

**PS013****EARLY USE OF TIPS AND OUTCOMES IN PATIENTS WITH CIRRHOSIS AND ACUTE ESOPHAGEALVARICEAL BLEEDING: ANALYSIS OF THE U.S. NATIONWIDE INPATIENT SAMPLE DATABASE, 2000–2010**

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**Background and Aims:**

Recent evidence suggest that TIPS placement as primary therapy within 72 hours after esophageal variceal bleeding (EVB) in patients with high risk of treatment failure is associated with decreased recurrent bleeding and improved survival.

The purpose of this study was to investigate the impact of early TIPS on outcomes of patients with EVB.

**Methods:**

The nationwide inpatient sample (NIS) database was queried to identify patients with EVB from 2000 to 2010. Only patients with decompensated liver disease by Baveno V classification were included in our analyses because early TIPS is recommended in patients at high-risk of further bleeding and death despite endoscopic and medical therapy. The primary outcome measure was in-hospital death, and secondary outcomes were rebleeding, hepatic encephalopathy, sepsis, and length of hospital stay. Early TIPS was defined by placement within 3 days of hospitalization for acute EVB after one EGD with endoscopic therapy. Rescue TIPS was defined by 2 or more EGDs with endoscopic therapy or one EGD plus a nonendoscopic intervention for control of variceal bleeding (balloon tamponade, interventional radiology or surgery) prior to TIPS. Secular trends in age-adjusted mortality were characterized using Poisson regression models.

**Results:**

The study included 142,539 patients (68.2% males) with a discharge diagnosis of EVB. The median age was 55 (IQR 40–60) years. From 2000 to 2010, the age-adjusted in-hospital mortality rate decreased 37.2% from 656 per 100,000 to 412 per 100,000 ( $p < 0.01$ ). Utilization of TIPS (Early and Rescue) significantly increased over the study period (0.22–0.70%,  $p < 0.01$  and 1.1–6.1%,  $p < 0.01$  respectively). Poisson regression analysis showed a significant inverse association of TIPS utilization and the mortality rate ratio of EVB from 2000 to 2010 (RR 0.88; 95% CI 0.83–0.92). Early TIPS had a lower rate of in-hospital death compared to No TIPS and Rescue TIPS, (1.5% vs. 5.6%;  $p < 0.01$  and 1.5% vs. 8.1;  $p < 0.01$ , respectively). The table summarizes the results of the multivariable analysis.

Outcome			P value	RR* (95% CI)	P value
<b>Early TIPS versus No TIPS</b>	<b>Early TIPS</b>	<b>No TIPS</b>			
In-hospital death	1.5%	5.6%	<b>&lt;0.01</b>	0.87 (0.84, 0.90)	<b>&lt;0.01</b>
In-hospital rebleeding	0.5%	15.4%	<b>&lt;0.01</b>	0.56 (0.45, 0.71)	<b>&lt;0.01</b>
Hepatic encephalopathy	30.1%	27.3%	0.19	1.01 (0.93, 1.11)	0.62
Sepsis	7.5%	7.1%	0.38	1.28 (0.75, 2.19)	0.40
Mean length of stay (days) <sup>b</sup>	5.1	4.7	0.05	0.6 (-0.3, 1)	0.18
Mean hospitalization cost (U.S. \$) <sup>b</sup>	42,789	34,354	<b>&lt;0.01</b>	8,226.68 (3,807.33 to 18,137.42)	<b>&lt;0.01</b>
<b>Early TIPS versus Rescue TIPS</b>	<b>Early TIPS</b>	<b>Rescue TIPS</b>			
In-hospital death	1.5%	8.1%	<b>&lt;0.01</b>	0.85 (0.82, 0.88)	<b>&lt;0.01</b>
In-hospital rebleeding	0.5%	2.2%	<b>&lt;0.01</b>	0.57 (0.50, 0.64)	<b>&lt;0.01</b>
Hepatic encephalopathy	30.1%	29.5%	0.15	0.97 (0.95, 1.02)	0.22
Sepsis	7.5%	7.3%	0.22	0.83 (0.66, 1.04)	0.32
Mean length of stay (days) <sup>b</sup>	5.1	9.6	<b>&lt;0.01</b>	-4.6 (-5.1 to -4.3)	<b>&lt;0.01</b>
Mean hospitalization cost (U.S. \$) <sup>b</sup>	42,789	58,982	<b>&lt;0.01</b>	-7,288.37 (-8,922.45 to -6,697.62)	<b>&lt;0.01</b>

### Conclusions:

A significant inpatient mortality improvement in EVB among decompensated cirrhotics in the U.S. was seen from 2000 to 2010. In addition, TIPS was increasingly utilized during this time period. The early use of TIPS as a primary treatment was associated with significant short-term reductions in rebleeding and mortality without a significant increase in encephalopathy or sepsis in “realworld” U.S. clinical practice.