The study objective was to determine whether intravenous contrast administration for computed tomography (CT) is independently associated with increased risk for acute kidney injury and adverse clinical outcomes" Hinson et al (2017).

Abstract:

Study objective: The study objective was to determine whether intravenous contrast administration for computed tomography (CT) is independently associated with increased risk for acute kidney injury and adverse clinical outcomes.

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Methods: This single-center retrospective cohort analysis was performed in a large, urban, academic emergency department with an average census of 62,179 visits per year; 17,934 ED visits for patients who underwent contrast-enhanced, unenhanced, or no CT during a 5-year period (2009 to 2014) were included. The intervention was CT scan with or without intravenous contrast administration. The primary outcome was incidence of acute kidney injury. Secondary outcomes included new chronic kidney disease, dialysis, and renal transplantation at 6 months. Logistic regression modeling and between-groups odds ratios with and without propensity-score matching were used to test for an independent association between contrast administration and primary and secondary outcomes. Treatment decisions, including administration of contrast and intravenous fluids, were examined.

Results: Rates of acute kidney injury were similar among all groups. Contrast administration was not associated with increased incidence of acute kidney injury (contrast-induced nephropathy criteria odds ratio=0.96, 95% confidence interval 0.85 to 1.08; and Acute Kidney Injury Network/Kidney Disease Improving Global Outcomes criteria odds ratio=1.00, 95% confidence interval 0.87 to 1.16). This was true in all subgroup analyses regardless of baseline renal function and whether comparisons were made directly or after propensity matching. Contrast administration was not associated with increased incidence of chronic

kidney disease, dialysis, or renal transplant at 6 months. Clinicians were less likely to prescribe contrast to patients with decreased renal function and more likely to prescribe intravenous fluids if contrast was administered.

Conclusion: In the largest well-controlled study of acute kidney injury following contrast administration in the ED to date, intravenous contrast was not associated with an increased frequency of acute kidney injury.

Full Text

Reference:

Hinson, J.S., Ehmann, M.R., Fine, D.M., Fishman, E.K., Toerper, M.F., Rothman, R.E. and Klein, E.Y. (2017) Risk of Acute Kidney Injury After Intravenous Contrast Media Administration. Annals of Emergency Medicine. January 25th. .

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