INTRODUCTION AND OBJECTIVES: Thiazides and citrate prevent kidney stones and improve bone mineral density. The objective of this study was to opportunistically utilize the non-contrast CT scan used for stone detection to identify those with low BMD and follow the impact of potassium citrate and thiazides on longitudinal BMD measurements.

METHODS: A retrospective analysis was performed of 299 kidney stone patients treated with thiazides and/or potassium citrate for a minimum of one year. For each patient, bone mineral density (BMD) was estimated at the L1 vertebra with CT attenuation measured in Hounsfield units (HU). A level of 160 HU was chosen to distinguish normal from low BMD. Pairwise t-test was used to compare the continuous outcomes before and after treatment for the whole cohort and the low BMD subgroup. Linear regression was performed to find the factors associated with the (HU) changes and to show if any association exists between the duration of follow up and the changes in (HU). A matched pair t-test was performed to compare among the medications used and the impact of their doses on the (HU) outcomes.

RESULTS: Patients with low BMD (HU < 160) comprised (n=186, 62.2 %) of the cohort. 16.1% normalized after one year of treatment and 68% had an increase in (HU). The change in (HU) ranged between -62.1 to 152.1, with a mean of 8.6 (p-value = 0.0001) and 95% CI (4.81 – 12.37). Linear regression demonstrated no association between the duration of treatment and the HU changes, in both the cohort and low BMD subgroup (P=0.64, P=0.61), respectively. HCTZ 50mg was more effective at improving BMD (HU +19.7, p=0.04) compared to 25mg (+2.9) or 12.5mg (HU +6.4). Majority of the low BMD subgroup was more effective at improving BMD (HU +19.7, p=0.04) compared to 25mg (+2.9) or 12.5mg (HU +6.4). Majority of the low BMD subgroup (P<0.61) showed a significant increase in (HU) of (3.125, 10.731), p-value (0.0453, 0.0007) respectively.

CONCLUSIONS: Stone health and bone health are synergistic. The impact of thiazides and citrates on BMD can be monitored opportunistically with the non-contrast CT scan.

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unknown whether MET use may have a role in aiding stone passage for stones of a particular size or specific position in the ureter. We undertook MIMIC, a multi-centre international cohort study in 71 centres disseminated via the UK British Urology Researchers in Surgical Training (BURST) to assess whether MET use improved rates of SSP adjusting for key confounders such as stone size and stone position.

METHODS: Multivariable mixed effects logistic regression models were created fitted for MET use, Age, Gender, Stone size and Stone position. To explore the effect of stone size (mm) and stone position (upper ureter, middle ureter and lower ureter) on whether MET use had an effect on SSP, an interaction term was fitted between these variables.

RESULTS: Data were collected from 4181 patients admitted with acute ureteric colic. 75% (n=3127) were discharged with conservative management. 80% (n=2516) had a confirmed outcome of SSP and were included in the multivariable analysis. The unadjusted odds ratio for the association of MET use with SSP from univariable analysis was 1.250 (95%CI 1.041, 1.501). However, following a multivariable mixed effects logistic regression model adjusting for age, gender, stone size, position, treating stone size and stone position as interaction terms, there was no association of MET use with SSP in any subgroup irrespective of stone size (OR 1.085, 95%CI 0.978, 1.205) or stone position: middle ureter (OR 0.808, 95%CI 0.458, 1.424), upper ureter (OR 1.085, 95%CI 0.978, 1.205) or stone position was not significant. Post-operative IPSS total scores and quality of life (IPSS QoL) scores were lower in the mirabegron group (IPSS 2: 2.87 vs 1.33, p=0.001; IPSS QoL 2: 7.43 vs 4.13, p=0.001). The amount of residual urine volume was not different between the two groups (p>0.05).

CONCLUSIONS: Our data shows that in patients with acute ureteric colic who are suitable for initial conservative management, MET use has no benefit in spontaneous stone passage, regardless of stone size or stone position.


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**CAN MIRABEGRON RELIEVE DOUBLE-J STENT-RELATED DISCOMFORT: A MULTICENTER, RANDOMIZED, OPEN-LABEL STUDY**

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**INTRODUCTION AND OBJECTIVES:** To evaluate the effect of 50 mg once daily Mirabegron for ureteral double-J (DJ) stent-related discomfort after ureteroscopic procedures using a multicenter, randomized, open-label study.

**METHODS:** 58 patients with indwelling ureteral DJ stents after ureteroscopic stone removal or retrograde intrarenal surgery (RIRS) were randomized 1:1 to receive either no treatment or mirabegron during the stenting period. At the time of stent removal, validated Ureteral Stent System Questionnaire (USSQ), International Prostate Symptom Score (IPSS), total amount of analgesics administered, and post voiding residual urine volume were reported for each patient.

**RESULTS:** USSQ body pain scores (11.50 vs. 2.62, p=0.001) and Overall pain score (5.69 vs 1.15, p=0.048) were lower in the mirabegron group than in the control group. USSQ urinary symptom scores (33.19 vs. 24.38, p=0.587) and USSQ general health score (16.94 vs 10.69, p=0.048) were lower in the mirabegron group, but the difference was not significant. Post-operative IPSS total scores and quality of life (QoL) scores were lower in the mirabegron group, but the difference was not significant. However, IPSS 2 and IPSS 4 scores were lower in the mirabegron group (IPSS 2: 2.87 vs 1.33, p=0.002; IPSS 4: 2.75 vs 0.92, p=0.001). The amount of residual urine volume was not different between the two groups (p>0.05).

**CONCLUSIONS:** The use of 50 mg once daily mirabegron reduced DJ ureteral stent-related discomfort, especially pain and storage symptoms. Prospective larger-scale, placebo-controlled studies should be conducted to further evaluate the effects of mirabegron on stent-related symptoms after surgery.