

Can We Use Holmium Laser Made in Iran for Ureterolithotripsy?

Introduction and Objective: The aim of our study was to compare holmium: YAG laser and pneumatic transurethral ureterolithotripsy (TUL) for the management of ureteral calculi.

Materials and Methods: One hundred and twelve patients with ureteral calculi between 1-2 cm were selected in randomized order for pneumatic or holmium: YAG laser transurethral ureterolithotripsy (56 patients in each group). Ultrasonography and KUB were performed for all patients before operation. The goal of lithotripsy was to break the stone into particles less than 3 mm. IVP was performed 4 weeks after.

Results: The mean age and stones' sizes were the same in both groups and there was no statistical difference. Mean duration of lithotripsy was 12.6 +/- 13.7 min in laser lithotripsy (LL) group and 4.2 +/- 7.9 min in pneumatic lithotripsy (PL) group. Immediate stone free rate was 100% in LL group and 82.1 % in PL group ($P=0.001$). Stone pushing back was 0% in LL group and 17.9% in PL group ($P=0.001$). Complications such as perforation or urosepsis or bleeding were not seen in any of these groups. Fever more than 38 °C was observed in 1.8% in LL and 3.8% of patients in PL group ($p=0.56$). No complication was seen in IVP after four weeks.

Conclusions: Treatment with ureteroscopy and laser lithotripsy is the preferred approach with high success rate and low complications for 1-2 cm ureteral calculi especially for upper ureteral stones.