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i2 SUMMIT

HYPERGLYCEMIA AND CONTRAST-INDUCED ACUTE KIDNEY INJURY: THRESHOLD FOR INJURY

i2 Poster Contributions
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Background: Diabetics with impaired renal function are at increased risk of contrast-induced acute kidney injury (AKI). The role of periprocedural hyperglycemia remains unknown.

Methods: 116 consecutive patients experiencing contrast induced AKI were each matched on pre-procedural estimated glomerular filtration rate (eGFR), diabetes history, referral for CABG, and contrast volume with two controls not experiencing contrast induced AKI. Pre-procedural glucose and change in peri-procedural glucose were compared between cases and controls. The odds of AKI were examined for 20mg/dl increments of pre-procedural glucose level above 100mg/dl. Multivariable logistic regression analysis was performed to examine the impact of change in glucose post-procedure on the likelihood of AKI as well as to examine and control for other covariates not explicitly matched in the case-control design.

Results: A pre-procedural glucose level of 180 mg/dl was associated with a significant increase in the odds of AKI.(Figure) In multivariable logistic regression, the adjusted odds of AKI were 1.78 (1.22-2.59) per 80 mg/dl increase in pre-procedural glucose above 100 mg/dl (p=0.0023). The adjusted odds of AKI were 3.49 (2.04-5.98) for each 80 mg/dl increase in post-procedural glucose above the pre-procedural level (p<0.0001).

Conclusion: Pre-procedural hyperglycemia >180 mg/dl and worsening post-procedural hyperglycemia are significantly and independently associated with increased risk of AKI .