Response to Letter to the Editor: Prothrombin Complex Concentrates in Warfarin-Associated Intracranial Hemorrhage

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Drs. Peled and Nguyen point out inherent statistical limitations in small, non-randomized cohort studies. Although the commenters note that PCC was used less often in patients with relative contraindications (myocardial infarction, peripheral artery disease) in our study, this was not, in fact, the case. Indeed, these patients were just as likely to receive a combination of FFP and PCC.

Ultimately, coagulopathy-associated intracranial hemorrhage is relatively uncommon and difficult to study in large numbers, which may be a major reason why no large randomized trial has yet been conducted in this population. Even in the Sarode trial [1], which is currently the largest and the most robust trial of PCC versus FFP, only 12 % of patients, constituting 24 total patients, had intracranial hemorrhage. Therefore, we believe that our report of 64 intracranial hemorrhages still represents a meaningful contribution to the literature. Furthermore, given the limited

number of intracranial hemorrhage patients in the Sarode trial, a more robust, randomized trial in this patient population would be needed to provide a more definitive answer to the question of PCC versus FFP for coagulopathy reversal. Until then, our paper offers a suggestion that PCC may be a valuable tool for coagulopathy reversal in warfarin-associated ICH.

Reference

1. Sarode R, Milling TJ Jr, Refaai MA, Mangione A, Schneider A, Durn BL, Goldstein JN. Efficacy and safety of a 4-factor prothrombin complex concentrate in patients on vitamin K antagonists presenting with major bleeding: a randomized, plasma-controlled, phase IIIb study. *Circulation*. 2013;128(11):1234–43.

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