



The objective of this study is to evaluate the safety and quality of computed tomographic angiography of the thoracic aorta (CTA-TA) exams performed using intraosseous needle intravenous access (ION-IVA) for contrast media injection (CMI)” Winkler et al (2017).

Abstract:

**BACKGROUND:** The objective of this study is to evaluate the safety and quality of computed tomographic angiography of the thoracic aorta (CTA-TA) exams performed using intraosseous needle intravenous access (ION-IVA) for contrast media injection (CMI).

**METHODS:** All CTA-TA exams at the study institution performed between 1/1/2013 and 8/14/2015 were reviewed retrospectively to identify those exams which had been performed using ION-IVA (ION-exams). ION-exams were then analyzed to determine aortic attenuation and contrast-to-noise ratio (CNR). Linear regression was used to determine how injection rate and other variables affected image quality for ION-exams. Patient electronic medical records were reviewed to identify any adverse events related to CTA-TA or ION-IVA.

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**RESULTS:** 17 (~0.2%) of 7401 exams were ION-exams. ION-exam CMI rates varied between

2.5 and 4 ml/s. Mean attenuation was 312 HU (SD 88 HU) and mean CNR was 25 (SD 9.9). A strong positive linear association between attenuation and injection rate was found. No immediate or delayed complications related to the ION-exams, or intraosseous needle use in general, occurred.

**CONCLUSION:** For CTA-TA, ION-IVA appears to be a safe and effective route for CMI at rates up to 4 ml/s.

### Full Text

Reference:

Winkler, M., Talley, C., Woodward, C., Kingsbury, A., Appiah, F., Elbelasi, H., Landwher, K., Li, X. and Fleischmann, D. (2017) The use of intraosseous needles for injection of contrast media for computed tomographic angiography of the thoracic aorta. *Journal of Cardiovascular Computed Tomography*. March 16th. .

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