



# Early Transjugular Intrahepatic Portosystemic Shunt (TIPS) Procedures in Acute Variceal Bleeding Hospitalizations (AVBH), NIS 2017-2019



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## Introduction

- Studies have demonstrated that “preemptive” early TIPS (< 72 hours of admission) placement during AVBH is associated with significantly lower treatment failure and inpatient and 1-year mortality rates in high-risk patients. We decided to analyze U.S. hospitalizations and compare outcomes by TIPS procedure timing in AVBH using the latest available largest national database.

## Methods

- Nationwide Inpatient Sample (NIS) was analyzed for adult hospitalizations with ICD-10 Diagnosis (I85.01) and procedure codes (06183J4). We divided the procedure timing category into early (<72 hours) and delayed (>72 hours). Mortality, length of stay (LOS), and mean charges (MC) were used as outcomes and compared between the two groups.

## Results

- A total of 640 TIPS procedures were extracted; 300 of which were performed in <72hrs of AVBH admission and 340 >72hrs. Sociodemographic data is presented in Table 1. There was significant male-to-female predominance in both procedure groups (73% vs. 27% in the early and 60% vs. 40% in the delayed group); Notably, a higher proportion of females received delayed TIPS. Preemptive TIPS was more likely to be placed in the younger age groups (30-49) when compared to older age groups (50+) who were more likely to undergo delayed TIPS.

**Table1. Sociodemographic Analysis of Early and Delayed TIPS Procedures in Acute Variceal Bleeding, NIS 2016-2019**

		TIPS <72hr %	95% CI		TIPS >72hrs%	95% CI	
<b>TIPS</b>	Total	100.0	100.0	100.0	100.0	100.0	100.0
<b>Age</b>	30-39	8.3	2.5	14.2	.	.	.
	40-49	11.7	3.9	19.4	8.8	3.1	14.5
	50-59	35.0	23.4	46.6	36.8	26.9	46.6
	60-69	31.7	20.9	42.5	35.3	25.7	44.9
	70-	13.3	5.1	21.6	19.1	10.5	27.8
<b>Gender</b>	Male	73.3	63.2	83.5	60.3	50.6	70.0
	Female	26.7	16.5	36.8	39.7	30.0	49.4
<b>Race</b>	White	70.0	59.5	80.5	70.3	61.1	79.5
	Black	3.3	0.0	8.0	4.7	0.0	9.9
	Hispanic	16.7	8.4	24.9	20.3	13.5	27.1
	Asian or Pacific Islander	5.0	0.0	10.5	1.6	0.0	4.7
	Native American /Others	5.0	1.7	8.3	3.1	0.0	7.4
<b>Primary payer</b>	Public	71.7	60.9	82.4	73.1	64.3	82.0
	Private/HMO	26.7	15.9	37.4	23.9	15.2	32.5

- White patients received preemptive TIPS versus delayed TIPS at a fairly equal frequency (70%), whereas Black (3.3%vs 4.7%) and Hispanic (16.7% vs. 20.3%) patients had slightly higher frequency of delayed TIPS placement. Asian/Pacific-Islander and Native American/Other patients demonstrated a tendency to have early TIPS placement. Inpatient mortality was 13.3% (95% CI: 5.2%-21.5%) in early and 10.3% (95% CI: 4.1%-16.5%) in the delayed group. MC were \$187,733 (95% CI: \$162,900-\$212,566) vs. \$208,428 (95% CI: \$166,329-\$250,527), and mean LOS was 7.6 days (95% CI 6.1-9.1) vs. 11.2 days (95% CI 9.3-13.2) for early and the delayed groups, respectively.

## Conclusion

- In AVBH early (<72hrs) TIPS placement reduces treatment failure, inpatient and 1-year mortality. Our analysis demonstrates that early and delayed TIPS are performed at equal frequency. Gender, age and racial disparities were demonstrated in choosing the timing of TIPS placement. Mortality was comparable between the groups. Studies with larger sample size would provide insight in magnitude of these results and guidance for management.

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