

A Clinical Study to Prove the Better Efficacy of Tinidazole over Metronidazole for the Treatment of Amoebic Liver Abscess

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How to cite this article:

M. Balachandar & Nandyala Penchala Reddy. A Clinical Study to Prove the Better Efficacy of Tinidazole over Metronidazole for the Treatment of Amoebic Liver Abscess. *New Indian J Surg.* 2018;9(5):662-64.

Abstract

The Efficacy of Metronidazole and Tinidazole has been compared in 18 patients with Amoebic Liver Abscess. Only those with unequivocal clinical, radiological and laboratory evidence of Amoebic Liver Abscess were included; diagnostic and therapeutic aspiration was performed where necessary. This study was conducted in department of general surgery at PES Medical College, Kuppam in the period of September 2017 to May 2018 over a study population of 18 patients. 9 patients received metronidazole and 9 patients received tinidazole in random order. The 2 groups were compared for the efficacy of drugs. Both drugs were given Intravenously (that is, metronidazole 500mg TID and tinidazole 800mg BID) and intra cavity instillation (If needed, both once daily) for a minimum of 3 days. With treatment extended if considered clinically advisable. 5 of 9 patients (55.56%) were cured with metronidazole given for an average period of 7 days (range 4 to 14 days). 8 of 9 patients (88.89%) given tinidazole were cured and the mean duration of treatment was 4 days (range 3 to 6 days). There were fewer side-effects with tinidazole. Tinidazole was found to be superior to metronidazole in overall efficacy because a shorter course of treatment was necessary and it caused fewer side-effects.

Keywords: Metronidazole; Tinidazole; Amoebic Liver Abscess.

Introduction

The Introduction of metronidazole for the treatment of amoebiasis was a major advance both because it was the first drug found effective against *Entamoebahistolytica* in tissues and bowel lumen and because of its efficacy and its general clinical acceptability. As a result, it was accepted by many as the drug of choice for all forms of amoebiasis. This stimulated a search for the development of other nitroimidazole derivatives of which tinidazole is one (Miller et al., 1970). This is ethyl -2-methyl-5 nitro-1H-imidazole Ethylsulphone which has been shown in vitro and in animal experiments to be active against *E. histolytica* (Howes et al., 1970). Numerous clinical trials have confirmed human efficacy (Zuberi and Ibrahim, 1973; Prakash et al., 1974; Islam and Hasan, 1975). The present study was planned to compare the efficacy and tolerance of metronidazole and tinidazole in the treatment of Amoebic Liver Abscess.

Aim

To Determine the Efficacy of Tinidazole over Metronidazole for the treatment of Amoebic Liver Abscess.

Methods and Materials

Eighteen 18 cases were selected for study. Only those with unequivocal clinical, radiological and laboratory evidence (Fig 1a to e) of Amoebic liver abscess were included. Diagnostic aspiration (Fig 2a,b) was performed whenever considered necessary. No patient with a serious complication such as rupture of the abscess into the pleural or peritoneal cavity, or to the exterior were included. All patients were admitted to

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Received on 23.06.2018, Accepted on 14.07.2018

hospital and allocated at random to treatment with either metronidazole or tinidazole. Response was assessed daily during the first week and then on the 10th to 12th day and again on the 20th day. Routine follow-up beyond 20 days was also done. The age distribution is shown in Table 1., 7 males and 2 females received metronidazole while 8 males and 1 female received tinidazole. Each drug was initially given for 3 days. If the patient did not show signs of continued improvement, treatment was prolonged further as considered necessary on clinical grounds. Side-effects

were elicited by direct questioning if none was volunteered by the patient. Patients were regarded as cured when symptoms and signs disappeared and radiological and laboratory findings returned to normal.

Results

Immediate cure was achieved in 5 of 9 patients given metronidazole and in 8 of 9 patients given tinidazole. The average duration of treatment in the metronidazole group was 7 days (range 4 to 10 days) whereas in the tinidazole group the mean duration of treatment was 4 days (range 3 to 6 days). It was considered necessary to continue treatment for 6 days in 1 patient receiving tinidazole whereas 4 patients taking metronidazole required treatment for 10 days.



Fig. 1 a to e: Radiological imaging of Liver abscess

Table 1: Age distribution of patients with amoebic liver abscess in the two treatment groups

Age group	Metronidazole	Tinidazole
11-20	0	0
21-30	1	1
31-40	2	1
41-50	4	4
51-60	2	3

Table 2: Clinical results in patients with amoebic liver abscess treated with metronidazole or tinidazole

Treatment	Total No of Patients	AVG No of Treated Days	No of Patients Cured (%)
Metronidazole	9	7	5(55.56)
Tinidazole	9	4	8(88.89)

Table 3: Side effects of metronidazole and tinidazole

Side Effects	Metronidazole (%)	Tinidazole (%)
Anorexia / Vomiting	2 (22.23)	1 (11.12)
General Malaise	1 (11.12)	0
Metallic Taste IN Mouth	1(11.12)	1(11.12)
Headache	1(11.12)	0



Fig. 2a: Pig tail insertion

Results of treatment in the 2 groups are shown in table 2.

The side-effects are summarized in table 3. The overall incidence was greater with metronidazole. Treatment was discontinued in I patient taking metronidazole because of severe headache.



Fig. 2b: Aspiration of pus through pig tail

Discussion

Though Metronidazole was the first to be introduced, Tinidazole was considered a better choice in previous studies. So our study which compared both the drugs given in both IV and intralesional routes further supported the findings of previous studies. Cure rate with Tinidazole was high and the side effects were low.

Conclusion

Tinidazole provided significantly higher cure rates than Metronidazole in the treatment of Amoebic Liver Abscess and better tolerated than Metronidazole.

Based on this study we recommend that use of Tinidazole is a better choice for Amoebic Liver Abscess compared to Metronidazole.

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