

***“PROGNOSTIC FACTORS REGARDING THE EFFECTIVENESS AND COMPLICATIONS
OF THE TREATMENT BY MEANS OF EXTRACORPOREAL LITHOTRIPSY
IN RENAL AND URETERAL LITHIASIS”***

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Renal and ureteral lithiasis designates a condition characterized by the formation of concretions or calculi in the urinary tract, starting with the uriniferous tubule and ending with the urethral meatus, as a result of precipitation of substances which are normally dissolved in urine.

In the first part of the thesis, **the general chapter**, we presented: concepts of etiopathogenesis of urinary calculi by describing risk factors, particularly metabolic ones, which influence the extent and severity of urinary lithiasis and a classification of calculi followed by a brief description according to their composition. In the last part of **the general chapter** we described the treatment for renal and urethral lithiasis by means of extracorporeal lithotripsy (ESWL): physical principles of the lithotripter, indication for extracorporeal lithotripsy, selection criteria for patients, investigation protocol for diagnosis and indication for extracorporeal lithotripsy, contraindications of extracorporeal lithotripsy and complications of extracorporeal lithotripsy.

In the second part, the **special chapter** refers to the personal research conducted on the analyzed patients. The findings of the research were presented in the conclusions of the paper. **The working hypothesis** was based on the fact that urolithiasis plays an important role in urologic pathology due to its high incidence, frequency of recurrence and complications that might arise. ESWL is the first intention treatment method for the majority of renal and ureteral localized calculi, which are up to 20 mm in diameter; it is an effective and non-invasive method, with significantly less morbidity than other surgical procedures used to remove calculi. Nevertheless, complications may occur in some cases, including pain, hematuria and hematoma, or steinstrasse.

The scope of the study was to identify prognostic factors regarding the effectiveness / ineffectiveness and complications arising after the ESWL treatment in renal and ureteral lithiasis and the impact on the kidney related to shock waves that can change certain parameters.

Among the objectives we can mention: the study of renal and ureteral lithiasis according to demographic characteristics; the study of renal and ureteral lithiasis according to anthropometric characteristics (BMI, waist circumference); the study of renal and ureteral lithiasis in relation to the personal history of the patients; study of renal and ureteral lithiasis based on the chemical composition of the calculi; the assessment of the ESWL treatment; the study of post ESWL complications (hematoma,

urinary infections - pyelonephritis; steinstrasse); comparing the data with those in the literature.

We used a **prospective observational and analytical study**. We included 314 patients hospitalized in the Department of Extracorporeal Lithotripsy of the Târgu Mureș Urology Clinic between 01.01.2010 and 31.12.2012 with the diagnosis of urinary lithiasis. Initial monitoring involved a standard assessment protocol, which included a detailed anamnesis and a questionnaire with two components: the component for demographic data and a second component consisting of 11 elements used to identify aspects related to the ESWL treatment.

Results. The group of patients underwent on average 1.26 ESWL sessions. Most patients came to the clinic for only one ESWL session (190 persons - 60.5%). 77 patients (24.5%) saw a doctor for a second session and 13 patients (4.1%) for a third session. Three patients needed four sessions. Young people (31-40 years old) needed only one ESWL session while more advanced ages required more ESWL sessions. The number of requests for ESWL treatments can be influenced positively and significantly from the statistical point of view by the lower height of the patients, the increased weight or BMI. Monohydrate calcium oxalate and uric acid can have an influence on the number of ESWL treatment sessions. After the first ESWL session, the success rate for renal lithiasis was of 60.2%, for ureteral lithiasis of 80.3% and, in the case of multiple renal and ureteral calculi, the success rate was of 14.8%. When the lithiasic phenomenon was positioned on the right side, the success rate was of 72.3% and of 46.0% when it was positioned on the left side. The ESWL success rate depends on the presence of multiple calculi, on the localization of the calculus in the lower calyx, pelvic ureter or pyelon and whether these are localized on the left side of the body. Patients suffering from renal lithiasis and hypertension are 19.32 times more likely to develop renal hematoma after the ESWL treatment and those suffering from urinary lithiasis and urinary tract infection are 28.3 times more likely to develop acute pyelonephritis as compared to patients suffering from urinary lithiasis without an associated urinary infection. Out of our total number of patients: 9.6% were characterized in the diagnostic sheet by the presence of steinstrasse, 6.8% of the renal calculi, 7.4 of the renal and ureteral calculi and 19.7 of the ureteral calculi suffered complications with steinstrasse. We found that, most commonly, steinstrasse is located at the level of the pelvic ureter - 76.6%, followed by the one located at lumbar level -13.4%, and lastly, the one located at the level of the iliac ureter - 10.0%.

KEYWORDS: 1. extracorporeal lithotripsy , 2. prognostic factors, 3. effectiveness, 4. complications.