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A COMPARATIVE STUDY BETWEEN MEDICAL THERAPY AND USG GUIDED ASPIRATION VERSUS MEDICAL THERAPY ALONE IN UNCOMPLICATED AMOEBIC LIVER ABSCESS IN A RURAL BASED TEACHING INSTITUTION

Surgery

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ABSTRACT

BACKGROUND- There are different views and protocols for the management of asymptomatic medium sized (4cm-8cm) ALA. Our aims to study the therapeutic efficacy of medical therapy alone and ultrasound guided needle aspiration of uncomplicated medium sized ALA.

METHODS- This prospective observational study was conducted in the Department of General surgery and Radiodiagnosis, Bankura Sammilani Medical College from March 2017 to August 2018. Total 56 patients were selected and divided into two groups , study group-I (N=31) and study group –II (N=25).

RESULTS- The mean change in VAS in study group I patients was 3.54 and in study group II patients it was 5.43. The mean change in size of abscess cavity at 72 hours in study group I patients was 0.48 cm and in study group II patients it was 0.96 cm.

CONCLUSION- Ultrasound guided needle aspiration in uncomplicated medium-sized ALA is better in subjective improvement in pain.

KEYWORDS

Amoebic Liver Abscess(ALA), Needle Aspiration, Visual analog scale(VAS), Total Leukocyte Count(TLC)

INTRODUCTION

Amoebic Liver abscess (ALA) is not only common health problem in India but also common in other tropical countries. Colonic amoebas are mainly responsible for the development of the ALA with clinical features of abdominal pain, fever, tender hepatomegaly, weight loss , alteration of LFT etc. It is also associated with high morbidity and mortality. The cornerstones of ALA treatment are nitroimidazole antibiotics such as metronidazole or tinidazole therapy. In combination with this drug treatment, three invasive therapeutic procedures can be performed 1)ultrasound guided needle aspiration 2) percutaneous catheter drainage 3) open surgical drainage, when these are indicated. There are different views and protocols for the management of asymptomatic medium sized (4cm-8cm) ALA.

AIMS AND OBJECTIVES

Our aims,

1) To study the therapeutic efficacy of medical therapy alone and ultrasound guided needle aspiration of uncomplicated medium sized ALA.
2) To study the safety and outcome of ultrasound–guided needle aspiration of ALA
3) To compare the two modalities of treatment of ALA.

MATERIALS AND METHODS

This study was conducted in the Department of General surgery and Radiodiagnosis, Bankura Sammilani Medical College, Bankura, India from March 2017 to August 2018 . This is a prospective observational study. Patients with ALA size ranging from 4cm to 8 cm and patients with multiple ALA, mainly those measuring 4cm to 8cm, who were admitted from casualty and outpatient department, were included in this study. Patients with Solitary left lobe abscesses, Impending rupture, Ruptured abscess, Jaundice were excluded from the study. Total 56 patients were selected and divided into two groups. Study group-I (n=31) patients were treated with only medical therapy (Metronidazole).Study group –II (n=25) patients were treated by ultrasound guided needle aspiration in addition to medical therapy (Metronidazole). Ultrasound guided needle aspiration was performed in the Department of Radiodiagnosis by using standard protocol. The patients were examined daily for clinical improvement of pain, fever, anorexia and hepatomegaly within 72 hrs of institution of therapy and this was considered, criteria for continuing that particular modality of treatment. Subjective assessment of pain was repeated after 72 hrs using Visual Analog Scale. The TLC and ultrasound examination of the abdomen was done at 72 hrs. All patients were followed up for 6 weeks. Patients of study group-I who showed worsening of symptoms after 72 hrs, were provided second modality of treatment. To compare the mean values between two groups, t-test for independent values was used while for paired values, paired t-test was used for quantitative data. Difference between two proportions was calculated by chi-square test for independent groups while for paired values, McNemar test was applied for qualitative data.

RESULTS

In this study we found 50 male and 6 female patients Mean age of study group-I was 39 years and in study group-2 the mean age was 35.4 years. Overall the maximum number of case (n=17) was between the age group 25-34 years (Table-1).

In the study (n =56), the mean duration of symptoms at presentation was 14.7 days. The mean duration of symptoms at presentation in study group I was 12.8 days and in study group II was 17.1 days(Table-2).

The mean change in VAS in study group I patients was 3.54 and in study group II patients was 5.43. The mean change in VAS at 72 hours in both study group was statistically significant. {$p<0.05(p=0.00)$}. The changes in between two groups at 72 hours was also statistically significant{$p<0.05(0.007)$}(Table-3).

The mean value of TLC at 72 hours in study group-I patients was 8038 cells/mm3 and it was 9202 cells/mm3 in study group II . The change in TLC at 72 hours in study group I & II were statistically significant {$p<0.05(p=0.00)$(Table-4).

The mean change in size of abscess cavity at 72 hours in study group I patients was 0.48 cm, while in study group II patients it was 0.96 cm. There was statistically significant difference in the change in size between the two groups{$p=0.00$} at 72 hours. The mean change in size of abscess cavity at 6 weeks in study group – I patients was 2.471 cm. and in study group – II, it was 2.471 cm. There was no statistically significant difference found between the two groups {$p>0.05(0.659)$} at 6 weeks follow up(Table5&6).

DISCUSSION

In our study, among 56 patients 50 patients were male and the maximum number of patients in the age group of 25-34 years . ALA has been reported mostly in the age group of 20-40 years in other studies [1].

The mean duration of symptoms at presentation in study group I was 12.8 days and in study group-II , it was 17.1 days. Different studies in literature showed that duration of symptoms ranges from 10 days to two weeks in acute stage. In the chronic stage, the longest duration was three years and the average from three to six months [2].

The mean value of TLC at admission was 14515 cells/mm3 in study group I with a range of 5100 to 34100 cells/mm3, while in study group –II, the mean value was 16,085 cells/mm3 with a range of 5500 to 28500 cells/mm3. Earlier studies had reported that the mean TLC to be 15000cells/mm3 with the range of 7500 cells/mm3 to 25000 cells/mm3 [2]. Other study showed mean TLC to be 19,100 cells/mm3 [3][4]. In this study, the change in TLC at 72 hours was found significant in both groups. ($p<0.05$).

The change in VAS in response to conservative management in study group – I and in response to needle aspiration in study group-II was significant. There was statistically significant difference in the VAS of pain with patients responding better to needle aspiration. In present study; clinical, biochemical and ultrasound findings at admission and at 72 hours were considered for continuation or failure of the particular modality of therapy. Three cases were shifted from study group I to study group-II and needle aspiration was done due to clinical deterioration . All the patients in whom initial needle aspiration was done, did not require change in modality of treatment. None of the patients in present study required CT scan or MRI for diagnosis or management. Medical management for uncomplicated amoebic liver abscess is indicated if size of abscess ≤ 5 cm [5][6][7][8],while therapeutic aspiration is indicated if the volume of abscess exceeds 200ml. In some studies, pigtail catheter insertion for management of ALA has also been reported with resolution of ALA being reported to occur earlier [9][10]. These studies had also reported that abscess of size >300cm3 should be aspirated. The similar results had been reported by other studies also[11][12].

In our Study, There was statistically significant decrease in pain after 72 hours in both the treatment groups, but more so in the aspiration group {p<0.05 (0.007)} . There was statistically significant difference in the change in size of ALA at 72 hours between the two modalities of treatment {p<0.05}. But at six weeks follow up, the difference in change of size of ALA in two treatment groups was not statistically significant {p>0.05(0.659)}.

CONCLUSION

The study reveals that Ultrasound guided needle aspiration in uncomplicated medium-sized (4 cm to 8cm) ALA is helpful because it shows better subjective improvement in pain and significant reduction in size of the abscess cavity at 72 hours. However, there is no significant change observed in the long term resolution of abscess cavity at 6 weeks in both modalities of therapy.

Table-1: Age distribution in study groups

	Age	<25 years	25-34 years	35-44 years	45-54 years	>55 years	Total
Study group-I	Count	2	12	7	5	5	31
	% within group	6.46%	38.7%	22.6%	16.12%	16.12%	100%
Study group-II	Count	5	5	9	5	1	25
	% within group	20%	20%	36%	20%	4%	100%
total	Count	7	17	16	10	6	56
	% within group	12.54 %	30.4%	28.5%	17.9%	10.7%	100%

Table-2: Duration of symptoms in study groups

		Duration of symptoms in days				
		<10	10-19	20-29	>29	Total
Group-I	count	12	16	1	2	31
	%within group	38.77%	51.6%	3.2%	6.5%	100%
Group-II	count	7	11	5	2	25
	%within group	28%	44%	20%	8%	100%
Total	count	19	27	6	4	56
	%within group	33.9%	48.2%	10.7%	7.2%	100%

Table-3:Visual Analog Score of pain in Study groups

	Study group-I (n)		Study group-II (n)	
VAS	At admission	At 72 hours	At admission	At 72 hours
0-2	2	20	2	22
3-5	11	07	7	1
6-8	14	0	10	2
9-10	4	4	6	0

Table-4: Change in TLC in study groups

	Study group-I (n)		Study group-II (n)	
TLC (cells/mm3)	At admission	At 72 hours	At admission	At 72 hours
<5000	0	4	0	1
<5001-10000	9	20	4	13
10001-15000	14	7	8	11
15001-20000	4	0	6	0
>20001	4	0	7	0

Table-5:change in size of abscess cavity at admission and at 72 hours

At admission			At 72 Hours		
Abscess Size (cm)	Study group I (n)	Study group II (n)	Abscess Size (cm)	Study group -I (n)	Study group -II (n)
<4	0	0	No change	0	0
4.1-5	0	0	0-0.5	14	0
5.1-6	5	3	0.6-1.0	16	15
6.1-7	16	6	1.1-1.5	1	10
7.1-8	10	16	>1.6	0	0

Table-6:Change in size of abscess cavity at 6 weeks follow up

Abscess size (cm)	Study group – I (n)	Study group – II (n)
<1	0	0
1.1 - 2	5	5
2.1 - 3	23	20
3.1 - 4	2	0
>4	1	0

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