SINGLE TRANSCOLONOSCOPIC INFUSION OF THREE ANTI-PROTOZOAL AGENTS FOR DIFFICULT BLASTOCYSTIS HOMINIS INFECTIONS

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INTRODUCTION

Blastocystis hominis (*Bh*), is now recognized as an enteric pathogen, with presumptive evidence for *Bh* causing IBS-like symptoms. It is considered a common affliction but resistance has become of increasing concern.

Despite recent treatment advances initial monotherapy typically consists of repeated and prolonged courses of metronidazole, with efficacy rates of only 0% - 49%. Nitazoxanide monotherapy, once deemed effective in 71% - 100% of patients, has recently become less effective. Furthermore high failure rate and consequent side effects result in poor patient compliance and development of resistant strains of *Bh* that become less responsive to oral therapy.

Current treatments rely on oral multidrug regimens such as trimethoprim-sulfamethaxazole (TMX) and Doxycycline-Secnidazole. We developed an intracolonic administration of anti-protozoal agents which has the advantage of largely bypassing systemic absorption.

We previously reported effective treatment of naive and resistant *Bh* using two consecutive colonic infusions of anti-protozoal agents; nitazoxanide, secnidazole and furazolidone. Here we asked whether a single transcolonoscopic infusion of anti-protozoal agents could simplify the procedure without compromising efficacy.

METHODS

Eighteen *Bh* positive patients (9M; 36-62yrs: 9F; 30-50yrs), 4 treatment naive and 14 treatment failures, were treated with a single transcolonoscopic infusion. Sixteen of the eighteen were infused with furazolidone (1500mg), nitazoxanide (5000mg) and secnidazole (6000mg) followed by 10 days oral nitazoxanide (500mg bd).

2/18 patients with 'sulphur' allergies were infused with a combination of furazolidone (1500mg), paramomycin (75000mg) and secnidazole (6000mg), followed by 10 days oral iodoquinol (650mg tds).

CONFLICT OF INTEREST STATEMENT

Thomas J. Borody has a pecuniary interest in the Centre for Digestive Diseases and has filed patent applications in the parasite field.

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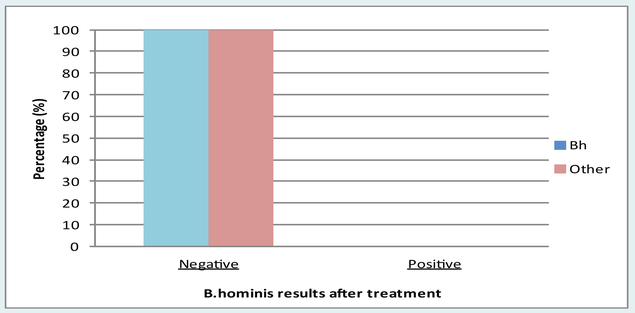
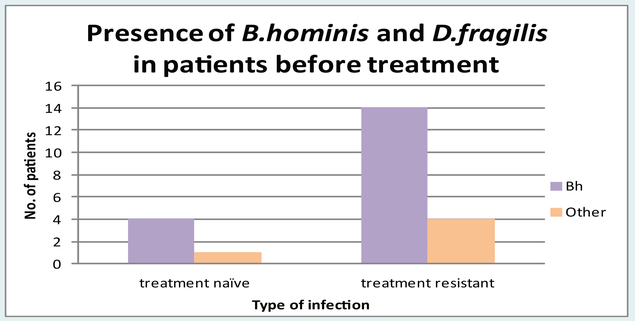
RESULTS

Bh was eradiated in 100% of patients (18/18) (Graph 1). Of these 78% had failed multiple previous eradication attempts and 5/16 also eradicated their *Dientamoeba fragilis (Df)* (4) or *Entamoeba hartmanni (Eh)* (1)



Graph 1: Eradication rate for B.hominis and D. fragilis



Graph 2: Presence of *B.hominis* and *D. fragilis* in 18 patient cohort, pre-treatment.

Minor side effects were reported in 22% of patients. Only 'new' symptoms were assesed as side effects and included nasuea/vomiting (2/18) (Table 1).

Table 1: Most common side effects reported during treatment

Side effects	Percent reported
nausea/vomiting	**11%**
Lethargy	0.05%
Abdominal pain/discomfort	0.05%
Diarrhoea	0.05%
Change in urine/stool colour	0.05%

All side effects reported by patients were mild and transient in nature, resolving upon cessation of therapy.

DISCUSSION

In this small series, we report 100% eradication rate *Bh,* in 18 patients, using single transcolonoscopic infusion of anti-protozoal agents.

This eradication rate appears to be higher than our previously reported 2-day intra-colonic infusion of anti-parasite agents, which acheived 92% eradication rate, significantly higher than published eradication rates of difficult *Bh* for currently marketed oral anti-parasite therapies.

Comparatively, patients infected with *Df* or *Eh* also acheived 100% eradication rate of their *Df* co-infection. No literature to date has reported successful eradication of both parasite infections using a single dose therapy. Furthermore, of these co-infected patients, 4/5 had previously failed therapy for *Df or Eh*.

In addition to its eradication success, the single transcolonoscopic infusion was also more tolerable than current therapies, which report nausea/vomiting incidence rate as high as 40%.

Bh is especially difficult to eradicate in this particular sub-group of patients; those who are immunosuppressed (eg. AIDS, UC, Crohn's), patients with chronic renal failure and renal transplant recipients. As a result they experience more side effets during oral treatment. Our colonic infusion is adequate for this sub-group as it bypasses systemic absorption, limiting side effects normally experienced with oral treatment and increases colonic concentration, subsequently not compromising efficacy.

CONCLUSIONS

Single transcolonoscopic anti-protozoal infusion for difficult *Bh* infections acheives 100% eradication in a small cohort and deserves a formal comparative trial.

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