetative and cysts. Clinical manifestations of giardiasis are epigastric pain, dyspepsia, nausea, anorexia, foul explosive diarrhoea and abdominal cramps. Attempts should be made to isolate the trophozoite/cyst in the stool. If these are repeatedly negative and the symptoms persist, it is best to endoscope the patient, to exclude a peptic ulcer and simultaneously obtain duodenal aspirate, since Giardia lamblia have been seen in duodenal juice<sup>1</sup> and finally to obtain a jejunal/duodenal biopsy for the detection of Giardia lamblia<sup>2</sup>. The aim of the study was to determine the frequency of giardiasis in patients undergoing upper G.I. endoscopy.

## PATIENTS AND METHODS

Two hundred patients included in this study underwent endoscopy for one of the following complaints: Epigastric pain, dyspepsia, vomiting, heartburn/ water brash, dysphagia, weight loss, G.I. bleeding and for follow-up in duodenal ulcer, gastric ulcer, oesophageal varices and gastritis patients. Indications for endoscopy, endoscopic findings and other parameters were entered in a standard proforma. Olympus 2T10 endoscope was passed in fasting state and the oesophagus, stomach and duodenum were fully examined. Duodenal aspirate was collected from the second part of the duodenum through a polythene tube passed via the biopsy channel. The polythene tube was specially prepared with multiple perforations on the sides. A sterile syringe was attached to the polythene tube and duodenal juice collected as described by others<sup>3</sup>. In cases where tapping was dry, 5ml. of normal saline was injected and then aspiration performed. After each endoscopy the polythene tube was first washed with plain water, then soap water and then rinse with plain water, followed by sterilization in the microwave oven for three minutes. Similarly the endoscope was cleaned with plain water, soap water and again with distilled water after each examination. Aspirate (2-4 ml.) was centrifuged for two minutes and the sediment examined directly and after staining with Lugol's Iodine. Few drops of the uncentrifuged aspirate were injected directly onto the culture media. In the middle of the study identical pathogenic organisms were obtained on several consecutive culture specimen, suggesting contamination. This was

rectified by placing the endoscope in formalin vapours for five days. Cultures were retaken from the endoscope's biopsy channel and biopsy forceps. Once sterility was restored, cultures were restarted. Cultures done aerobically on blood agar and MacConkey's media, were examined between 24-48 hours. Anaerobically thioglycolate broth was used and observations made after 48 hours. Identification was done on colony morphology, gram's staining, reaction on TSI (triple sugar iron) and other biochemical reactions. Duodenal biopsies were also taken and examined after staining with haematoxylin and eosin by two different observers.

## RESULTS

Ages of the patients ranged between 11-92 years with a mean age of 40.8 years. Male to female ratio was 2:1. Significant symptoms of patients harboring *Giardia lamblia* were epigastric pain 22.2% , dyspepsia 16.7% and diarrhoea 5.6%. Examination of the aspirate revealed *Giardia lamblia* in 9% (18 patients), 23% of total patients population harbored fungi. A total of 117 cultures were obtained, of which 28 got contaminated and were therefore excluded. Of the 89 cultures, growth was obtained in only 59. *Candida albicans* was grown on 18 cultures. Other commensals of the gut were found in small numbers too. Of the 200 patients who underwent endoscopy 36 were follow-up cases of duodenal ulcer, 6 of these had *Giardia lamblia* in the aspirate (33.3%). In view of the high giardia positivity in duodenal ulcer an attempt was made to determine a correlation of giardiasis with H2 receptor antagonist intake (alkaline pH favouring giardiasis). Findings obtained are given in Table.

**TABLE. Effect of H2 receptor antagonists/antacids on yield of giardia lamblia.**

Drugs administered	Giardia	
	Positive 6 Cases	Negative 30 Cases
H2 Receptor Antagonists	3 (50.0%)	14 (46.6%)
Antacids	2 (33.3%)	2 (6.6%)
No Treatment	1 (16.6%)	14 (46.6%)

The number of *Giardia lamblia* positive patients was too small to reach a level of statistical significance. A total of 163 biopsy reports were available of which 3 reported *Giardia lamblia* (1.8%) in duodenal tissue, 2 of these also showed *Giardia lamblia* on duodenal aspirate, one showed negative trophozoites were seen in duodenal biopsy tissue.

## DISCUSSION

Several methods used to diagnose giardiasis include stool examination, duodenal aspiration, mucosal impression smears and biopsy examination. The yield of *Giardia lamblia* in stool varied from 28.6% - 97.6%<sup>2,4-7</sup>, in duodenal aspirate from 15.5% - 64.2%<sup>2-5,8</sup>, in mucosal impression smears 57.1% - 92.3%<sup>4-6</sup> and in biopsy specimens from 57.1% - 100%<sup>1,2,4,6,9</sup>. *Giardia lamblia* has been obtained in

9% of duodenal aspirates and in 1.8% of biopsy specimens in this study. Three factors which may be responsible for the low yield include the size of the endoscopic biopsy, staining technique and excessive use of antiamoebic drugs and antibiotics in this country. Larger biopsy size was obtained with other instruments<sup>1,2,4,9</sup> as compared to the endoscopic biopsy used in this study. Improvement of staining technique gives better results too. A 100% yield was seen with Giemsa staining<sup>9</sup>. The third factor which affected results of both duodenal aspirates and biopsy is probably the indiscriminate use of metronidazole in Pakistan. The presence of fungi, particularly *Candida albicans* in 18 cultures may be due to an alkaline environment, created by H<sub>2</sub> receptor antagonists. In those parts of the world where giardiasis is endemic, it would be best to examine 3 stool samples as suggested and then go on to duodenal aspiration, mucosal impression smears and biopsy.

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