

PP-065

A prospective randomized comparison between shock wave lithotripsy and semi-rigid ureteroscopy for upper ureteric stones less than 2 cm: A single center experience

N.K. Mohanty, A. Kumar, P. Vasudeva

V.M. Medical College and Safdarjang Hospital, New Delhi, India

Aims and Objectives: The best management of upper ureteric calculi is still not defined, with controversy existing between ureteroscopy (URS) and shock wave lithotripsy (SWL). We have performed a prospective randomized comparison between semi-rigid ureteroscopy and shock wave lithotripsy for upper ureteric stones less than 2 cm to evaluate safety and efficacy of these procedures.

Materials and Methods: All the patients with a single radio-opaque upper ureteric stone < 2 cm undergoing treatment between Jan 2008 and May 2009 in our department were included. Patients were randomized into 2 groups – Group A: SWL was performed as an outpatient procedure using the electromagnetic lithotripter (Dornier Alpha Compact); Group B: URS was performed using an 6/7.5 F or 8/9.8 F semirigid ureteroscope with pneumatic or holmium laser intracorporeal lithotripsy energy. The statistical analysis was performed in 2 groups regarding patient demographic profile, success rates, retreatment rates, auxiliary procedures, and complications.

Results: 90 patients were enrolled in each group. The mean stone size was 12.3 mm in group A vs. 12.5 mm in group B ($p=0.52$). The overall 3 month stone free rate was (74/90)82.2% for group A vs (78/90)86.6% for group B ($p=0.34$). For stone size < 10 mm, 3 month stone free rates were (45/53) 84.9% for group A vs (43/49)87.7% for group B ($p=0.32$). For stone size between 10-20 mm, 3 month stone free rates were (29/37)78.4% for group A vs (35/41)85.4% for group B ($p=0.12$). The retreatment rate was significantly greater in group A in comparison to group B (61.1% vs 1.1%, respectively; $p < 0.001$). The auxiliary procedure rate was comparable in both groups (21.1% vs 17.7%; $p=0.45$). The complication rate was 6.6% in group A vs 11.1% in group B ($p=0.21$).

Conclusions: Both SWL and semirigid URS are safe and highly efficacious in the treatment of proximal ureteral stones < 20mm. For upper ureteric stones < 10 mm, SWL was safer, less invasive and with comparable efficacy in comparison to URS. However, for upper ureteric stones between 10-20 mm, URS was more effective, with a lesser retreatment rate than SWL.

As published in the *Supplement of AFJU, Volume 18 (2012), 1st ESD "Experts in Stone Disease" Conference* (pages 52-53)