

# Impact of Time and Location of Diagnostic Paracentesis on Outcomes of Spontaneous Bacterial Peritonitis

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## ABSTRACT

This study compared outcomes in 74 patients admitted to Duke Health System with Spontaneous Bacterial Peritonitis by location, either in the Emergency Department (ED) or the Internal Medicine (IM) floor, and timeliness of paracentesis.

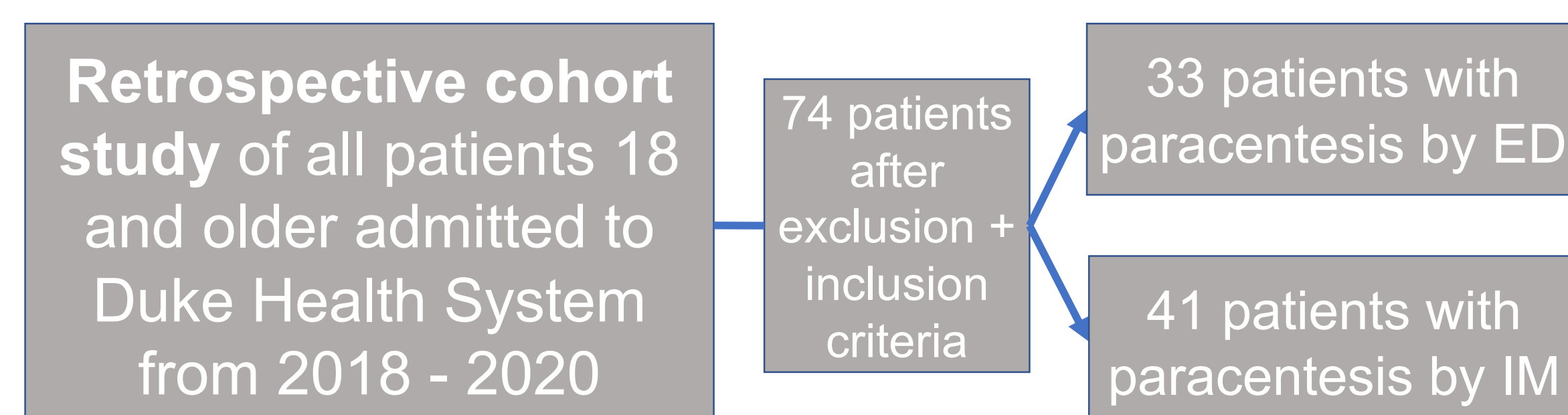
The median time to paracentesis in the ED was 4.8 hours compared to 21.1 hours by the IM service. Despite this time difference, location of paracentesis and completion of paracentesis prior to 12 hours did not significantly impact mortality and receipt of day 1 and 3 albumin.

These results may suggest that providers are more likely to initiate appropriate antibiotic therapy when SBP is suspected, so timing of paracentesis may not be as clinically important as time to treatment.

## INTRODUCTION

- Prior studies show higher inpatient mortality in hospitalized patients with cirrhosis and ascites who undergo diagnostic paracentesis 12 hours after first physician encounter.
- However, the initial location of patient presentation and its impact on time to paracentesis has not been thoroughly studied.
- This analysis compared outcomes in patients with Spontaneous Bacterial Peritonitis (SBP) by location, either in the Emergency Department (ED) or the Internal Medicine (IM) floor, and timeliness of paracentesis.

## METHODS AND MATERIALS



- Duke Health System includes Duke University Hospital, Duke Regional and Duke Raleigh Hospital
- Inclusion: Ascites with PMN > 250, positive ascites culture, or patients considered to have SBP by the inpatient GI/Hepatology consulting team who did not get diagnostic paracentesis due to anatomic safety considerations
- Exclusion: incarcerated patients or non-hepatobiliary ascites
- Chi square tests assessed association between time to and location of paracentesis and outcomes including albumin administration and mortality.

**Table 1: Outcomes by Location of Paracentesis**

	EM (N = 33)	IM (N = 41)	P-value
<b>Median Time to Paracentesis (hours)</b>	4.8	21.1	<0.001
<b>Day 1 and 3 Albumin Given</b>			
No	11 (33.3%)	7 (17.1%)	0.105
Yes	22 (66.6%)	34 (82.9%)	
<b>Inpatient Mortality</b>			
Yes	12 (36.4%)	7 (17.1%)	0.059
No	21 (63.6%)	34 (82.9%)	
<b>30-Day Mortality (2 unknown patients excluded from IM)</b>			
Yes	15 (45.5%)	9 (23.1%)	0.045
No	18 (55.5%)	30 (77.0%)	

**Table 2: Outcomes by Time to Paracentesis**

	< 12 hours (N = 43)	> 12 hours (N = 33)	P-value
<b>Day 1 and 3 Albumin Given</b>			
No	14 (32.6%)	5 (15.2%)	0.082
Yes	29 (67.4%)	28 (84.8%)	
<b>Inpatient Mortality</b>			
Yes	12 (27.9%)	8 (24.2%)	0.719
No	31 (72.1%)	25 (75.8%)	
<b>30-Day Mortality (2 unknown patients excluded from &lt; 12 hours)</b>			
Yes	15 (36.6%)	10 (30.3%)	0.57
No	26 (63.4%)	23 (69.7%)	

## RESULTS

- Median time to paracentesis in the ED was 4.8 hours compared to 21.1 hours by IM (p<0.001).
- Location of paracentesis did not significantly impact receipt of day 1 and 3 albumin administration (ED 66.7% vs IM 82.9%; p=0.09), inpatient mortality (ED 36.6% vs IM 17.1%; p=0.06), or 30-day mortality (ED 45.5% vs IM 22.0%; p=0.06).
- Completion of paracentesis before and after 12 hours did not significantly impact albumin administration rates (67.4% vs 84.9%; p=0.08), inpatient mortality (27.9% vs 24.2%; p=0.72), or 30-day mortality (36.6% vs 30.3%; p=0.57).

## DISCUSSION/CONCLUSIONS

- Diagnostic paracentesis is performed significantly sooner if done by ED rather than IM providers.
- However, the location and timeliness of the paracentesis did not alter mortality and albumin administration.
- Though limited by sample size, these results may suggest that providers are more likely to initiate appropriate antibiotics for suspected SBP given its morbidity, so time to paracentesis <12 hours may not be as clinically important as time to initiation of treatment.

## REFERENCES

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