

Anticoagulation in Cirrhosis Patients with Coagulopathies and Venous Thromboembolisms

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ABSTRACT

Purpose: Complications of advanced liver disease include coagulopathies and portal hypertension, which together can result in the development of portal vein thrombosis (PVT), a type of venous thromboembolism (VTE) almost exclusively seen in decompensated cirrhosis. Due to the coagulopathies present, the anticoagulation choice for treatment of PVT and other VTEs becomes problematic. There is limited evidence available about what anticoagulant, if any, physicians are utilizing in this clinical scenario, and whether direct oral anticoagulants (DOACs) have a place in hepatic disease. The objective of this study was to evaluate the use of anticoagulants in patients with liver cirrhosis that develop VTE.

Methods: This was a single center retrospective chart review approved by the site's institutional review board. This study assessed anticoagulation treatment regimens, including the choice to not use an anticoagulant, for patients with cirrhosis that developed VTE between May 2014 and May 2021. Patients required a diagnosis of PVT or other VTE, deep vein thrombosis (DVT) or pulmonary embolism (PE) with concurrent liver cirrhosis. The Child-Turcotte-Pugh Classifications were used to categorize severity of liver disease.

Results: A total of 117 patients were analyzed. Of those included, 73 (62.4%) had PVT and 44 (37.6%) had either DVT or PE. Anticoagulation was utilized in 67 (57.3%) patients, with 14 (20.9%) patients receiving a DOAC. For patients with PVT, there was a statistically significant difference between Child-Turcotte-Pugh Classification and type of anticoagulation received, with the most common regimen being no anticoagulation ($p = 0.008$). No anticoagulation was

chosen in 6 (40%) patients that were class A, 21 (77.8%) that were class B, and 20 (83.3%) that were class C. Patients with PVT were less likely to receive the standard of care (SOC), of warfarin or enoxaparin, with liver cirrhosis progression. For those that were class A, 5 (33.3%) received SOC, compared to 6 (22.2%) that were class B, and 3 (12.5%) that were class C. For DOAC use in PVT, 4 (26.7%) patients in class A, zero in class B, and 1 (4.2%) in class C received a DOAC. Platelets and hemoglobin were significantly higher in patients receiving anticoagulation, with a median of 154,000 per μ L and 12.2 g/dL vs 125,000 per μ L and 10.7 g/dL in those with no anticoagulation ($p = 0.003$ and $p = 0.001$ respectively).

Conclusion: Physicians are starting to prescribe DOACs in patients with liver impairment. However, with limited data on DOAC use in this patient population and the problems that exist with other options, the risks of anticoagulation often outweigh the potential benefit in the treatment of PVT, leaving physicians to avoid the use of anticoagulation in many of these patients.