

## Role of Deflazacort And Tamsulosin In Medical Expulsive Therapy For Symptomatic Lower Ureteric Stone: A Study Done in Rims, Ranchi .

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### Abstarct

**Aim:**To assess the role of corticosteroid deflazacort in combination with alpha blocker tamsulosin in medical management of symptomatic lower ureteric calculus.

**Introduction:**Urinary stone disease is a common condition accounting for 15-20% of our OPD. Ureteric stone with colic is a common Urological emergency, Ureterscopy with intra corporeal lithotripsy is a proven method of treatment and it is not free of complications. Recently medical expulsive therapy with drugs has been used which reduces the symptoms and helps in stone expulsion. We performed a randomized prospective study to evaluate the role of corticosteroid Deflazacort in combination with alpha blocker Tamsulosin in medical management of symptomatic lower ureteric stones of 5-10mm size.

**Materials And Methods:**Between 2015 to 2017 we enrolled 300 patients of symptomatic lower ureteric calculus of 5mm to 10 mm in diameter. In this study patients were divided in to 3 groups. Group A 120 patients received Tamsulosin and Deflazacort, Group B 90 patients received only Tamsulosin and Group C 90 patients received only analgesics. The treatment duration was 30 days. The end point were stone expulsion rate, analgesic consumption and number of surgical interventions .

**Results:**All the groups were comparable in terms of age, sex, stone size and stone location. 255 patients completed the study. The rate of stone expulsion for 3 groups were 102/114(89%), 60/75(80%), 30/66(45%) respectively. Statistically significant difference was noted between groups A&B with respect to group C. The mean analgesic consumption was less in group A. No significant side effects were reported with these drugs.

**Conclusion:**Deflazacort with Tamsulosin combination is proved to be efficient and has to be considered as first line of medical expulsive therapy in the management of symptomatic lower ureteric calculus. In addition Tamsulosin alone can be considered as alternative treatment for those not suitable for steroid therapy.

**Keywords:**Ureteric calculus, Tamsulosin, Deflazacort, medical expulsive therapy.

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### I. Introduction

Urinary stone disease is a common condition accounting for 15-20% of our OPD patients. Ureteric stone with colic is a common Urological emergency, Ureterscopy with intra corporeal lithotripsy is a proven method of treatment and it is not free of complications.<sup>1</sup>On the other hand watchful waiting approach can be used with good spontaneous expulsion of stones, even this approach has complications like recurrent ureteral colic, infection of urinary tract, hydronephrosis with its ill effects on renal function.<sup>2,3</sup>Recently medical expulsive therapy with drugs has been used which reduces the symptoms and helps in stone expulsion.<sup>4,5, and 6</sup> Some authors reported improved spontaneous expulsion rates using alpha blocker Tamsulosin, on the basis of evidence that alpha 1 receptors are present in ureteral smooth muscle cells, blocking of which improves stone expulsion<sup>7</sup>. Corticosteroid prevents the edematous reaction caused by the stone.<sup>4</sup>For this reason we performed a randomized prospective study to evaluate the role of corticosteroid Deflazacort in combination with alpha blocker Tamsulosin in medical management of symptomatic lower Ureteric stones of 5-10mm size.

### II. Materials And Methods

We studied 300 patients of ureteric colic with lower ureteric calculus presented to emergency room, from 2015 to 2017. Exclusion criteria were past history of spontaneous stone expulsion and past history of stone surgery, fever, gross hydronephrosis, pregnancy, diabetes, renal failure and peptic ulcer. All patients were evaluated by urine analysis, urine culture, serum creatinine, blood sugar estimation, CBP, ultrasound abdomen, plain x-ray KUB, non-contrast CT abdomen in cases where stone is not located with USG and KUB.300 patients with age group of 18-70yrs were randomized in to 3 groups. Group A -120 patient's received Deflazacort 18 mg per day and Tamsulosin 0.4 mg per day for 15 days. Group B-90 patients received Tamsulosin 0.4 mg od for 15 days. Group C (Control Group)-90 patients received only analgesics on demand. All patients were advised to

drink 3-4 ltrs of water per day and inj. Diclofenac 75mg IM on demand. All patients were advised to come for follow up after 15 days or whenever there is uncontrolled pain or fever or on spontaneous stone passage. Medical treatment was suspended in case of uncontrolled colic, fever, severe hydronephrosis and raised serum creatinine.

After 15 days all patients were subjected for examination and same diagnostic tests to evaluate the success of the treatment. Non responders with the evidence of stone were subjected for surgical treatment. If the patient is asymptomatic with evidence of stone after 15 days same treatment was continued for another 15 days.

### III. Results

300 Patients enrolled, 255 patients completed the study, the age, sex, stone sizes were comparable. 45 patients were lost for the study in first 15 days. Group A consists of 114 patients with overall stone expulsion rate of 89%, Group B 75 patients with overall stone expulsion rate of 80%, Group C 66 patients with overall stone expulsion rate of 45% in 30 days. 10% of patients in Group A, 16% patients in Group B, 40% patients in Group C underwent ureteroscopy because of uncontrollable pain during treatment or on unsuccessful expulsion after 15 days and after 30 days. No side effects were observed with drugs.

Table 1 and 2 lists the data and the results.

Parameters	Group A	Group B	Group C
	No. 120	No. 90	No. 90
Mean age	39.25 (25-62)	37.66 (18-60)	36.76 (25-70)
Male / Female	102 / 18	66 / 24	60 / 30
Ureteral stone side L/R	54 / 66	45 / 45	36 / 54
Stone Size	7mm(5-10)	7.03(5-10)	7mm(5-10)

Table 1: Clinical parameters of patients

Sl. No.	Parameter	Group A	Group B	Group C
		No. 120	No. 90	No. 90
1	Expulsion Rate in 15 days	84% (96/114)	80% (60/75)	36% (24/66)
2	Spontaneous Expulsion After 15 days	33% (18/54)	0% (0/15)	14% (6/42)
3	Overall expulsion up to 30 days	89% (102/114)	80% (60/75)	45% (30/66)
4	Ureteroscopies	10% (12 of 114)	16% (15 of 75)	40% (36 of 66)
5	Lost for study	5% (6 of 120)	17% (15 of 90)	27% (24 of 90)
6	Analgesic (Average) consumption	25 Mg (0-75 Mg)	50 Mg (0-150Mg)	92 Mg (75-225Mg)

Table 2: R E S U L T S

### IV. Discussion

Spontaneous passage of ureteric stone depends on stone size, site, anatomy of ureter and past history of stone passage.<sup>8</sup>The possible causes of stone retention like spasm, edema, infection are modified by the medical treatment. Median probability of stone passage is 68% for stone < 5 mm size and 47% for stones of 5 mm – 10 mm.<sup>9</sup> Newly diagnosed stones of <10 mm whose symptom are controlled are offered medical therapy which facilitates stone passage and limits pain. Steroids prevent the edematous reaction caused by the stone and aids in stone passage. Deflazacort is a good anti edemic drug, well tolerated with limited side effects.<sup>4</sup> Alpha blocker Tamsulosin reduces ureteral spasm and relaxes the ureter in the region of and distal to the stone.<sup>5</sup> This medical expulsive therapy was safe and effective as demonstrated by the increased stone expulsion rate and reduced analgesics consumption when compared to our control group. The medical therapy of combination of Deflazacort and Tamsulosin (group A) demonstrated good results in 89% of patients compared to control group C with 45% (89% vs 45%). We do not find any significant difference between group A (Tamsulosin + Deflazacort) and group B (only Tamsulosin). (89% vs 80%). Stone expulsion time was short in group A compare to group C (less than 7days vs morethan 11 days). Analgesic consumption and number of ureteroscopies were also significantly less in group A and B when compare to control group C. No major significant side effects were observed related to use of these drugs.

	Present study	Porpiglia. Fetall <sup>4</sup>	Dellabella. M etall <sup>5</sup>
1. Stone size :	5 - 10 mm	5 - 8 mm	5 - 8 mm
2. Over all stone expulsion rates			
Group A	89% (102/114)	84.8% (84/99)	100% (90/90)
Group B	80% (60/75)	60% (60/99)	
Group C	45% (30/66)	33.3% (24/72)	70% (63/90)
T A B L E			3

### V. Conclusion

The results of our study indicates that, steroid (deflazacort) with Tamsulosin is proved to be efficient and has to be considered as first line of medical treatment in the management of symptomatic distal ureteric calculi when watchful waiting approach is possible. In addition Tamsulosin alone can be considered as an alternative treatment for those not suitable for steroid therapy.

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