Incidence and Clinic Predictors of Portal Vein Thrombosis (PVT) in Acute Pancreatitis: A Nationwide Analysis

Hunza Chaudhry[1], Aalam Sohal[1], Armaan Dhaliwal[2], Kanwal Bains[3], Gagan Gupta[4], Piyush Singla[4], Raghav Sharma[5], Sohail Sodhi[6], Dino Dukovic[7], Jayakrishna Chintanaboina[8]

[1]Department of Internal Medicine, University of California, San Francisco- Fresno, CA, [2]Department of Internal Medicine, University of Arizona, South Campus- Tucson, AZ, [3] Department of Clinical Nutrition, Brigham and Women's Hospital- Boston, MA, [4]Dayanand Medical College and Hospital- India, [5]Punjab Institute of Medical Sciences- India, Department of Internal Medicine, [6]Rutgers Health/Trinitas Regional Medical Center, Elizabeth, NJ, [7]Ross University School of Medicine- Barbados, [8]Department of Gastroenterology and Hepatology, University of California, San Francisco- Fresno, CA

UCSF Fresno

Introduction

- Portal vein thrombosis (PVT) is a well-known complication in patients with acute pancreatitis (AP).
- Limited data exist on the incidence and factors associated with PVT in patients with AP.
- We investigate the incidence and clinical predictors of PVT in hospitalized patients with AP between 2016-2019.

Methods

- We queried the 2016-2019 National Inpatient Sample (NIS) database using ICD-10 codes.
- All adult patients with a diagnosis of AP (ICD10 K85) were included, while patients with chronic pancreatitis were excluded from the analysis.
- We studied demographics, comorbidities, complications, and interventions in patients with acute pancreatitis and stratified the results by the presence of PVT.
- Multivariate analysis was conducted to elucidate factors associated with PVT in patients with acute pancreatitis.
- We adjusted for patient demographics, hospital characteristics, elixhauser comorbidities, and common complications of pancreatitis.
- We also studied the effect of PVT on length of stay, total hospitalization charge and mortality.

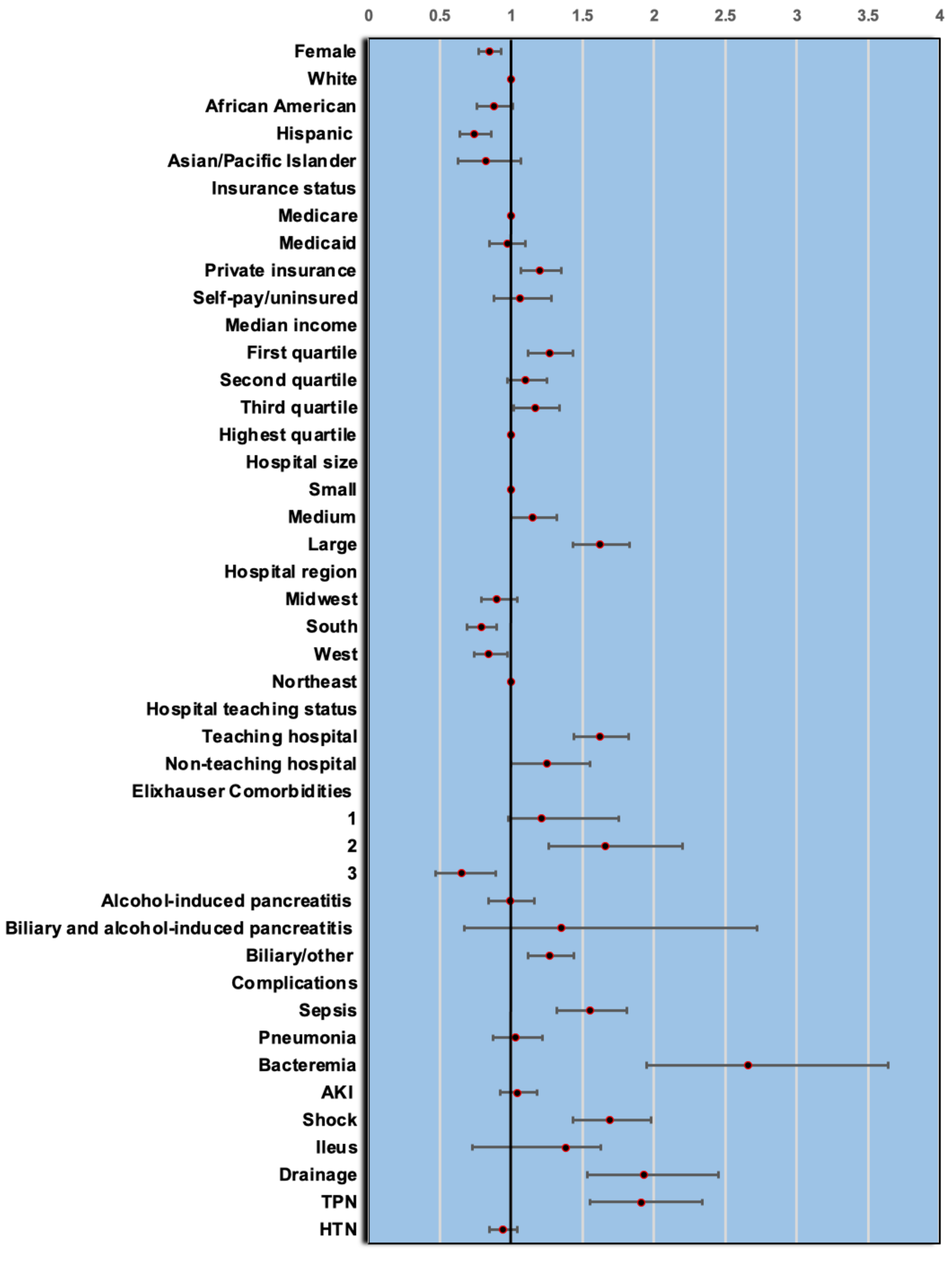

Table 1: Forrest plot of the results.

Results

- Of the 1,386,389 adult patients admitted with AP, 11,135 (0.8%) patients had PVT. A complete list of patient characteristics is presented in Table 1.
- Female gender was associated with a 15.3% lower risk of developing PVT (aOR-0.847, p-<0.001).
- There was no significant difference between the age groups (18-44, 45-64, and >65 years) on the risk of developing PVT.
- Hispanic patients had the lowest risk of PVT (aOR-0.74, p<0.001) while White patients had the highest risk of PVT.
- PVT was associated with pancreatic pseudocyst (aOR-4.15, p<0.001), bacteremia (aOR-2.66, p<0.001), sepsis (aOR-1.55, p<0.001), shock (aOR-1.69, p <0.001) and ileus (aOR-1.38, p<0.001).
- The presence of PVT was associated with a higher risk of mortality (aOR-1.35, 95% CI-1.09-1.66, p<0.001), a longer length of stay (+4.02 days, p<0.001), and total hospitalization charge ($43,592.1, p<0.001) as compared to patients without PVT.

Conclusion

- Our retrospective analysis demonstrated that a significant association exists between portal vein thrombosis and factors such as pancreatic pseudocyst, bacteremia, and ileus in patients with AP.
- Thrombotic events are a known complication of AP and should be evaluated and managed diligently.
- Physicians should be aware of the factors associated with PVT as its presence portends to poor prognosis.