



Role of Alfuzosin in Spontaneous Passage of Distal Ureteric Calculi

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ABSTRACT

Medical expulsion therapy has been shown to be a useful adjunct to observation in the management of ureteral stones. Alpha-1-adrenergic receptor antagonists have been studied in this role. Alpha-1 receptors are located in the human ureter, especially the distal ureter. Alpha-blockers have been demonstrated to increase expulsion rates of distal ureteral stones, decrease time to expulsion, and decrease need for analgesia during stone passage. Alpha-blockers promote stone passage in patients receiving shock wave lithotripsy, and may be able to relieve ureteral stent-related symptoms. In the appropriate clinical scenario, the use of α -blockers is recommended in the conservative management of distal ureteral stones.

INTRODUCTION

The lifetime prevalence of renal stone disease is estimated at 1% to 15%, with the probability of having a stone varying according to age, gender, race and geographical location⁽¹⁾. Upper urinary tract stones occur more commonly in men than women by ratio of 3:1. Prevalence of renal stones also show geographical variability with highest prevalence in south east⁽²⁾

- Until 1980s, open surgical procedures were mainstay of treatment of ureteric stones. In last two decades, management of urinary stones has undergone revolutionary change.⁽³⁾
- Today, there is trend of either non invasive or minimally invasive procedures. With the availability of minimally invasive procedures like endoscopic treatment with

ureteroscopy (URSL) and ESWL, majority of ureteric stones can be removed without open surgery.⁽⁴⁾

- However, these procedures are not complication free and role of medical expulsive therapy (MET) is still unclear.

AIMS AND OBJECTIVES

The present study was conducted with the following Aims and Objectives:

1. To evaluate the role of Alfuzocin in spontaneous passage of distal ureteric calculi.
2. To assess the time taken for passage of distal uretic calculi using Alfuzocin.
3. To evaluate efficacy of Alfuzocin in clearance of distal uretric calculi as compared to placebo in terms of:

- Success rate in clearance
- Time taken for clearance
- Side effects of use, if any

ALFUZOSIN

- Alfuzosin is a quinoxaline based alpha 1 receptor antagonist with similar affinity to all alpha 1 receptor subtype. Alfuzosin is well absorbed and has bioavailability of about 64%. And has half life of about 3-5 hours. ⁽⁵⁾
- Alpha adrenergic antagonists can block alpha receptor that mediate contraction of non vascular smooth muscle ⁽⁶⁾

MATERIALS AND METHODS

- PLACE OF STUDY:** Dept. of General Surgery, Era Medical College and Hospital, Lucknow,.
- Duration of Study: January 2013 to August 2015.
- STUDY CASES:** This prospective study was conducted on patients with distal ureteric calculi in adult age group visiting opd of ELMCH from Jan 2013 to August 2015.
- CONTROL GROUP:** Comprised of 46 patients with distal ureteric calculi who were given Cap. Becosule (Vitamin B complex) (placebo) once a day for clearance of uretric calculi with plenty of fluids and analgesic as and when required.

- STUDY GROUP:** Comprised of 46 patients with distal uretric calculi who were given Tab. Alfuzosin hydrochloride 10 mg once a day for clearance of uretric calculi with plenty of fluids and analgesics as and when required.

INCLUSION CRITERIA

- Age above 18 years.
- Patients with <8mm calculus below pelvic rim

EXCLUSION CRITERIA

- Calculus size >8mm.
- Subjects with hypersensitivity to Alfuzosin
- Pregnant/ nursing females
- Solitary kidney
- Renal insufficiency
- UTI
- Patients on alpha blockers

FOLLOW UP

Patients were followed up at 7,14 and 21 days. At each follow up, USG KUB was done to assess passage of calculi.

STATISTICAL ANALYSIS

The statistical analysis was done using chi square test for proportions and independent samples "t" test for comparing means between 2 groups. Confidence level of study was kept at 95%, hence "p" value less than .05 indicated statistically significant difference.

RESULTS

GENDER WISE DISTRIBUTION OF PATIENTS IN TWO GROUPS

| GENDER | Study Group(n=46) | | Control Group (n=46) | |
|--------|-------------------|------------|----------------------|------------|
| | Number | percentage | Number | percentage |
| Male | 37 | 80.43 | 39 | 84.78 |
| Female | 9 | 19.56 | 7 | 15.21 |

CHIEF COMPLAINTS

| COMPLAINT | STUDY GROUP | | CONTROL GROUP | |
|-----------------------|-------------|------------|---------------|------------|
| | NUMBER | Percentage | NUMBER | Percentage |
| Pain | 35 | 76.08 | 24 | 52.17 |
| Frequency/ urgency | 14 | 30.43 | 19 | 41.30 |
| Dysuria | 8 | 17.39 | 8 | 17.39 |
| Hematuria | 2 | 4.3 | 3 | 6.52 |

OUTCOME

| | number | percentage | number | percentage |
|-------------------------------------|--------|------------|--------|------------|
| Passage of stone | 41 | 89.13 | 22 | 47.82 |
| DAY ON WHICH STONE WAS PASSED | | | | |
| Day 7 | 22 | 47.82 | 13 | 28.26 |
| Day 14 | 16 | 34.78 | 08 | 17.39 |
| Day 21 | 02 | 4.34 | 01 | 2.17 |
| Not passed | 5 | 10.86 | 24 | 52.17 |

DISCUSSION

Medical expulsion therapy has been shown to be a useful adjunct to observation in the management of ureteral stones. Alpha-1-adrenergic receptor antagonists have been studied in this role. Alpha-1 receptors are located in the human ureter, especially the distal ureter.⁽⁷⁾ Alpha-blockers have been demonstrated to increase expulsion rates of distal ureteral stones, decrease time to expulsion, and decrease need for analgesia during stone passage.⁽⁸⁾ Alpha-blockers promote stone passage in patients receiving shock wave lithotripsy, and may be able to relieve ureteral stent-related symptoms.⁽⁹⁾ In the appropriate clinical scenario,

the use of α -blockers is recommended in the conservative management of distal ureteral stones.⁽¹⁰⁾

CONCLUSION

- In our study, patient with Alfuzosin group demonstrated a higher incidence of spontaneous stone passage, more rapid clearance and decreased need of analgesics. This selective alpha 1 blocker should therefore be included in different schedules worldwide when a conservative approach is considered.

- This regimen has high efficacy, decreased side effect and better patient satisfaction

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