Can Sexual Intercourse Be an Alternative Therapy for Distal Ureteral Stones? A Prospective, Randomized, Controlled Study

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OBJECTIVE To investigate the effect of sexual intercourse on spontaneous passage of distal ureteral stones.

MATERIAL AND METHODS The patients were randomly divided into 3 groups with random number table envelope method. Patients in group 1 were asked to have sexual intercourse at least 3-4 times a week. Patients in group 2 were administered tamsulosin 0.4 mg/d. Patients in group 3 received standard medical therapy alone and acted as the controls. The expulsion rate was controlled after 2 and 4 weeks. Differences in the expulsion rate between groups were compared with the chi-square test for 3×2 tables. $P < .05$ was considered as statistically significant.

RESULTS The mean stone size was 4.7 ± 0.8 mm in group 1, 5 ± 1 mm group 2, and 4.9 ± 0.8 mm group 3 ($P = .4$). Two weeks later, 26 of 31 patients (83.9%) in the sexual intercourse group, and 10 of 21 patients (47.6%) in tamsulosin group passed their stones, whereas 8 of 23 patients (34.8%) in the control group passed their stones ($P = .001$). The mean stone expulsion time was 10 ± 5.8 days in group 1, 16.6 ± 8.5 days in group 2, and 18 ± 5.5 days in group 3 ($P = .0001$).

CONCLUSION Our results have indicated that patients who have distal ureteral stones ≤ 6 mm and a sexual partner may be advised to have sexual intercourse 3-4 times a week to increase the probability of spontaneous passage of the stones. UROLOGY 86: 19–24, 2015. © 2015 Elsevier Inc.

The agents used in the medical expulsive therapy (MET) of ureteral stones act either by inhibiting calcium channel pumps or by blocking α-1 receptors to decrease the smooth muscle tone.[1,2] Meta-analyses showed that patients on MET pass their stones with less colic attacks compared with the ones who did not have this therapy.[1,2] Tamsulosin is one of the most frequently used α-blockers.[3-5] MET is based on the high α-receptor density in the distal ureter. It was shown that α-1 adrenergic receptor blockage decreased contractions and peristaltic frequency in the distal ureter and inhibited basal tone.[6]

Pharmacologic studies performed 20 years ago showed nitrinergic fibers in human and porcine intravesical ureters.[7,8] A nitric oxide (NO) donor, 3-morpholinosydnonimine, caused relaxation in human ureter. In addition, both endogenously released and exogenously administered NO caused relaxation in porcine intravesical ureter.[8,9] The main neurotransmitter that plays a role in erection and during sexual intercourse is NO. However, the type of neural stimulus that is transmitted to ureter during sexual intercourse is not clearly known. The aim of this study was to investigate whether sexual intercourse had an effect on passage of distal ureteral stones.

MATERIAL AND METHODS

This study was performed between September 2013 and October 2014 after obtaining the approval of our hospital's local ethics committee. Literate male patients who admitted to our clinic with renal colic and inguinal pain or lumbar pain, as well as the patients who were referred to our clinic with those symptoms and diagnosed with distal ureteral stones, were included in the study. All patients gave their written informed consents. The patients were randomly divided into 3 groups with the random number table envelope method. The names of the groups were written on small papers with the same size, they were folded, put in an envelope, and drawn by the patients. All patients included in the study had radiopaque distal ureteral stones. The ones aged <18 years, who did not have an active sexual partner, who described erectile dysfunction, had diabetes mellitus, had a stone >6 mm, had a stone located in the mid-ureter or proximal ureter

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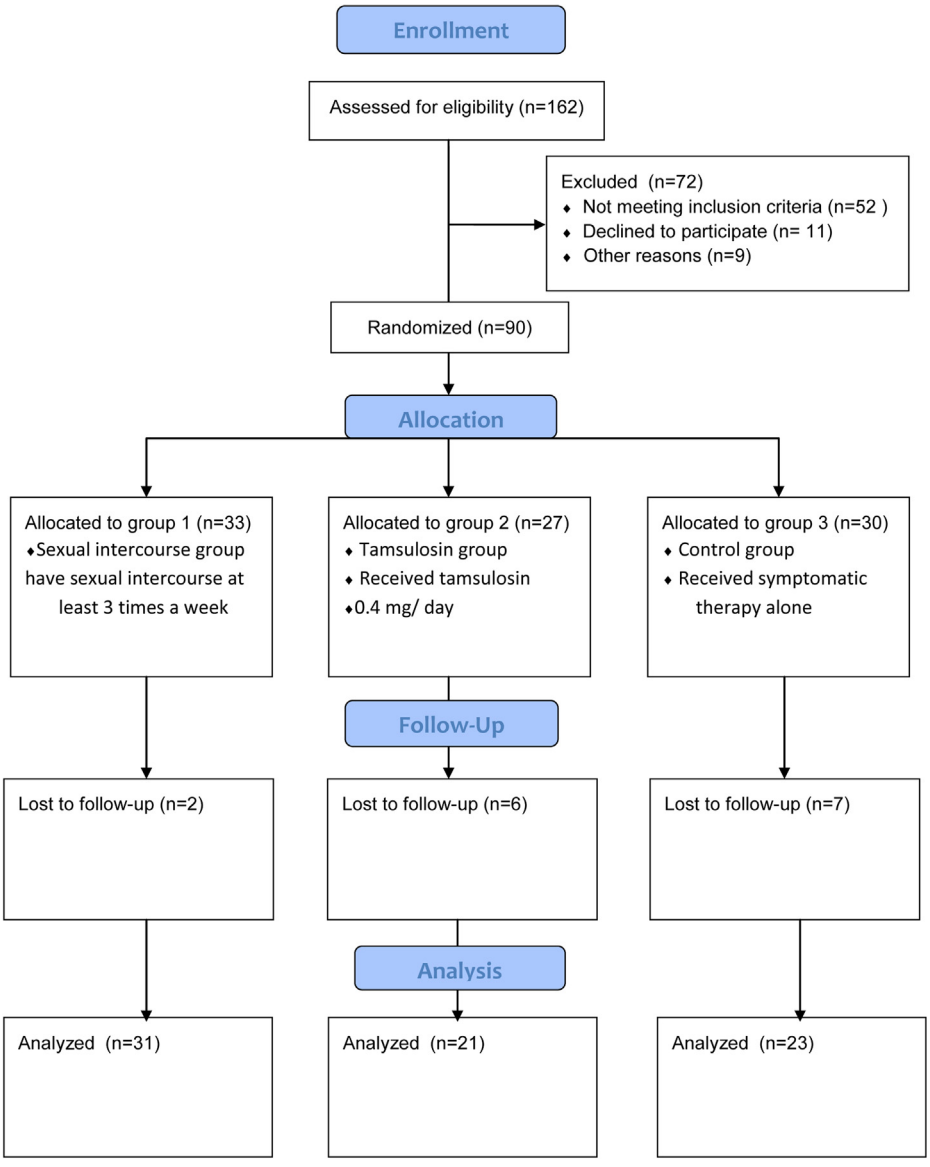

Figure 1. CONSORT flow diagram. (Color version available online.)

(above iliac vessels), had nonopaque or multiple stones, had urinary tract infection, had severe hydronephrosis, had a history of stone passage or previous endoscopic or open ureteral surgery, had high serum creatinine levels, and the ones who previously used α-1 adrenergic receptor or calcium canal blockers were excluded.

The age of the patient and the size and side of the stone were noted. The size of the stone was determined by measuring the longest diameter of the stone on plain urinary tract x-ray. All patients were prescribed hyoscine-*N*-butyl bromide (Buscopan, Boehringer Ingelheim) 10 mg twice daily orally and 75 mg diclofenac injections, when needed. In addition, all patients were advised to drink 2 L of water at minimum. The patients in the sexual intercourse group (group 1) were told to have sexual intercourse at least 3 times a week. Tamsulosin group (group 2) was given 0.4 mg/d tamsulosin. Group 3 received symptomatic therapy alone and acted as the control group. Sexual intercourse and masturbation were prohibited in groups 2 and 3 throughout the treatment period. On follow-up, all patients filled in questionnaires considering the number of the pain episodes, the need for analgesic injections, and the number of sexual intercourses.

All patients had plain urinary tract x-ray, urinary tract ultrasonography, noncontrast computerized tomography, and urinalysis before study, and their urea and creatinine levels were measured. Patients were followed-up with plain urinary tract x-ray, ultrasonography, and urinalysis every week until the passage of the stone or for a maximum period of 4 weeks. Passage of the stone was determined by declaration of the patient and loss of the radiopaque appearance of the stone on plain urinary tract x-ray. On follow-up, plain urinary tract r-ray images of the patients were seen and analyzed by an urologist (MFK) blinded to the group of the patients.

Before patient recruitment, the sample size required for each arm was calculated on the basis of previous studies that predicted stone expulsion rate as 90% and 65% with and without tamsulosin therapy, respectively, with a difference of 25%.[10-12] Because stone expulsion rate in the sexual intercourse group has not been studied before, we estimated the sample size similar