

Practice level variation in the use of imaging after shockwave lithotripsy (SWL): data from a statewide clinical registry

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INTRODUCTION AND OBJECTIVES: SWL is among the most commonly performed procedures for patients with urinary stones. It is well known that complete stone clearance does not always occur following SWL, yet, few guidelines inform appropriate imaging use in the postoperative period. We sought to understand the use of imaging following SWL in the state of Michigan.

METHODS: We used data from the Michigan Urologic Improvement Collaborative Reducing Operative Complications from Kidney Stones (MUSIC ROCKS) registry. This prospectively maintained registry contains clinical and operative data from patients undergoing ambulatory stone surgery across a diverse consortium of urology practices. We identified patients undergoing SWL and calculated the proportion that had imaging within 60 days of surgery. Practice level variation in post-SWL imaging use was quantified. We divided practices into tertiles based on level of imaging use and made bivariate comparisons between high and low imaging use groups. We constructed a multivariable model to understand factors independently associated with post-SWL imaging use using a P-value of 0.05 to represent significance.

RESULTS: We identified 3250 patients who underwent SWL across 34 urology practices (2016-2018). Overall, 78.5% of patients had postoperative imaging with KUB representing the majority of studies performed (72.8%). There was substantial variation in use of post-SWL imaging across practices (Figure). High imaging use practices more commonly treated smaller stones, patients with greater comorbidity, those with public insurance, those without preoperative hydronephrosis, renal stones, and those without stents. After accounting for these variables, increasing BMI (OR 1.3; 95% CI 1.0-1.7) and having a stent prior to or at the time of SWL was associated with a higher odds of post-SWL imaging (OR 1.7; 95% CI 1.2-2.3 and OR 2.4; 95% CI 1.1-5.5). Those discharged with an alpha blocker had 23% lower odds of receiving postoperative imaging (OR 0.77; 95% CI 0.6-0.9).

CONCLUSIONS: There is substantial variation in the use of postoperative imaging following SWL. Understanding differences between low and high imaging-use practices may serve to better inform future guidelines regarding appropriate imaging use after SWL.

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Figure. Variation in use of post-SWL imaging across MUSIC ROCKS practices

