FACTORS AFFECTING THE SATISFACTION OF PATIENTS UNDERGOING ESWL IN A SAMPLE OF IRAQI PATIENTS

Saif Hameed Mohammed1*, Sura Abdulhussein Mohammed Al-touama1

1. Surgery Department, College of Medicine, Al-Nahrain University, Iraq

*Corresponding author: dsaitimimi@gmail.com (Mohammed)

ABSTRACT

Urolithiasis is considered an important cause of illness of the urinary system. Within last few years the management of stones has been transformed because of developing in less invasive procedures (1, 2). It leads to more or less obstruction of lower and upper tracts according to the size of stones and degree of impaction necessitate the need for instrumental management or emergent operation.

The current study was conducted in AL Khadymia teaching hospital in the ESWL unit from October 2019 to February 2020 was taken. 150 cases that already underwent ESWL sessions for renal and ureteric stones. Patients had DJ ureteric stent for renal stones >2 cm in size or impacted ureteric stones causing distal obstruction. Patients had active UTI were postponed to receive enough treatment, prophylactic AB and analgesia given to the patients before the session. The type of lithotrepter used was from Siemens (lithoskop). Sociodemographic characteristics (gender, BMI, accessory intervention (DJ insertion or nephrostomy tube) and stone site distribution) and modified questionnaire for assessment for the quality of life was recorded for patients who underwent the first session of ESWL we wait for 1 week to take the information.

Across sectional observational study of 149 patients, mean age of patients are (43 ± 13.5) years old, 57% males and 43% females, 38% of patients are overweight and 35.6% are obese. 85.6% of patients are no accessory intervention, 34.2% of patients with stone in upper renal, 25.55 in middle renal and 18.79% in lower renal. 46.3% of patients are middle age (40 – 59) years old and 40.9% of patients are young adult (10-39) years old, 77.85% of patients in current study are satisfy while 22% of patients not satisfy, there is significant association between accessory intervention and satisfaction, 95.7% of satisfy patients have no any accessory intervention. Other variables equally effect on patients satisfaction and no specific association.
Most patients with ureteric stone satisfied after ESWL session and pain was stop, most satisfied patients have no accessory intervention with no role to gender, age and BMI on patients’ satisfaction.

**Keywords:** ESWL, ureteric stone, BMI


**Volume/ Issue:** Volume: 24/Issue: 04

**INTRODUCTION**

Urolithiasis is considered an important cause of illness of the urinary system, within last few years the management of stones has been transformed because of developing in less invasive procedures \(^1, 2\). It leads to more or less obstruction of lower and upper tracts according to the size of stones and degree of impaction necessitate the need for instrumental management or emergent operation \(^3\). Previous management of stones done by open surgery (e.g., pylolithotomy or ureterolithotomy), after that the operation developed to semi-rigid ureteroscopes, shock wave lithotripsy (SWL) technologies, panel, laparoscopy and flexible ureterorenoscopy. All these procedures when use in perfect way lead to high effective results for adults and kids \(^4,5\).

SWL is less invasive technique and can do it as an outpatient method; it is mostly used in managing or lower and upper stone in ureter. In spite of it is not penetrated but it is associated with pain and severity of pain related to following factors: lithotripsy type, stone location and type, ESWL frequency and pressure and patients’ age and sex \(^6\). Destruction and clearance of stone arrange the ESWL measurement, this changed by many factors as the following: size of stone, location of stone, distance between stone and skin, stone structure, block severity, anatomy of urinary tract, obese patients and kind of ESWL apparatus \(^7,8\). For optimum fragmentation, ESWL must be practical at suitable power and time \(^9\). ESWL still gold stander treatment of stone less than 2 cm and preferable from many urologists \(^10\). In addition, ESWL have low adverse effect and available in many hospitals \(^11\). Entire contraindications of ESWL are pregnant females as well as patients with bleeding tendency. So patients take anticoagulant and antiplatelet drugs must either stop these drugs before ESWL or find another mode of treatment. ESWL complication are bleeding, renal hematoma, loin pain and contamination with infection \(^12\) and these factors may affect the satisfaction of patients toward this noninvasive treatment and their decision.
about choosing it in the management of their disease. The aim of study is to show the satisfaction of patients toward SWL and some of factors influence their satisfaction.

MATERIALS AND METHODS

The current study was conducted in AL Khadymia teaching hospital in the ESWL unit from October 2019 to February 2020 was taken. 150 cases who already underwent ESWL sessions for renal and ureteric stones. 21 patients had DJ ureteric stent for renal stones >2 cm in size or impacted ureteric stones causing distal obstruction. Patients had active UTI were postponed to receive enough treatment, prophylactic AB and analgesia given to the patients before the session. The type of lithotripter used is from Siemens (lithoskop). Sociodemographic characteristics (gender, BMI, accessory intervention (DJ insertion or nephrostomy tube) and stone site distribution) and modified questionnaire for assessment for the quality of life was recorded for patients who underwent the first session of ESWL we wait for 1 week to take the information. Patients’ satisfaction calculated according to the sf-6d Brazil questionnaire (13). Statistical study done by SPSS 22 for calculate frequency, percentage, mean and SD of all data, Chi square use to show association between variables and patients satisfaction (categorical data). P-value considered significant when ≤ 0.05.

RESULTS

Across sectional observational study of 149 patients, mean age of patients are (43 ± 13.5) years old, 57% males and 43% females, 38% of patients are overweight and 35.6% are obese. 85.6% of patients are no accessory intervention, as show in table (1).

Table 1: variables frequencies
<table>
<thead>
<tr>
<th>variables</th>
<th>frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>64</td>
<td>43.0</td>
</tr>
<tr>
<td>Male</td>
<td>85</td>
<td>57.0</td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>39</td>
<td>26.2</td>
</tr>
<tr>
<td>Obese</td>
<td>53</td>
<td>35.6</td>
</tr>
<tr>
<td>Over weight</td>
<td>57</td>
<td>38.3</td>
</tr>
<tr>
<td>Accessory intervention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>128</td>
<td>85.9</td>
</tr>
<tr>
<td>yes</td>
<td>21</td>
<td>14.1</td>
</tr>
</tbody>
</table>

Total of 34.2% of patients with stone in upper renal, 25.55 in middle renal and 18.79% in lower renal. 46.3% of patients are middle age (40 – 59) years old and 40.9% of patients are young adult (10-39) years old.

**Fig. 1: Stone site distribution.**
According to fig (3) 77.85% of patients in current study are satisfy while 22% of patients not satisfy.

According to table (2) there is significant association between accessory intervention and satisfaction, 95.7% of satisfy patients have no any accessory intervention. Other variables equally effect on patients satisfaction and no specific association.
Table 2: Association between variables and satisfaction

<table>
<thead>
<tr>
<th>Variables</th>
<th>Satisfaction</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>16 (48.5%)</td>
<td>48 (41.4%)</td>
</tr>
<tr>
<td>Male</td>
<td>17 (51.5%)</td>
<td>68 (58.6%)</td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>11 (33.3%)</td>
<td>28 (24.1%)</td>
</tr>
<tr>
<td>Obese</td>
<td>14 (42.4%)</td>
<td>39 (33.6%)</td>
</tr>
<tr>
<td>Overweight</td>
<td>8 (24.2%)</td>
<td>49 (42.2%)</td>
</tr>
<tr>
<td>Accessory intervention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>17 (51.5%)</td>
<td>111 (95.7%)</td>
</tr>
<tr>
<td>yes</td>
<td>16 (48.5%)</td>
<td>5 (4.3%)</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 - 39 years (young adult)</td>
<td>11 (33.3%)</td>
<td>50 (43.1%)</td>
</tr>
<tr>
<td>40 - 59 years (middle)</td>
<td>16 (48.5%)</td>
<td>53 (45.7%)</td>
</tr>
<tr>
<td>60 and above (old)</td>
<td>6 (18.2%)</td>
<td>13 (11.2%)</td>
</tr>
</tbody>
</table>

P-value less than 0.05 (significant)

DISCUSSION

ESWL considered the favorite treatment for not complicates renal stone that less than 2 cm in diameter and stone in ureter, ESWL is not penetrated benign operation (14, 15). The achievement rate of ESWL is from 46% - 91%, destruction and clearance of stone arrange the ESWL measurement (16–18). Many studies reveal that size, location, density of stone and degree of obstruction and anatomy of renal system and type of machine all these factors affected the realization rate of ESWL (19–21). In current study, we assessed some factors that influencing the satisfaction of patients toward the ESWL management, the satisfaction was 77.85%. In current study, age of patients not significantly affected to the results of ESWL, but only 10 patients above 60 years old age, unknown reason for old patients have free stone. Also efficacy of ESWL affected by sclerosis of kidney that occurs due to aging. Therefore, need more sessions or lower in rates of free stone so all these lead...
to decrease satisfaction of patients. So need more studies to check that age is affecting factor for ESWL results. Also numerous studies state that gender is not significantly affected factors for ESWL results. A retrospective paper for 145 patients have renal stone and treated with ESWL reveal 47% a success rate in men and 50% in women, with no significant association between gender and satisfaction and successful rate. While also in another 153 patients, have ureteric stone 83% successful rate in men and 82% in women and also no significant association (22). In current study, there is no any association between obesity and satisfaction after ESWL this result similar to Chew et al. that state the stone free rate after used ESWL in obese and overweight patients is similar to normal weight patients (23). Obesity is associated with excessive intake of foods and drinks rich in nutrients responsible for excessive secretion of lithogenic elements such as oxalate, uric acid and sodium, such nutrients lead not only to an increase in lithiasis prevalence, but also in the size of the stones (24). Penn et al. disagree with our results that effective ESWL management in obese patients (weight range 135 - 181 kg) assessment at free rate for three months of 68% (25) compare to 80 - 85% in non-obese patients (26). Mezentsev showed that advanced energy surroundings were applied to reach effective stone destruction in patients with morbid obesity but no severe difficulties were noted (25). This results above insisted that obesity and overweight not affected on satisfaction of patients after ESWL.

According to Shavit, obese and overweight kidney stone formers have a higher concentration of urinary uric acid and sodium, lower urinary pH and a higher prevalence of hypercalciuria compared with normal weight kidney stone formers. Moreover, the authors established a higher level of uric acid, but not calcium, in stones found in obese and overweight kidney stone formers (27). We could not compare our data, as the stones analysis was not available for our patients (28).

Stenting According to the most recent AUA/Endourological Society stone guidelines, routine stenting should not be performed in patients undergoing SWL. This recommendation is based on a meta-analysis published in 2011 that included eight studies and 876 patients (29). Although no difference was noted for success rate after SWL, the review did show a benefit of reducing the steinstrasse rate with stenting (29). In our study ureteric stent were indicated prior to ESWL in renal stones 2 cm or more in size or impacted ureteric stones causing distal obstruction, the incidence of LUTS was significantly higher in the stented group than in the no stented group. Thus, patients with a D-Jstent have frequent and evident LUTS which may be attributed to bladder irritation by
the stent itself acting as a foreign body. Furthermore, these symptoms may be sufficiently severe to affect patient quality of life and this negatively affects the patients’ satisfaction (30).

CONCLUSION

Most patients with ureteric stone satisfied after ESWL session and pain was stop, most satisfied patients have no accessory intervention with no role to gender, age and BMI on patients’ satisfaction.

ETHICAL CLEARANCE

The Research Ethical Committee at scientific research by ethical approval of both environmental and health and higher education and scientific research ministries in Iraq

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

FUNDING: Self-funding

REFERENCES


