



Pharmacists decrease number of protocol discordant four-factor prothrombin complex concentrate orders for oral anticoagulant-associated intracranial hemorrhage in a community emergency department

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BACKGROUND

- Four-factor prothrombin complex concentrate (4F-PCC) is used for the reversal of oral anticoagulant-associated intracranial hemorrhage (ICH)
- Appropriate dosing, accurate laboratory and imaging monitoring, and rapid administration of 4F-PCC reduces hematoma expansion and decreases length of stay
- 4F-PCC dosing is commonly protocolized to ensure quality, safety, and reduce medication errors

DESIGN & PURPOSE

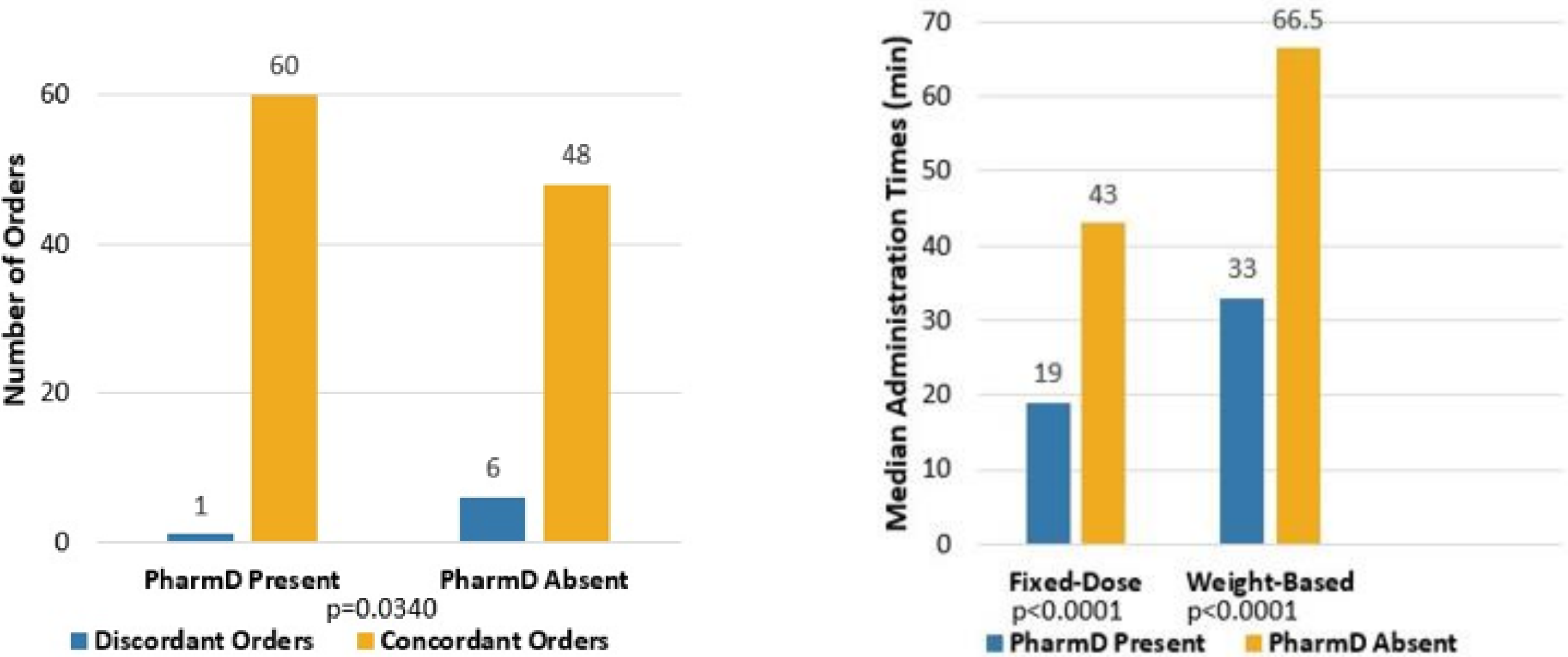
- Single-center, retrospective, chart review including patients who received 4F-PCC for oral anticoagulant-associated ICH during their emergency department (ED) admission from January 2016 to December 2022
- The purpose of this study is to determine if pharmacist presence in the ED decreases protocol discordant 4F-PCC orders in two different protocols periods – weight-based (WB) and fixed-dose (FD)

CONCLUSION

Pharmacist presence demonstrated a significant **reduction** in protocol discordant 4F-PCC orders for the reversal of oral anticoagulant-associated intracranial hemorrhage.

RESULTS

| Demographics | | | |
|------------------------------|-------------|-------------|---------|
| | WB (n=75) | FD (n=36) | p-value |
| Age, mean (SD) | 77.2 (13.7) | 73.1 (11.8) | 0.1063 |
| Female, n (%) | 34 (68) | 16 (32) | 0.9298 |
| Anticoagulant, n (%) | | | |
| Warfarin | 24 (68.6) | 11 (31.4) | 0.2516 |
| Apixaban | 25 (58.1) | 18 (41.9) | |
| Rivaroxaban | 24 (77.4) | 7 (22.6) | |
| Unknown | 2 (100) | 0 (0) | |
| Received 4F-PCC, n (%) | 73 (69.5) | 32 (30.5) | 0.0655 |
| EM Pharmacist Present, n (%) | 39 (63.9) | 22 (36.1) | 0.3664 |



METHODS

| | |
|--------------------|---|
| Primary Outcome | Incidence of 4F-PCC order discordance with institutional protocol |
| Secondary Outcomes | Time to administration |
| | Additional 4F-PCC request |
| | Discharge status |
| | Length of stay |

| Inclusion | Exclusion |
|---|---|
| <ul style="list-style-type: none">Patients ≥18 yearsPatients on an oral anticoagulant presenting to the ED with an ICH | <ul style="list-style-type: none">Patients <18 yearsPregnant patients |

LIMITATIONS

- Small sample size
- Short transition time for EM physicians to comply with protocol changes
- Changes in electronic order sets lagged behind protocol changes complicating order entry and verification

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