



# Incidence of Contrast-Induced Nephropathy after Contrast-Enhanced Computed Tomography in the Outpatient Setting

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**Abstract:**

Background and objectives: No prospective study has reported the incidence of contrast-induced nephropathy (CIN) or the associated morbidity and mortality after contrast-enhanced computed tomography (CECT) in the outpatient setting. Design, setting, participants, & measurements: We enrolled and followed a prospective, consecutive cohort (June 2007 through January 2009) of patients who received intravenous contrast for CECT in the emergency department of a large, academic, tertiary care center. Outcomes measured were as follows (1) CIN: An increase in serum creatinine  $\geq 0.5$  mg/dl or  $\geq 25\%$  2 to 7 d after contrast administration; (2) severe renal failure: An increase in serum creatinine to  $\geq 3.0$  mg/dl or the need for dialysis at 45 d; and (3) renal failure as a contributing cause of death (consensus of three independent physicians) at 45 d. Results: The incidence of CIN was 11% (70 of 633) among the 633 patients enrolled. Fifteen (2%) patients died within 45 d, including six deaths after study-defined CIN. Seven (1%) patients developed severe renal failure, six of whom had study-defined CIN. Of the six patients with CIN and severe renal failure, four died, and adjudicators determined that renal failure significantly contributed to all four deaths. Thus, CIN was associated with an increased risk for severe renal failure

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and death from renal failure. Conclusions: CIN occurs in >10% of patients who undergo CECT in the outpatient setting and is associated with a significant risk for severe renal failure and death.

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