

Abstract

Computed tomography is a widely used imaging modality in clinical practice due to its ability to produce detailed cross-sectional images of the body. The administration of iodinated contrast agents enhances the visualization of internal structures and diagnostic accuracy. While pre-contrast scans provide important baseline information, contrast enhanced imaging can further aid in the detection of various pathologies. However, the use of contrast media has raised concerns regarding its potential to contribute to acute kidney injury (AKI), a sudden decline in renal function typically identified in changes in creatinine levels and glomerular filtration rate (GFR). This research reviews current evidence on contrast-associated AKI. Findings from studies indicate that contrast use does not significantly increase the risk of AKI in the general population. Instead, elevated risk is primarily observed in patients with pre-existing kidney disease, reduced GFR, diabetes, advanced age, or dehydration. These results suggest that while contrast is safe, careful patient assessment remains essential. Monitoring kidney function and implementing preventative measures, such as adequate hydration, can help reduce the likelihood of renal complications in higher risk individuals. The study highlights the importance of renal complications in higher risk individuals. Future research should focus on improving risk assessment strategies and further clarifying the relationship between contrast exposure and kidney function in vulnerable population.

Keywords: acute kidney injury (AKI), creatinine, glomerular filtration rate, contrast, computed tomography (CT), kidney.