• 4-factor PCC is a single agent indicated for the urgent reversal of acquired coagulation factor deficiency induced by vitamin K antagonist therapy, such as warfarin, in adult patients with need for urgent surgery, invasive procedure or acute major bleeding. It is also used off-label with limited data for the reversal of life-threatening hemorrhage associated with non-vitamin K antagonist anticoagulation. 

• Currently at our hospital, there is an established protocol for 4-factor PCC in the setting of warfarin reversal, but not for non-warfarin reversal.

• The purpose of this study was to evaluate appropriate usage of 4-factor PCC based on indication and dosage in patients requiring urgent anticoagulation reversal.

Inclusion Criteria:
• All patients who received 4-factor PCC at the study institution

Dates:
• March 1, 2018 to August 31, 2018

Data Collected:
• Patient demographics: (sex, age, height, weight, BMI)
• Drug reversed
• Indication for anticoagulation
• Location of bleed
• Dose administered
• Baseline and follow-up INR, PT and PTT as appropriate
• Other factors or blood products utilized
• Surgical or procedural interventions required

Based on the results, we conclude that 4-factor PCC was appropriately indicated in 100% of the cases between March 1, 2018 to August 31, 2018.

4-factor PCC was correctly dosed in 54% of total patients included in the review
• 83% of warfarin reversals
• 29% of non-warfarin reversals

4-factor PCC was mostly used for the reversal of non-warfarin agents, such as direct oral anticoagulants (DOACs) with the exception of dabigatran
• 54% of the cases involved DOACs
• 46% of the cases involved warfarin

Comparison of baseline, post treatment, and average levels show an improvement of INR for warfarin
• Minimal changes in PT and PTT for apixaban and rivaroxaban

The overall mortality rate of patients receiving 4-factor PCC in our sample was 15%

Overall, we see the need for developing a protocol for non-warfarin reversal at our institution to facilitate choosing the correct dosages in life-threatening bleeds. We also recommend adding reversal agents for individual DOACs as they become available.

References


