

Optimising Warfarin Reversal: A Prospective Evaluation of Four-Factor Prothrombin Complex Concentrate (4F-PCC)

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1. BACKGROUND

*"A life in bleed, a fragile thread,
Dose with care, the clock won't wait.
One swift choice, or one more dead,
Restore the balance, before its too late."*

- 4F-PCC is the preferred agent for emergency warfarin reversal; however, dosing varies by product.
- At HKL, a simplified dosing strategy was developed based on available evidence and a consensus between the emergency, pharmacy, and haematology departments.

HKL 4F-PCC Dosing Guide

(A) INR level is available

Intended INR	2.0 – 2.5	2.6 – 3.0	3.1 – 3.5	3.6 – 10.0	> 10.0
≤ 1.2 (full reversal)	30 IU/kg	35 IU/kg	40 IU/kg	50 IU/kg	50 IU/kg
≤ 2.0 (partial reversal)*	15 IU/kg	25 IU/kg	25 IU/kg	30 IU/kg	40 IU/kg

*HKL consensus

Note: single dose/total dose within 6 hours cannot exceed 3000 IU

(B) INR level is NOT available, major/ life threatening bleeding

1st dose - 2000 IU (fixed dose)²

- Repeat coagulation profile
- If still has persistent bleeding & INR remains elevated

2nd dose:

Repeated INR	1.5 – 1.9	≥ 2.0
Dose (fixed)*	500 IU	1000 IU

- If INR remains elevated >6h after the 1st dose & persistent bleeding, refer weight-based dosing table



IMPORTANT:
Repeat coagulation profile 15 – 60 minutes after completion of Octaplex® infusion

2. OBJECTIVE

- To evaluate the efficacy and safety of 4F-PCC (Octaplex®) in reversing warfarin anticoagulation

3. METHODS

- Prospective, Single-Arm, Open-Label, Single-centre Study
- All adult patients on warfarin who received 4F-PCC for reversal
- 06/2023 to 03/2025 (22 months)
- Hospital Kuala Lumpur
- Sampling method** – Total population
- Primary endpoints**
 - Target INR achievement
 - In-hospital all-cause mortality
 - ADRs

4. RESULTS

Demographics



N=34

Mean age 66.1 (±8.7)

61.8%

Top 2 Warfarin Indication



15 (44.1%)



14 (41.2%)

Reasons for Reversal



25 (73.5%)



6 (17.6%)



2 (5.9%)



1 (2.9%)

Major bleeding

Non-Major bleeding

Emergency procedure

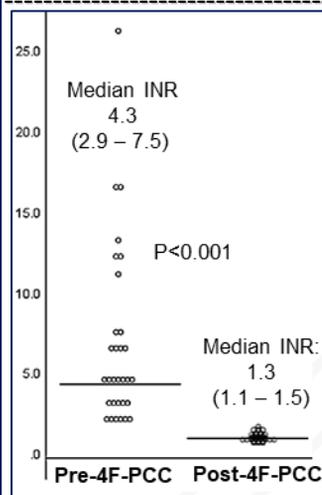
High INR only

Top 2 Bleeding Sites



12 (35.3%)

*Both same



Median dose: 35.0 (30.0 – 47.2) IU/kg

Target INR Achievements

87.1%



0%



P=0.025



P=0.017

32.4%



P=0.017



P=0.005

5. DISCUSSION

- Achievement of target INR correction is comparable to other studies (48.5 - 90.6%)
 - ✓ Good effectiveness of current dosing strategy. 🍊
- Mortality - higher than 3 – 30% in other studies
 - ✓ High mortality risk in our population
 - ✓ Need for early risk stratification and optimise reversal management in the ED

6. CONCLUSION

- This study confirms the effectiveness of weight-based 4F-PCC dosing in achieving INR reduction without ADRs.
- However, in-hospital mortality remained high in warfarin-related bleeding.
- These findings underscore the importance of rapid recognition, accurate weight estimation, and timely 4F-PCC administration to improve patient outcomes.

Keywords:

4F-PCC, warfarin, bleeding

References

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