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RESEARCH NOTE

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Seasonal Prevalence of *Blastocystis hominis* among Patients Attending Thammasat Chalermprakiat Hospital, Pathum Thani Province, Thailand

Pochong Rhongbutsri

Department of Preclinical Science, Faculty of Medicine, Thammasat University, Pathum Thani 12120, Thailand

Abstract

We investigated the seasonal prevalence of *Blastocystis hominis* and overall protozoan infection among patients attending Thammasat Chalermprakiat Hospital in Pathum Thani Province, Thailand, from February 2000 to February 2001. The result showed that the highest prevalence of *B. hominis* (1.9%) and overall protozoan infections (2.8%) was in the rainy season (high levels of infection in July-September). Significant differences in the prevalence of *B. hominis* infection were found between the rainy and cool seasons ($p < 0.05$). Helminthic infections were also found in this study. In any further study, seasonal variations in fecal contamination of water sources for drinking, food preparation and washing, should be investigated.

Keyword: *Blastocystis hominis*, seasonal prevalence

Blastocystis hominis is increasingly recognized as a cause of human gastrointestinal illness. The symptoms found in the patients with *B. hominis* infection were mainly diarrhea and abdominal pain with other nonspecific symptoms, such as vomiting, nausea, and flatulence [1-5]. *B. hominis* was reported to be transmitted via the fecal-oral route through contaminated food and water [6]. The geographic distribution of *B. hominis* appeared to be global, with infections common in tropical and subtropical countries [7-11].

In Thailand, the overall prevalence of *B. hominis* has been reported as approximately 4.3-36.9% [12-15]. However, information about its seasonal prevalence among Thai patients remains unavailable. In this study, we investigated the seasonal prevalence of *B. hominis* and overall protozoan infection among patients attending Thammasat Chalermprakiat Hospital, Pathum Thani Province, Thailand, from February 2000 to February 2001.

Records of stool specimens submitted for parasite examination from February 2000 to February 2001 were investigated for seasonal prevalence. Records were collected from the Clinical Laboratory Unit, Thammasat Chalermprakiat Hospital, Pathum Thani Province, Thailand. Specimens were processed normally and examined by direct smear technique by a qualified medical technician. Positive rates were expressed as percentages. Differences in prevalence rates among the three different seasons were compared by Chi square test. Statistical analysis was performed with a level of significance at p-value < 0.05.

The seasonal and monthly prevalences of *B. hominis* and overall protozoan infections are shown in Tables 1 and 2, and Fig 1. The highest

prevalences of *B. hominis* (1.9%) and overall protozoan infections (2.8%) were found in the rainy season (high level of infection in July-September). The lowest prevalences of *B. hominis* (0.7%) and overall protozoan infection (1.6%) were found in the cool season. A significant difference in the prevalence of *B. hominis* infection among the patients was found between the rainy and cool seasons ($p < 0.05$). In this study, helminthic infection rates found among the patients were *Strongyloides stercoralis* (0.2%) in the hot season; *S. stercoralis* (0.5%), hookworm (0.1%) and *Ascaris lumbricoides* (0.1%) in the rainy season; and *S. stercoralis* (0.4%), hookworm

Table 1 Seasonal prevalences of *B. hominis* and other protozoan infections among patients attending Thammasat Chalermprakiat Hospital, Pathum Thani Province, Thailand (mid-Feb 2000 to mid-Feb 2001).

Protozoa	Hot* (n=559) No. of +ve (%)	Rainy* (n=988) No. of +ve (%)	Cool* (n=851) No. of +ve (%)
B. hominis	4 (0.7)	19 (1.9)**	6 (0.7)**
G. lamblia	2 (0.4)	6 (0.6)	5 (0.6)
E. histolytica	-	-	2 (0.2)
T. hominis	3 (0.5)	2 (0.2)	1 (0.1)
E. coli	2 (0.4)	1 (0.1)	-
Total	11 (2.0)	28 (2.8)	14 (1.6)

* Hot = mid-Feb 2000 to mid-May 2000; Rainy = mid-May 2000 to mid-Oct 2000; Cool = mid-Oct 2000 to mid Feb-2001
** Represents a significant difference in prevalence of *B. hominis* infection ($p < 0.05$)

Table 2 Monthly prevalences of *B. hominis* and overall protozoan infection among patients attending Thammasat Chalermprakiat Hospital, Pathum Thani Province, Thailand (Feb-2000 to Feb-2001).

Year/month	No. examined	*B.hominis*		Overall protozoan	
		+ve	%	+ve	%
2000 February	181	0	0	5	2.8
2000 March	220	0	0	1	0.5
2000 April	217	4	1.8	7	3.2
2000 May	132	0	0	1	0.8
2000 June	207	1	0.5	2	1.0
2000 July	173	4	2.3	6	3.5
2000 August	194	6	3.1	8	4.1
2000 September	202	6	3.0	10	5.0
2000 October	278	3	1.1	3	1.1
2000 November	242	2	0.8	3	1.2
2000 December	167	2	1.2	4	2.4
2001 January	201	1	0.5	5	2.5
2001 February	177	0	0	2	1.1

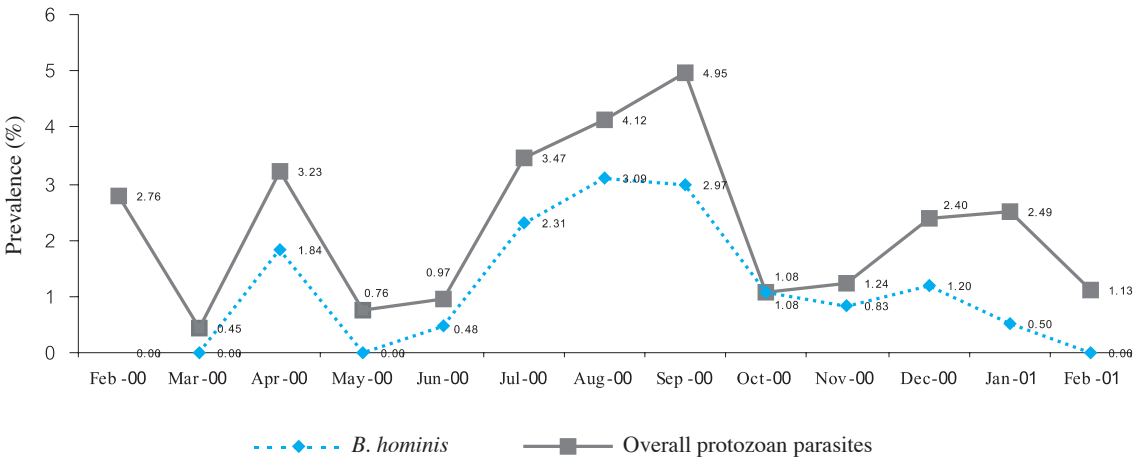

Fig 1 Prevalences of *B. hominis* and overall protozoan infection among patients attending Thammasat Chalermprakiat Hospital, Pathum Thani Province, Thailand (Feb 2000 to Feb 2001).

(0.2%) and mixed infections of *S. stercoralis* and *Trichuris trichiura* (0.1%) in the cool season.

Reported prevalence of *B. hominis* infections in Thailand ranged between 4.3-36.9% [12-15]. The infection rate observed in the present study was lower than those reported elsewhere. The prevalence of *B. hominis* was highest in the rainy season. This finding might be due to the higher amount of rainwater, which could lead to environmental contamination by fecal materials and favor water-borne transmission of *B. hominis*. As in past reports suggesting that it could be transmitted via fecal-oral route [6, 16-19], a recent study has shown that *B. hominis* infection was statistically linked to the quality of drinking water [14]. The other protozoan parasites (*Giardia lamblia, Entamoeba histolytica, Trichomonas hominis* and *E. coli*) were found less frequently and with no seasonal variation. Further studies of seasonal fecal contamination of water sources for drinking, food preparation and washing, should be conducted.

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