

Radial Cocktail for Radial Access in the Setting of Trauma Angiography and Embolization

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BACKGROUND

Radial artery access has seen increasing popularity in interventional radiology (IR), including in emergent settings such as for **trauma angiography and/or embolization**. With radial access, the use of a radial cocktail is integral to maintaining operability of the radial artery during these procedures. However, radial cocktails are often composed of varying quantities of verapamil, heparin, and nitroglycerin, which may contribute to the hemodynamic instability and blood loss in trauma patients. Thus, we sought to better understand the composition and quantity of ingredients of radial cocktails used in the setting of trauma angiography and/or embolization.

METHODS

We performed a retrospective analysis of all trauma patients who had an IR angiography and/or embolization procedure via radial access at our level 1 trauma center between 2015 and 2022. Fisher's exact test was used to determine the association between two categorical variables.

REFERENCES

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Adnan SM, Romagnoli AN, Madurska MJ, Dubose JJ, Scatea TM, Morrison JJ. Safety and efficacy of radial access in trauma in 65 trauma endovascular cases. J Vasc Surg. 2020 May;71(5):1564-1571. doi: 10.1016/j.jvs.2019.08.227. Epub 2019 Oct 11. PMID: 31611111.

RESULTS

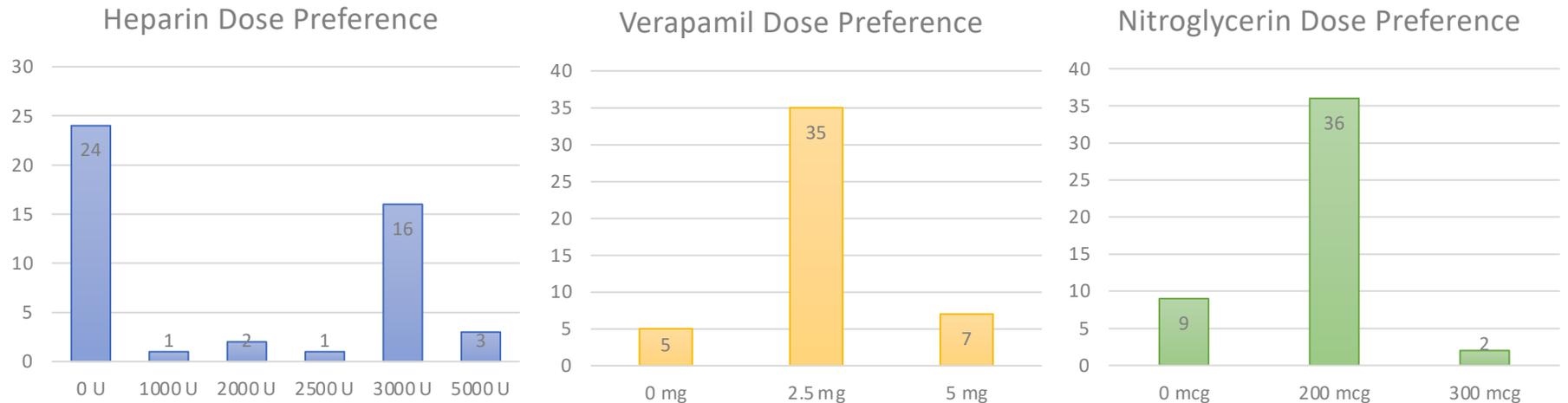


Figure 1. Heparin, verapamil, and nitroglycerin dose preference for radial cocktail during trauma interventional radiology procedures.

43 trauma patients (34% female, mean age 39) underwent 47 angiography and/or embolization via radial access. 23.4% (11/47) had initially presented with hemodynamic instability as defined by systolic blood pressure < 90mmHg, heart rate > 130 when systolic blood pressure < 120, or immeasurable pulse/pressure. As a part of the radial cocktail, 89% (42/47) of patients received verapamil, with the most common dose being 2.5mg (35/42) and max dose 5mg (7/42). 49% (23/47) of patients received heparin with the most common dose being 3000 units (16/23) and max dose 5000 units (3/23). 81% (38/47) received nitroglycerin with the most common dose being 200mg (36/38) and max dose 300mg (2/38). There was no statistical association between hemodynamic instability and holding verapamil ($p = 0.58$), holding nitroglycerin ($p = 0.42$), or holding heparin ($p = 0.32$).

CONCLUSIONS

Radial cocktail composition and ingredient quantity for radial access procedures vary drastically in the setting of trauma angiography and/or embolization.

- Majority of IRs are comfortable using **2.5mg of verapamil** and **200mg of nitroglycerin** in the radial cocktail in patients of varying levels of hemodynamic stability.
- However, half of IRs choose to **hold the usual dose of 3000 units of heparin** in the radial cocktail in trauma cases.

