

COMPARISON OF OUTCOMES IN PATIENTS WITH BUDD-CHIARI SYNDROME UNDERGOING TRANSJUGULAR PORTOSYSTEMIC SHUNT

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INTRODUCTION

- Budd-Chiari Syndrome (BCS) is a relatively rare condition with incidence of roughly 0.1 to 10 per million, caused by impaired venous outflow at the level of hepatic veins and inferior vena cava.
- Management of BCS is based on step wise approach, ranging from systemic anticoagulation therapy, endovascular procedures to establish venous patency, Trans Jugular Portosystemic Shunt (TIPS) to Orthotic liver transplant.
- Among all the treatment options for BCS, TIPS has got a pivotal role in last decade.

METHODS

- Adult patients admitted with BCS, who had TIPS and without TIPS were analyzed from September 2015 to December 2019 using the National Inpatient Sample database.
- The primary outcome was to determine the baseline characteristics of the BCS patients who got TIPS. Secondary outcomes included all-cause in-hospital mortality, length of stay (LOS), and total hospital costs.
- SAS 9.4 software was used for statistical analysis.

RESULTS

- Out of 14,210 patients admitted with BCS, 200(1.4%) had TIPS procedure done as a part of their treatment.
- TIPS cohort consists of patients who are younger in age (38.9 ± 14.7 vs. 52.4 ± 16.4 yrs.). There was no significant gender disparity observed in our study.
- Comorbidities like hypertension, coronary artery disease, diabetes, peripheral vascular disease, Hep C, metastatic cancer were higher in the group which did not have TIPS procedure done. In the contrary, chronic liver disease, coagulopathy and myeloproliferative disorder noted to be higher in TIPS receiving population.
- Complications like portal hypertension, vascular graft associated complications, cirrhosis, portal vein thrombosis, Hepatorenal syndrome were noted to be significantly higher in patients receiving TIPS.
- TIPS subgroup has significantly lower in hospital mortality(2.5% vs 7.5%, p=0.007) with mortality adjusted odds ratio of 0.38(0.15-0.96; p=0.04). Total LOS and hospital cost noted to be higher in TIPS group.
- Furthermore, our study showed decreased need for acute/subacute rehab facility upon discharge (2.5% vs 12.4%) in patient receiving TIPS.

TABLES

Table 1. Baseline characteristics, comorbidities of BCS patients with TIPS vs BCS patients without TIPS.

Variables	BCS with TIPS N=200(1.4%)	BCS without TIPS N=14,010(98.6%)	P- Value
Age, in years (Mean ± SD)	38.9 ± 14.7	52.4 ± 16.4	<0.001
Age groups, %			<0.001
18 - 40 years	62.5%	26.2%	
41 – 60 years	27.5%	38.6%	
61 – 80 years	10%	31.6%	
>80 years	0%	3.6%	
Gender, %			0.14
Male	42.5%	47.7%	
Female	57.5%	52.3%	
Race, %			0.46
Caucasians	65%	60.8%	
African Americans	12.5%	14.7%	
Others	22.5%	24.4%	
Comorbidities, %			
Hypertension	30%	41.3%	0.001
Diabetes mellitus	7.5%	20.7%	<0.001
Congestive heart failure	2.5%	10.8%	0.0002
CAD*	2.5%	10.6%	0.0002
Peripheral vascular disease	5%	6.1%	0.52
COPD*	10%	14%	0.10
Renal failure	10%	12.8%	0.23
Chronic liver disease	77.5%	34.3%	<0.001
Metastatic cancer	2.5%	10.2%	0.0003
Coagulopathy	52.5%	26.5%	<0.001
Obesity	12.5%	13.6%	0.64
Alcohol abuse	5%	10.5%	0.01
Smoking	15%	35.3%	<0.001
Primary hypercoagulable state	5%	9.8%	0.02
Myeloproliferative disorder	25%	6.7%	<0.001
Hepatitis C	2.5%	7.9%	0.004
Insurance type, %			<0.001
Medicare	7.5%	35.6%	
Medicaid	20%	21.7%	
Private	62.5%	34.9%	
Other	10%	7.8%	
Location/Teaching status of the hospital, %			<0.001
Rural	0%	4.8%	
Urban nonteaching	0%	15.1%	
Urban teaching	100%	80.2%	

Table 2. Outcomes of BCS patients with TIPS vs BCS patients without TIPS.

Outcomes	BCS with TIPS N=200(1.4%)	BCS without TIPS N=14,010(98.6%)	p-value
In-hospital mortality, %	2.5%	7.5%	0.007
Mortality adjusted odds ratio	0.38(0.15 – 0.96)		0.04
Length of stay, in days (mean ± SD)	8.4 ± 7.6	7.8 ± 10.1	0.6
Total hospitalization cost, in US \$ (mean ± SD)	44290 ± 33963	26223 ± 50052	0.001
Disposition, %			<0.001
Discharge to home	87.5%	56.3%	
Transfer other: includes Skilled Nursing Facility, Intermediate Care Facility, or another type of facility	2.5%	12.4%	
Home health care	7.5%	17.3%	
Against medical advice	0%	1.1%	

CONCLUSION

Our study showed patients with BCS who received TIPS have less comorbidities and more post procedural complications compared to the BCS patients who haven't received TIPS. Significant decrease in mortality was also observed post TIPS. More detailed studies are warranted in this field to determine safety and efficacy of TIPS in BCS patients.