

## Is flexible ureteroscopy effective for renal stones in overweight and obese patients?

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**INTRODUCTION & OBJECTIVES:** Various endourological treatment options are available for renal calculi, including extracorporeal shock wave lithotripsy (ESWL), percutaneous nephrolithotomy (PCNL) and retrograde intrarenal surgery (RIRS). In obese patients, PCNL is associated with a greater risk of complications and ESWL is associated with lower success rate. We determined whether flexible ureteroscopy (fURS) is effective to treat renal stones in obese and overweight patients.

**MATERIAL & METHODS:** From January 2009 to June 2011, 112 patients who underwent fURS with laser lithotripsy included in the study. Patients were divided into three groups depending on their BMIs: ideal body weight 2 (group 1), overweight 25 to 29.9 kg/m<sup>2</sup> (group 2) and obese  $\geq 30$  kg/m<sup>2</sup> (group 3). We compared patients characteristics, stone size and laterality, stone locations, operative times, stone-free rates (at post-operatively first day (POD 1) and first month), residual stones (defined as  $>2$  mm on noncontrast spiral computed tomography, abdominal plain radiography or renal ultrasonography), number of procedures, complication rates and hospital lengths of stay between three groups.

**RESULTS:** There were no significant differences in age, gender, stone sizes and stone localizations among three groups (Table 1). The mean number of procedures were 1.25 in group1, 1.29 in group 2 and 1.33 in group 3 ( $p>0.05$ ). Overall stone-free rates at 1 month were 84% in group 1, 87% in group 2 and 81% in group 3 ( $p>0.05$ ). There were no major complication. We found no significant differences among groups with regard to stone-free rates, complication rates, operative times and hospital lengths of stay (Table 2).

Table 1. Characteristics of patients and stones

	Group 1 (BMI (BMI $\geq 30$ )p	Group 2 (BMI:25-29,9 kg/m <sup>2</sup> )	Group 3	
Number of patients	44	41	27	
Gender (M/F)	24/20	23/18	15/12	$>0.05$
Mean age (years)	43.5 $\pm$ 12.4	41.4 $\pm$ 13.5	45.7 $\pm$ 15.6	$>0.05$
Stone size (cm)	2.1 $\pm$ 0.9	2.3 $\pm$ 1.1	1.9 $\pm$ 0.8	$>0.05$
Stone location				$>0.05$
Upper calix	9	10	6	
Middle calix	12	11	8	
Lower calix	23	20	13	

Table 2. Comparative results between groups

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	Group 1	Group 2	Group 3	P
Mean operative time (min)	84.37± 17.5	88.58±15.9	92.2±12.3	>0.05
SFR at POD 1	75%	78%	74%	>0.05
SFR after 1 month	84%	87%	81%	>0.05
Number of procedures	1.25	1.29	1.33	>0.05
Minor complications	9%	7.3%	7.4%	>0.05
Lengths of hospital stay	1.3±0.3	1.2±0.4	1.4±0.6	>0.05

**CONCLUSIONS:** The results of our study have shown that obese and overweight patients can be successfully treated ureteroscopically with low complication rates.