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Introduction & Objectives: The prevalence of lithiasis of urinary system in otherwise healthy person is reported to be 5-9% in Europe. The general incidence is 1500-2000 cases at one million population. The mechanisms involved in the contraction of smooth muscles of ureters is not fully explained. Calcium channel blocker and alpha-blockers have a pharmacological effect on distal ureter. The main mechanism involved in the pharmacological effects is represented by: reducing the tonicity of the smooth muscles and not by abolishing it.

The main goal of this study is to prove the efficacy of different pharmacological agents in the distal ureteral lithiasis with stones ≤ 10 mm.

Materials & Methods: It is a prospective study that took place from April 2016 till December 2018 in Urology Department of Clinical County Hospital Brasov, Romania. A total number of 118 patients were enrolled in the study with distal ureteral stone ≤ 10 mm. Four groups were created based on the expulsive therapy that was administrated: group 1 took expulsive treatment with Nifedipine 30 mg; group 2 took expulsive treatment with Tamsulosin 0,4 mg ; group 3 took expulsive treatment with Tamsulosin 0,4 mg associated with Diclofenac 50 mg 3 times a day; group 4 control (no expulsive treatment was administrated). The main exclusion criteria of the study are represented by: systemic inflammatory response, fever or rebel colic.

Results: No statistical differences were observed between the groups that underwent expulsion therapy (G1 vs G2 vs G3). The biggest expulsion rate was observed in third group, 26/29 (89.65%); statistically first and second group showed similar results. However group 3 tends to be a little superior than group 1 ($p=0.08$). All three groups showed expulsion rate net superior than the control group with a p value smaller than 0,003. The average time needed to expel the stone is: G1=9.5 days, G2=8.44 days, G3=7.58 days and the control group 12,13 days. The results mentioned before are statistically significant versus the control group: G1 Vs G4 $p=0,037$; G2 vs G4 $p=0.0053$; G3 vs G4 $p=0.0002$. Three patients from the first group showed adverse effect (hypotension) and needed to stop the expulsive treatment.

Conclusions: Our study has shown that uncomplicated distal ureteral lithiasis with stones ≤ 10 mm can have a conservative treatment with a stone free rate nearly to 90%. The treatment with Tamsulosin+Diclofenac has shown less adverse effects and does not need tensional monitoring. The less time is needed to evacuate a distal ureteral stone when expulsion therapy is applied.