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Hippo-YAP Signalling Pathway Promotes Apoptosis of Renal Tubular Epithelial Cells in Contrast-Induced Acute Kidney Injury

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ABSTRACT The Hippo-YAP pathway drives kidney injury, but its function in contrast-induced acute kidney injury (CI-AKI) is uncertain. The researchers examined how the Hippo-YAP signalling pathway affects iohexol-induced apoptosis in CI-AKI. Iohexol treatment was applied to human HK-2 renal tubular epithelial cells. The Hippo-YAP pathway was inhibited using XMU-MP-1. CCK-8, TUNEL, flow cytometry, and Western blot analyses were employed to evaluate cell viability and apoptosis. A CI-AKI mouse model was established to evaluate renal injury. The results showed that iohexol reduced cell viability, induced apoptosis, and activated the Hippo-YAP pathway. Blocking this pathway using XMU-MP-1 reversed these effects in vitro. In vivo, XMU-MP-1 attenuated iohexol-induced renal tubular injury, improved kidney function, and suppressed apoptosis in the kidney. In conclusion, activating the Hippo-YAP pathway triggers renal tubular epithelial cell apoptosis, while its inhibition protects against iohexol-induced kidney injury, suggesting that targeting this pathway may present a potential therapeutic approach for CI-AKI.