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ORIGINAL ARTICLE

Outcome of a-Blockers, with and without Corticosteroid Combination, in Medical Expulsive Therapy for Lower Ureteric Stones

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ABSTRACT

Background: Urinary calculi have serious implications in urology. Lower ureteral stones can cause obstructive uropathy and subsequent deterioration of renal function. Because the patient's symptoms and stone size do not predict loss of renal function and because there is no clear time threshold for irreversible damage, treatment should be strongly considered in any patient with ureteral stones. In this study we are comparing the results of medical expulsive therapy using alpha blockers with vs, without combination of corticosteroids as adding steroids increases the efficacy by decreasing stone expulsion time.

Keywords: Ureteric calculi, stone clearance, stone expulsion time, medical expulsive therapy.

INTRODUCTION

Urolithiasis is the commonest and oldest disease of the urinary tract .Its incidence is very high in Pakistan especially in south Punjab. Pakistan is part of the Afro-Asian stoneforming belt[2], where the prevalence of calculi rangesfrom 4% to 20%.[3] Most urinary stones that pass through the renal calyces to the renal pelvis and subsequently to the ureter cause serious symptoms.The most common symptoms of ureteral stones are pain, hydronephrosis and hematuria[1]. Indications of surgical intervention include failure of conservative treatment,solitary obstructed kidney, intractable pain, urosepsis and patient's choice.[3]

Active removal of ureter stones < 10 mm usually includes drug medication, medical expulsive therapy (MET), shock-wave lithotripsy (SWL), and ureteroscopic lithotripsy (URS) [4]The choice of intervention depends on patient factors, anatomical considerations, surgeon preference, and stone location and characteristics. Medical expulsive therapy (MET) is an excellent treatment modality in the appropriately selected patient.[3] This article reviews medical expulsive therapy in facilitating the spontaneous passage of ureteral stones and its use as an adjunct to other treatment modalities.

Medical management therapies include alpha-blockers, calcium channel blockers, corticosteroids, and phosphodiesterase-5 (PDE5) inhibitors. In my study a-blockers are being used as medical expulsive therapy. Characterization of adrenergic receptors in the human ureter and smooth muscle physiology led to the development of targeted medical treatment.Alpha adrenergic receptors are present in high density within the distal ureter. A-blockers relaxes the smooth muscles in the distal ureters which facilitates the stone passage.

The role of alpha-blockers in MET has been well described.[5] Current best practice guidelines recommend alpha-blockers for the expulsion of distal ureteral stones. Meta-analyses have demonstrated that patients treated with alpha-blockers are more likely to pass stones with fewer episodes of colic.[5] Both the European (EAU) and American Urological Associations (AUA) outline the role of alpha-blockers as a viable option in a select patient population who are comfortable with the approach and where there is no role for immediate surgical stone removal.[6]

While corticosteroids have found to be effective as an adjunct to alpha-blockers and calcium channel blockers, evidence remains insufficient to recommend steroids as a monotherapy, as outlined in the most recent EUA and AUA urolithiasis guidelines.[6.] The rationale for using corticosteroids is based on the principle that the presence of a stone in the ureter creates a mucosal inflammatory reaction, causing various grades of edema. Use of anti-edemic drugs is thought to reduce local ureteral inflammation and facilitate stone expulsion, therefore facilitates the stone passage and stone expulsion time is reduced.

In a study stone clearance rate with a-blocker alone was 60% and with the combination of corticosteroid was 84.8%.[7]. 2 weeks of follow-up seems sufficient for MET. In one study the mean or median stone passage time was of about 8 days after medication.[8]

Objective: The objective of the study was To determine the frequency of stone clearance of a-blockers with vs. without combination of corticosteroid, as medical expulsive therapy for lower ureteric stones.

Setting: Department of Urology, DHQ Teaching Hospital, Sargodha.

Study design: Randomized control trial

Duration of Study: Six months after approval of synopsis**.**

METHODOLOGY

After taking approval from hospital ethical committee, patients coming through OPD of the department, who fulfill the inclusion criteria will be enrolled and informed consent will be taken from them.

The biodata of the patients enrolled for study will be recorded . All the patients will be divided into 2 groups by following mehod. Group 1 will receive tamsulosin .4mg plus analgesia. Group 2 will receive tamsulosin .4mg plus methylprednisolone 10mg plus analgesics. Patients will be followed for stone clearance daily till 2nd week of treatment as per operational definition. Ultrasound (KUB) will be performed in radiology department by the radiologist for stone clearance. Furthermore, stone expulsion time will be calculated in number of days. Follow up will be done for 2 weeks by taking patient's contact number. All the information will be collected on Performa.

RESULTS

In our study, in group 1 out of 60 cases, 70%(n=42) were between 20-50 years of age whereas 30%(n=18) were between 51-70 years of age, mean+sd was calculated as 39.2+13.1years, 65%(n=39) were male while 35%(n=21) were females. Frequency of stone clearance was recorded in 65% (n=39) whereas 35%(n=21) had no stone clearance. Mean stone expulsion time was recorded as 6.6+2.6 days.

In group 2 out of 60 cases, 65%(n=39) were between 20-50 years of age whereas 35%(n=21) were between 51-80 years of age, mean+sd was calculated as 40.4+12.7 years, 70%(n=42) were male while 30%(n=18) were females. Frequency of stone clearance was recorded in 80% (n=48) whereas 20%(n=12) had no stone clearance. Mean stone expulsion time was recorded as 4.85+1.5 days.

Table 1:

		Group 1		Group 2	
		No. of patients	%	No. of patients	%
Stone clearance	Yes	39	65	48	80
	No	21	35	12	20
Total		60	100	60	100

CONCLUSION

We concluded that the frequency of stone clearance is higher and there was decrease in stone expulsion time in our study after using combination of alpha blockers and corticosteroids as compared to alone usage of alpha blockers for lower ureteric stones.

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