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EPOETIN ALFA PRESCRIBING IN PATIENTS WITH MYOCARDIAL INFARCTION OR STROKE

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INTRODUCTION: Erythropoietin stimulating agents (ESAs) are used to treat anemia due to chronic kidney disease (CKD). These agents carry a US Boxed Warning for death, myocardial infarction (MI), and stroke (CVA), with higher risk in patients with higher hemoglobin (Hgb). Although dose reduction is recommended when Hgb nears normal levels, the optimal management of ESAs in patients admitted for MI or stroke is unknown. The purpose of this study was to characterize ESA prescribing practices for patients admitted for MI or stroke.

METHODS: This was a single-center, retrospective cohort study including adult patients with CKD admitted for MI or CVA from 1/1/15 to 11/30/21 who were on an ESA prior to admission. Patients were excluded for baseline Hgb obtained > 24 hours after admission, admission Hgb < 7 g/dL, or length-of-stay < 3 days. Patients were stratified by admission Hgb (7 to 9.9 g/dL, 10 to 11.4 g/dL, 11.5 to 13 g/dL, and > 13 g/dL). Patients were categorized as having their home ESA dose continued, increased, decreased, held (not ordered for duration of hospitalization or at least 2 weeks) or discontinued (not ordered during hospitalization and no plan to resume on discharge). The primary endpoint was the composite of ESA decreased/held/discontinued vs. continued/increased by admission Hgb. Secondary endpoints included 30-day mortality and 30-day readmission for thrombosis.

RESULTS: Sixty-one patients were included, 35 (57%) with MI and 26 (43%) with CVA. Twenty-five patients (41%) had a history of MI or CVA prior to admission. Twenty-four patients (39%) had their ESA continued/increased and 37 (61%) had their ESA decreased/held/discontinued. Patients with higher Hgb were more likely to have their ESA decreased/held/discontinued (p=0.048). A higher proportion of patients in the ESA continued/increased group were readmitted for thrombosis within 30 days (12.5% vs. 5.4%) but this was not statistically significant. There was no difference in 30-day mortality.

CONCLUSIONS: Patients with CKD treated with ESAs admitted for MI or CVA are often continued on ESAs despite US Boxed Warnings for thrombosis and death. Patients with higher admission Hgb are more likely to have their ESA decreased, held, or discontinued. The optimal management of ESAs in patients presenting with MI or CVA should be further explored.

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FIXED-DOSE FOUR-FACTOR PCC FOR THE REVERSAL OF FACTOR XA INHIBITOR-ASSOCIATED BLEEDING

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INTRODUCTION: Four-Factor PCC (4F-PCC) is labeled for the reversal of vitamin K antagonists and may be considered off label for the reversal of factor Xa inhibitors. A fixed-dose strategy of 4F-PCC for the reversal of factor Xa inhibitors has the potential to minimize delay to reversal, avoid confusion during the ordering process, and lead to cost savings. The purpose of this study is to evaluate the safety and efficacy of fixed-dose 4F-PCC for the management of life-threatening bleeds associated with factor Xa inhibitors.

METHODS: This was a single center retrospective chart review conducted from May 2019 to January 2022. Patients were included if they were 18 years or older, experienced a life-threatening bleed while on a factor Xa inhibitor, and received 4F-PCC at a fixed dose of 2000 units. Exclusion criteria included: reversal for non-emergent surgery, receipt of 4F-PCC at an outside hospital, and/or receipt of an additional reversal agent. The primary outcome was achievement of hemostasis using a hemostatic effectiveness scale described by Sarode et al. Secondary outcomes included incidence of thrombosis within seven days of 4F-PCC administration and mortality.

RESULTS: A total of 39 patients received 4F-PCC for the reversal of a factor Xa inhibitor; 26 patients had central nervous system (CNS) bleeding and 13 had a non-CNS bleed. Overall 49% achieved excellent hemostatic effectiveness, 3% achieved good hemostatic effectiveness, 28% achieved poor, and in 20% we were unable to assess hemostatic effectiveness. In the subset of patients with CNS bleeding, 61% had either excellent or good effectiveness, 8% had poor, and 31% were unable to assess. There was one patient who experienced thromboembolism within seven days of reversal. In-hospital mortality was 18%.

CONCLUSIONS: The results of this study demonstrate that a fixed-dose 4F-PCC dosing strategy for the reversal of factor Xa inhibitors produces reasonable hemostatic effectiveness and is safe. The rates of effectiveness seen in the subset of patients with CNS bleeding are similar to what has previously been reported for a weight-based dosing strategy. Randomized prospective studies are needed comparing 4F-PCC to andexanet alfa, the FDA labeled reversal agent for factor Xa inhibitors.