RESULTS OF 1200 CASES WHO WERE TREATED WITH THE TURKISH LITHOTRIPTOR MULTIMED

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Management of urinary stone disease has been revolution by the induction of extracorporeal shockwave lithotripsy (SWL) and it is accepted as the first line treatment in patients with urolithiasis. Beside other therapeutic options SWL is not devoid of side effects. We have learned that the first generation Dornier HM3 lithotriptor, while extremely effective in fragmenting calculi, is not without potential side effects. Numerous studies have sought to identify improvements in SWL technology as well as refinements in technique that might improve efficiency of stone fragmentation and removal, while limiting the potential side effects. Shortly after development of the Dornier HM3 lithotriptor, a number of companies rushed to developed so - called second and third generation lithotriptors. These new devices offered improvements in patients handling and decreased anesthesia requirements. Among them ELMED JSC. has produced Multimed as a first Turkish Lithotriptor. In this study we aimed to evaluate the results of first 1200 cases treated at UROMED ESWL center.

Patients and Methods

From September 1992 to January 1996, 1200 patients with renal, ureteral and bladder calculi underwent ESWL with Multimed. The localization and percent of the stones are shown in table I. All procedures were done with the patients under intravenous analgesia if needed.

Lithotripsy treatments are performed without gating. The stone size was the greatest diameter measured with single stones or the sum of the greatest diameter of each stones when multiple stones were present. Follow-up by the treating urologist after end of ESWL sessions included a plain radiograph or ultrasonography to determine the stone free status. That fragments less than 4 mm. in diameter have been accepted it has enough fragmented and passable through urinary tract.

Multimed is a battles, portable and with spark - gap electrode generator lithotriptor made by ELMED JSC. , ANKARA, TURKEY. With the standard C - Arm or U - Arm fluoroscopy unit, stones in all part of the urinary tract can be easily localized. Standard shock voltage is between 12 and 24 kV. Digital control panel provides comfortable and user friendly sessions. The multifunctional table can be used as an urological table to perform endourological procedures under fluoroscopy.

Results

The mean voltage was 15.86 (12 - 21) and the mean of number of shock wave was 1650 (1000 - 3000). Mean of the session numbers was 1.8 (1 - 9). The overall rate of fragmentation and stone free status were 95%, 73% consequently. Treatment results due to stone localization were shown in table II. The post - ESWL secondary endoscopic procedures such as ureterorenoscopy rate was 1%. There was no significant complication either during ESWL session or post - ESWL procedures.

Discussion

To date ESWL is preferred method of treatment for most cases of urolithiasis. Shock wave lithotripsy has came along way since the first patient was treated 1980. Never generation lithotriptors do offer improved patient safety, while in some cases maintaining efficient stone fragmentation. After HM3 lithotriptor, new devices offered improvements in patients handling and decreased anesthesia requirements. Increased numbers of shock wave to have been administered by ungating the shock wave to the electrocardiogram. Ungating shock wave treatment has been used firstly in Europe and become standard therapy.

Due to very successful stone free and fragmentation rates, Multimed has proved its' effectiveness and user friendly condition during last 4 years. After getting first successful treatment results with Multimed, more than 20 centers have begun to use Multimed. Because of its reasonable price and very low maintenance cost Multimed is became a good alternative between others.

Table I: Treatment parameters of 1200 cases.

Stone Size (mm)	1.050 (4 - 5.0)
Female / Male	1.8
Age	40 (74 - 68)
Stone Localization % (No)	
Renal	54 (648)
Upper Urether	31 (372)
Lower Urether	14 (168)
Bladder	1 (12)

Table II: The results of 1200 cases.

Localization	Fragmentation (%)	Stone free rate (%)
Renal	96.5	60.1
Upper Urether	94.7	84.7
Lower Urether	68.9	80.8
Bladder	87.5	83.5