35.99 - Cardiovascular Disease in Special Populations, Other

90132
Assessing The Utility of D-Dimer Driven Anticoagulation Strategies In Severely Obese Patients With COVID-19

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Background: Many studies to date have documented significant inflammatory vascular sequelae in association with COVID-19. Current guidelines suggest an initial strategy of therapeutic-dose anticoagulation to non-critically ill, hospitalized patients requiring low-flow oxygen and a concurrent D-dimer level above the upper limit of normal. However, the utility of D-dimer values in predicting thrombosis in severely obese patients are equivocal to poor, with prior evidence suggesting falsely elevated levels with greater BMI. Given the weight-based dosing of heparin, these patients may also be inadvertently at elevated risk for major bleeds.

Purpose: To examine the utility of D-dimer levels in risk stratification and anticoagulation therapy in non-critically ill COVID-19 patients with severe obesity.

Methods: In this single-center, retrospective study, 32 severely obese patients (defined as BMI > 40) hospitalized with COVID-19 and requiring low flow oxygen delivery, without ICU level of care were analyzed. Clinical outcomes were compared between groups receiving therapeutic versus prophylactic doses of anticoagulation. All were treated with low molecular weight heparin (LMWH) per hospital protocol. The following data points were examined: length of hospitalization, mortality, anticoagulation therapy, initial d-dimer levels, thrombotic events, minor/major bleeds, and oxygen modality.

Results: In total, 78% of patients initially presented with a D-dimer level above the upper limit of normal, with 53% of patients meeting criteria for therapeutic anticoagulation. However, there were no significant differences in incidence of thrombotic events, mean length of hospitalization or overall mortality. Furthermore, despite utilization of appropriate therapeutic anticoagulation, it did not reduce the overall use of oxygen support requirements, including high flow oxygen or non-invasive ventilation, when compared to individuals receiving prophylactic dosing.

Conclusion: The clinical utility of D-dimer levels for guiding anticoagulation therapy in severely obese patients with COVID-19 may be limited. Here, we demonstrate that therapeutic dose approaches have nonsignificant differences in clinical outcomes when compared to prophylactic doses in this distinct population.