**High Dose Unfractionated Heparin Thromboprophylaxis**  
**in Obese Patients with Chronic Kidney Disease**

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Background

Obesity is an independent risk factor for thrombosis, further compounded by conditions requiring hospitalization. Chemical thromboprophylactic agents reduce thrombotic risk in the general hospitalized population, but recommended doses may not adequately lower thrombotic risk in obese patients. Many institutions have implemented weight-based chemical thromboprophylactic protocols for these patients. Few of these protocols, if any, address additional thrombotic and hemorrhagic risk factors such as chronic kidney disease (CKD) and critical illness. A retrospective study of obese hospitalized patients on weight-based venous thromboembolism (VTE) prophylactic agents incidentally observed more bleeding events in patients with renal impairment than in patients without. This may suggest a different risk-benefit profile for patients with impaired renal function that should be explored

Objective

To measure bleeding risk of high dose unfractionated heparin (hd-UFH) relative to standard dose unfractionated heparin (sd-UFH) in critically ill obese patients with CKD.

Methods

This retrospective cohort study evaluated critically ill morbidly obese adult patients with CKD who received VTE prophylaxis, either hd-UFH (7500 units every 8 hours) or sd-UFH (5000 units every 8 hours). The study included hospital encounters occurring after widespread implementation of high-dose UFH or standard-dose UFH regimens from January 1, 2016 through December 31, 2021. The primary outcome of the study is a composite of major bleeding and clinically relevant non-major bleeding during hospitalization as defined by the International Society of Thrombosis and Haemostasis (ISTH). The secondary outcome is in-hospital VTE events. For both primary and secondary outcomes, the proportion of patients with the outcome of interest will be compared between groups with accompanying risk ratios and 95% confidence intervals.

Results

A total of 747 patients meeting study criteria were identified for patient medical record review. Of these, 61 were administered at least 3 doses of hd-UFH, 492 were administered at least 3 doses of sd-UFH, and 194 were administered both during their hospital encounter. Medical record review is on-going and is expected to conclude mid-May 2022.

Conclusions

This is a work in progress.