

# Outcome of Patient with Biliary Ascariasis Admitted in A Tertiary Hospital in Chattogram

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## ABSTRACT

**Background:** Biliary ascariasis is common, not only in under developed countries, but also in other parts of the world and should be considered as a differential diagnosis in patients with biliary pain or acute cholangitis, even at centers where biliary ascariasis is not endemic. This study aimed to assess the clinical and ultrasonic features and management of such patients admitted in a tertiary hospital of Bangladesh.

**Materials and methods:** Fifty cases of biliary ascariasis admitted in the Medicine Ward of Chittagong Medical College Hospital from January to June 2017 were included in the study. Patients were initially treated conservatively with Tab albendazole (400mg) twelve hourly for 3 days. Serial ultrasonography was done to see the position of worm in the biliary tree.

**Results:** Majority (68%) of the respondents was in 18 to 35 years age group and 78% were female. Abdominal pain and vomiting were the common presenting features present respectively in 100%, and 78% of the cases. Pain was relieved in 92% of the cases and worm was present in biliary tree only in 4% cases in follow-up sonography. Forty two (84%) of the patients were cured with conservative treatment and the rest 16% needed endoscopic or surgical treatment.

**Conclusion:** It is concluded that conservative treatment with albendazole is very effective and safe in patients with biliary ascariasis.

## Introduction

Ascaris Lumbricoides (AL) a common parasitic infestation that is known to infect more than a billion people worldwide.<sup>1,2</sup> Ascariasis should be suspected in patients with pancreatic-biliary disease in endemic areas. Hepatobiliary and pancreatic ascariasis is caused by entry of the nematode, Ascaris Lumbricoides, from the duodenum in to the biliary and pancreatic ductal lumen.<sup>3</sup> Patient present with wide spectrum of symptoms of biliary and pancreatic disease.<sup>4</sup> The warm and humid climate of tropical and subtropical countries is suitable for the growth and maturity of the larva of Ascaris lumbricoides.<sup>5</sup>

Biliary ascariasis accounts for 10%-19% of ascariasis related hospital admissions.<sup>6</sup> Prevalence of biliary ascariasis in Bangladesh is 0.45% in male patients and 0.55% in female patients.<sup>7</sup> Female of third decade are more likely to be affected.<sup>8,9</sup> Ultrasonography is an

extremely useful tool in the diagnosis of biliary ascariasis. Different modalities of treatment are available for biliary ascariasis such as conservative, endoscopic and surgical. Conservative treatment in the form of nothing by mouth, nasogastric suction, intravenous fluid, analgesic, antispasmodics, and anthelmintic applied to all patients. Reported success rate varies from 14.24%-97%.<sup>10</sup>

The present study described a series of patients presenting with biliary ascariasis and managed conservatively with albendazole in a tertiary hospital of Bangladesh.

## Materials and methods

This prospective observational study was conducted between January and June 2017 in the Department of Medicine, Chittagong Medical College Hospital, Bangladesh. Fifty patients irrespective of their age, diagnosed as biliary ascariasis by ultrasonography were included in the study. Pregnant women and patients refused to participate in the study were excluded. The study was conducted with prior approval from the Ethical Review Committee of Chittagong Medical College and written informed consent was obtained from each participants.

Clinical assessment was performed in all the cases. Detailed history was taken and complete blood cell count, liver function test, serum amylase, X-ray of the chest and abdomen and ultrasound of the abdomen was performed in all the patients at the time of admission

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and repeated when required. The mainstay of the diagnosis was ultrasound of the abdomen. All the patients were initially managed conservatively with IV fluids, IV antibiotics and IV antispasmodics. All the patients were dewormed with Tab. Albendazole (400mg) 12hourly 3 doses. Endoscopic or surgical intervention was carried out when conservative treatment failed. Relieve of pain after taking anthelmintic was recorded and serial USG was done to see the worm present or absent in biliary tree. Patient whose USG shows no worm in biliary tree counted as cured by conservative treatment and discharged with advice to maintain personal hygiene and sanitation and taking regular anthelmintic to prevent recurrence of infection. Patient whose pain relieved but follows up USG shows worm in biliary tree was also discharged and advised to come with another follow up USG after 10 days. Patients those shows no worm in biliary tree after 10 days follow up USG were counted as cured by conservative treatment and those USG shows worm in biliary tree were counted as not cured by conservative treatment and advised for endoscopic (ERCP) or surgical treatment. After giving anthelmintic, maximum time were taken to see relieve of pain were five days. After that if pain not relieved, patients were advised to endoscopic treatment, ERCP or surgery.

After collection, data were tabulated in Microsoft excel. Descriptive statistics in the form of frequency and percentage were used to present the data.

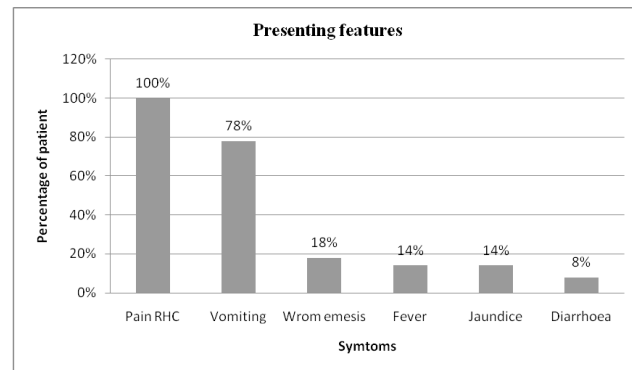
**Results**

The majority of the patients (68%) were in the age group of 18-35 years, followed by 28% in the age group of more than 35 years and 4% were below 18 years. More than three fourth (78%) of the patients were female (Table I).

**Table I** Demographic characteristics of the patients (n=50)

Characteristics	Frequency	Percentage (%)
Age Group		
< 18 Years	02	4
18 to 35 Years	34	68
> 35 Years	14	28
Sex		
Male	11	22
Female	39	78

Figure 1 shows that all patients presented as pain Right Hypochondrium (RHC) which was severe enough to seek medical consultation. Associated symptoms were vomiting (78%), fever (14%) vomiting of worms (18%).



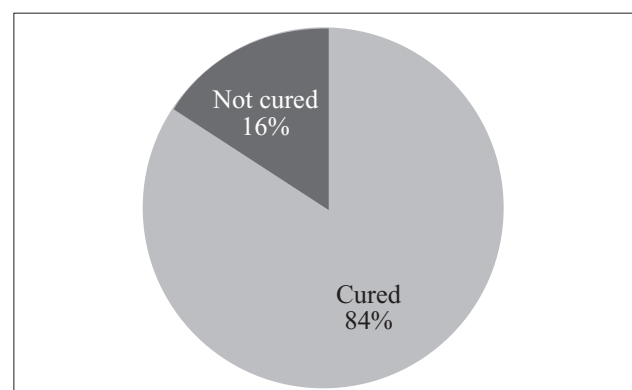
**Figure I** Presenting features of the patients with biliary ascariasis (n=50)

Among the total respondents, about 92% patients were relieved from their pain. Table II shows about 61% has got no worm in their biliary tract, while in 39%, worm was found within the biliary tract after pain relieved. About 94% has got alive worm within the biliary tract. In second follow-up. USG out of 17 cases 12% has got worm remained within biliary tract.

**Table II** Follow-up evaluation of the patients (n = 50)

Parameters	Frequency	Percentage (%)
Pain Relief		
Relieved	46	92
Not Relieved	04	8
First Follow-Up USG Findings (n=46)		
Worm in Biliary Tract	18	39
No Worm in Biliary Tract	28	61
First Follow-Up USG Comment (n=18)		
Worm Alive	17	94
Worm Dead	01	6
Second Follow-Up USG Findings		
Worm in Biliary Tract	2	12
No Worm in Biliary Tract	15	88

Figure 2 shows that about 84% were cured, while only 16% were not cured off their diseases.



**Figure 2** Outcome of conservative treatment in the patients with biliary ascariasis (n = 50)

**Discussion**

Conservative management along with oral anthelmintic medication was found to be effective in majority of patients of biliary ascariasis and can avoid surgical intervention or invasive endoscopic extraction. Albendazole is a commonly used antihelminthic in patient of biliary ascariasis coming with acute abdominal pain.<sup>11</sup> The present study was done to see the effectiveness of Albendazole in the treatment of biliary ascariasis. The study results confirmed that conservative treatment with albendazole was effective in majority of the cases of biliary ascariasis.

Among patients enrolled in the study majority were aged between 18-35 years (68%), majority were female (78%). Female were three times more likely to be affected than males. Akhter et al shows overall prevalence of biliary ascariasis was 0.45% in male patients and 0.55% in female patients, which translates into susceptibility of young female to biliary ascariasis.<sup>7</sup>

In this study presenting symptoms were vomiting present in 78% patients, fever present in 14% patient, emesis of worm present in 18% of patients and diarrhea present in 8% of patients. In another study vomiting was present in 76.2% patients, fever present in 16.7% patients, emesis of worm in 38.1% patients and no patients present with diarrhea.<sup>12</sup> In a study conducted by Das shows 83.72% patient presented with vomiting, 13% with fever.<sup>11</sup> We have noticed jaundice was present in 14% cases. There was no previous data about this sign. So, this will be a new diagnostic sign in biliary ascariasis.

Our first parameter to see conservative treatment outcome was pain, in 92% patient's pain relieved by conservative management. Maximum time we wait for pain relieve were 5 days. After that time, we advised them for other interventional treatment like Endoscopy, ERCP or surgery. Pains were not relieved in four patients within 5 days and we advised them for endoscopy. We advised for another USG as follow up to observe the worm. Among them, 61% patients USG showed no worm in biliary tract. We discharged them with proper advice to take regular anthelmintic and proper education about personal hygiene to prevent recurrence. In 18(39%) patients USG showed worm present in biliary tree. Among these 18 patients' worm was alive in 17 patients and one patient having dead worm in their biliary tract. We also discharged 17 patients and advised them to come with another follow up USG after 10 days to see the worm as spontaneous migration of worm is also occurs and 1 patient presented with dead worm in their biliary tree were advised for Endoscopy or ERCP. In second follow up

USG in 15 patients showed no worm in biliary tree and in 2 patients USG showed worm in biliary tract. They were advised for endoscopic treatment. Among 50 patients, 42 patients (84%) were cured by conservative treatment. 8 patients (16%) were not cured by conservative treatment and needed endoscopic management and ERCP or surgery. Other studies conducted in and around our country reported that most of the patients can usually be managed conservatively, and surgery or ERCP are required only in a very limited number of cases.<sup>8,9,13,14</sup>

**Limitations**

Patients from a single tertiary public hospital, small sample size and short follow-up period were some of the limiting factors of the present study which should be kept in mind during considering the study results.

**Conclusion**

Most cases of biliary ascariasis respond to conservative management. In cases not responding to conservative management, ERCP can be used to remove the worm live or dead from bile ducts or pancreatic duct.

**Recommendation**

To achieve high cure rate against biliary ascariasis, triple-dose regimens of albendazole are warranted. Further multicenter randomized clinical trial is desired to validate the result of the present study.

**Disclosure**

All the authors declared no competing interest.

**References**

1. de Lima Corvinoy DF, Bhimji SS, Ascariasis . Treasure Island, FL: StatPearls Publishing. 2018. StatPearls [Internet] [Updated 2017 May 25].
2. Hadush A, Pal M. Ascariasis: Public health importance and its status in Ethiopia. *Air Water Borne Diseases*. 2016 ;5(1):126.
3. Khuroo MS, Zargar SA. Biliary ascariasis: A common cause of biliary and pancreatic disease in an endemic area. *Gastroenterology*. 1985;88(2):418-23.
4. Khuroo MS, Zargar SA, Mahajan R. Hepatobiliary and pancreatic ascariasis in India. *The Lancet*. 1990;335(8704):1503-1506.
5. Shah J, Shahidullah A. *Ascaris lumbricoides*: A Startling Discovery during Screening Colonoscopy. *Case Rep Gastroenterol*. 2018;12(2):224-229.
6. Shah OJ, Robanni I, Khan F, Zargar SA, Javid G. Management of biliary ascariasis in pregnancy. *World journal of surgery*. 2005;29(10):1294-1298.
7. Akhter N, Islam SM, Mahmood S, Hossain GA, Chakraborty RK. Prevalence of biliary ascariasis and its relation to biliary lithiasis. *Journal of Medical Ultrasonics*. 2006;33(1):55-59.

- 8.** Nasreen H, Hassan M. Nitazoxanide—A New Option in Biliary Ascariasis. *ABC Research Alert*. 2019;7(1):9-19.
- 9.** Nasreen H. A Clinical Trial of Nitazoxanide and Albendazole in Biliary Ascariasis. *American Journal of Medicine*. 2017;5(1):18-24.
- 10.** Khuroo MS, Rather AA, Khuroo NS. Hepatobiliary and pancreatic ascariasis. *World J Gastroenterol*. 2016; 22(33):7507-7533.
- 11.** Das UK, Karim M, Raihan AS, Hasan M. Biliary ascariasis: Experience from a district hospital. *The ORION Medical Journal*. 2008 Sep;31:585-587.
- 12.** Mukhopadhyay M. Biliary ascariasis in the Indian subcontinent: A study of 42 cases. *Saudi journal of gastroenterology: Official journal of the Saudi Gastroenterology Association*. 2009;15(2):121-125.
- 13.** Misra SP, Dwivedi M. Clinical features and management of biliary ascariasis in a non-endemic area. *Postgraduate medical journal*. 2000;76(891):29-32.
- 14.** Hajong R, Tongper D, Khariong PD, Mibang N. Hepato-biliary ascariasis-experience from a tertiary care hospital in North East India. *JDMS*. 2013;7(2):26-30.