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**Concomitant Acute Pyelonephritis, Acute Kidney Injury, and Obstruction Duration Affects Renal Outcome in Obstructive Uropathy by Urolithiasis**

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**Objectives:** Obstruction release from urolithiasis can be delayed, with a lack of suggested time for preventing the deterioration of renal function.

**Methods:** This is a study of 1607 patients with a urolithiasis-related obstructive uropathy between January 2005 and December 2015. Clinical outcomes were evaluated with respect to obstruction duration, acute kidney injury (AKI), and acute pyelonephritis (APN) accompanied by obstructive uropathy.

**Results:** When the prognosis was divided by the obstruction duration quartile, the longer the obstruction duration, the higher the probability of eGFR reduction >50%. In patients with concomitant APN or severe AKI during hospitalization with obstructive uropathy, an eGFR decrease of >30% and >50% occurred more frequently, compared to the others. In multivariate analysis, concomitant APN (HR=3.495), AKI (HR=3.284 for AKI stage II; HR=6.425 for AKI stage III) and an obstruction duration >7 days (HR=1.854) were independently associated with an eGFR decrease >50%. Tree analysis also showed that AKI grade 3, APN, and an obstruction duration >7 days were the most important factors affecting the renal outcome.

**Conclusions:** In urolithiasis-related obstructive uropathy, concomitant APN, AKI, and the elapsed time to release the obstruction were strongly associated with the deterioration of renal function after obstruction release.