A prospective randomized comparison between early (< 48 hours of onset of colicky pain) versus delayed shock wave lithotripsy for symptomatic upper ureteric calculi: 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 role of early/emergency shock wave lithotripsy in symptomatic upper ureteric calculi has still not been established. We have performed a prospective randomized comparison between early (< 48 hours) versus delayed (> 48 hours) shock wave lithotripsy for symptomatic upper ureteric stones less than 1 cm to evaluate the feasibility, safety and efficacy of early SWL in these patients.

**Materials and Methods:** 160 consecutive patients with a single radio-opaque upper ureteric stone < 1 cm, presenting with an episode of colicky pain, undergoing treatment between July 2008 and June 2009 in our department were included. The patients were hospitalized and randomized into 2 groups – Group A: SWL was performed within 48 hours of onset of colicky pain (early SWL) using the electromagnetic lithotripter (Dornier Alpha Compact) along with analgesics and hydration therapy; Group B: SWL was performed after 48 hours (delayed SWL) along with analgesics and hydration therapy. The statistical analysis was performed in 2 groups regarding patient demographic profile, presence of hydronephrosis, time to stone clearance, success rates, no. of sessions required, auxiliary procedures, modified efficiency quotient (EQ) and complications.

**Results:** 80 patients were enrolled in each group. The mean stone size was 7.3 mm in group A vs. 7.5 mm in group B (p= 0.52). The stone fragmentation rate was 88.75% in group A vs 91.2% in group B (p = 0.35). The overall 3 month stone free rate was (69/80)86.3% for group A vs (61/80)76.2% for group B (p=0.34). The mean time taken for stone clearance was significantly lesser in group A than in group B (10.2 days vs 21.1 days; p=0.01). The number of sessions required in group A were significantly lesser than group B (1.3 vs 2.7; p = 0.01). The auxiliary procedure rate was also significantly lesser in group A than group B (16.3% vs 32.5%; p=0.001). The modified EQ (in %) was 67.2 in group A vs 59.4 in group B (p = 0.21). The steinstrasse formation and requirement for PCN were significantly lesser in group A (p:0.02 and 0.01 respectively).

**Conclusions:** Early SWL (within 48 hours of onset of colicky pain) is feasible, safe, highly efficacious in the treatment of symptomatic proximal ureteral stones < 1 cm, resulting in lesser requirement of number of SWL sessions, time taken for stone clearance, auxiliary procedure rate and lesser complications in comparison to delayed SWL.

As published in the Supplement of AFU, Volume 18 (2012), 1st ESD “Experts in Stone Disease” Conference (page 50)