

**SIGNIFICANT REDUCTION OF CONTRAST DOSE IN CHEST CT ANGIOGRAPHY UTILIZING A DUAL INJECTOR SYSTEM WITH SALINE FLUSH**

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**Purpose:** The purpose of this study was to assess the viability of a power dual injector system with respect to contrast bolus reduction and therefore improved cost efficiency and decreased contrast load to the patient without compromising study integrity.

**Methods and Materials:** Thirty-eight consecutive patients referred for thoracic CT angiography to rule out pulmonary embolism were entered into the study. Each patient was given 70 mL Omnipaque 300 at a 3.5 mL/second flow rate followed by a 50 mL saline flush. A 13 second delay was employed before image acquisition. Mean attenuation values were obtained at the pulmonary arteries, superior vena cava, and aortic root. These attenuation values were then retrospectively compared with thirty patients who received CT angiography of the chest given 150 mL Omnipaque 300 at a 3.5mL/second flow rate without use of the dual injector system.

**Results:** Average attenuation values obtained with the dual injector systems compared to the traditional single injector protocol at the pulmonary arteries (292 H versus 296 H), superior vena cava (614 H versus 623 H), and aortic root (267 H versus 254H) revealed no statistical difference. Subjective grading showed no statistically significant difference in the diagnostic utility of the studies with the dual injector system when compared to the traditional single injector protocol.

**Conclusion:** Use of a dual injector system with saline flush reduces the contrast bolus by 50% when compared to the traditional protocol utilized at this institution. This translates into significant cost savings (\$3357.20 for the 38 studies), while also benefiting the patient through reduced contrast volume exposure. Hounsfield measurements through the main vascular points have showed no significant difference when comparing dual injector to traditional protocol studies, and the diagnostic utility of the studies are subjectively felt to be similar between the two protocol groups.

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