# Comparison between Extracorporeal Shock Wave Lithotripsy (ESWL) and Ureteroscopic Laser Lithotripsy in Management of Ureteric Stones

## Students

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## Abstract

## introduction

There are many options for urologists to treat ureteric stones, including extracorporeal shock wave lithotripsy (ESWL) and Ureteroscopic Laser lithotripsy. While both ESWL and Ureteroscopic Laser lithotripsy are effective and minimally invasive procedures, there is still controversy over which one is more suitable for ureteric stones.

## Purpose

To perform a retrospective study to compare the efficiency, safety and complications using extracorporeal shock wave lithotripsy ESWL vs. ureteroscopic holmium laser lithotripsy in management of ureteral stones.

## Methodology

Between January 2017 to june 2019, 128 patients, 91 males (71.1%) and 37 females (28.9%), with an average age of 41.82 years (range: 22-66) who underwent ESWL at Al-Rahma Dispensary or Ureteroscopic Laser lithotripsy at An-Najah Hospital for ureteral stones (size: 7-15mm) were evaluated. The medical records were reviewed and compared in terms of (age, sex, stone site, stone size(mm), stone location, stone-free rate(success rate), treatment time, overall procedural time, costs and complications). All patients were followed up with ultrasound and kidney ureter bladder (KUB) and/or noncontrast-enhanced computer tomography (CT). stone –free rate was defined as complete fragmentation of stones or clinically insignificant residual fragments of <4 mm.

## Result

Similarity in stone-free rate and treatment time between the two procedures; overall procedural time and total cost were significantly different. Renal colic and gross hematuria were more frequent with ESWL while voiding symptoms were more frequent with ureteroscopy. Both procedures used for ureteral stones ranging from 7 to 15 mm were safe and minimally invasive.

## Conclusion

ureteroscopy achieved a greater stone-free. Shock wave lithotripsy achieved lower stone-free rate. ESWL as an outpatient procedure does not require anesthesia; while ureteroscopic laser lithotripsy as a surgical procedure requires general anesthesia, hospitalization and much more costs. Determining which procedure is preferable depends on stone characteristics, patient acceptance and cost-effectiveness ratio.

# Key words

laser lithotripsy, ESWL, Ureteric stones