



Tamsulosin for patients with ureteral stones?

Yes, but only for some. Find out which of your patients can benefit.

PRACTICE CHANGER

Prescribe tamsulosin for stone expulsion in patients with distal ureteral stones 5 to 10 mm in size.¹

STRENGTH OF RECOMMENDATION

A: Based on a meta-analysis of randomized controlled trials.

Wang RC, Smith-Bindman R, Whitaker E, et al. Effect of tamsulosin on stone passage for ureteral stones: a systematic review and meta-analysis. *Ann Emerg Med.* 2017;69:353-361.

ILLUSTRATIVE CASE

A 54-year-old man presents to the emergency department (ED) with acute onset left flank pain that radiates to the groin. A computed tomography (CT) scan of the abdomen/pelvis without contrast reveals a 7-mm distal ureteral stone. He is deemed appropriate for outpatient management. In addition to pain medications, should you prescribe tamsulosin?

According to the most recent National Health and Nutrition Examination Survey, the population prevalence of kidney stones is 8.8% with a self-reported prevalence in men of 10.6% and a self-reported prevalence in women of 7.1%.² Most ureteral stones can be treated in the outpatient setting with oral hydration, antiemetics, and pain control with nonsteroidal anti-inflammatory medications as first-line treatment and opioids as a second-line option.³ In addition, alpha-blockers are used for medical expulsive therapy (MET). In fact, the European Association of Urology guideline

on urolithiasis states that MET may accelerate passage of ureteral stones.³

Recently, however, uncertainty has surrounded the effectiveness of the alpha-blocker tamsulosin. Two systematic reviews, limited by heterogeneity because some of the studies lacked a placebo control and blinding, concluded that alpha-blockers increased stone passage within one to 6 weeks when compared with placebo or no additional therapy.^{4,5} However, a recent large multicenter, randomized controlled trial (RCT) revealed no difference between tamsulosin and nifedipine or either one compared with placebo at decreasing the need for further treatment to achieve stone passage within 4 weeks.⁶

STUDY SUMMARY

New meta-analysis breaks down results by stone size

This meta-analysis by Wang et al, consisting of 8 randomized, double-blind, placebo-controlled trials of adult patients (N=1384), examined the effect of oral tamsulosin 0.4 mg/d (average of a 28-day course) on distal ureteral stone passage.¹ A subgroup analysis comparing stone size (<5 mm and 5-10 mm) was also conducted to determine if stone size modified the effect of tamsulosin.

Although the initial search included studies published between 1966 and 2015, the 8 that were eventually analyzed were published between 2009 and 2015, were conducted in multiple countries (and included regardless of language), and were conducted in ED and outpatient urology set-

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INSTANT POLL

For which patients with ureteral stones do you typically prescribe tamsulosin?

- None of my patients
- Those with stones <5 mm in size
- Those with stones 5 to 10 mm in size
- All patients with ureteral stones

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➤ This review went one step further by examining passage rates by stone size and revealed that passage of larger stones (5-10 mm) increased with tamsulosin.

tings. The main outcome measure was the risk difference in stone passage between the tamsulosin group and placebo group after follow-up imaging at 3 weeks with CT or plain film radiographs.

■ **Tamsulosin helps some, but not all.**

The pooled risk of stone passage was higher in the tamsulosin group than in the placebo group (85% vs 66%; risk difference [RD]=17%; 95% confidence interval [CI], 6%-27%), but significant heterogeneity existed across the trials ($I^2=80.2\%$). After subgroup analysis by stone size, the researchers found that tamsulosin was beneficial for larger stones, 5 to 10 mm in size (6 trials, N=514; RD=22%; 95% CI, 12%-33%; number needed to treat=5), compared with placebo, but not for smaller stones, <5 mm in size (4 trials, N=533; RD=-0.3%; 95% CI, -4% to 3%). The measure of heterogeneity in the 5- to 10-mm subgroup demonstrated a less heterogeneous population of studies ($I^2=33\%$) than that for the <5-mm subgroup ($I^2=0\%$).

■ **In terms of adverse events,** tamsulosin did not increase the risk of dizziness (RD=.2%; 95% CI, -2.1% to 2.5%) or postural hypotension (RD=.1%; 95% CI, -0.4% to 0.5%) compared with placebo.

WHAT'S NEW

Passage of larger stones increases with tamsulosin

This meta-analysis included only randomized, double-blind, placebo-controlled trials. Prior meta-analyses did not. Also, this review included the SUSPEND (Spontaneous Urinary Stone Passage Enabled by Drugs) trial, an RCT discussed in a previous PURL (Kidney stones? It's time to rethink those meds. *J Fam Pract.* 2016;65:118-120.) that recommended against the alpha-blockers tamsulosin and nifedipine for ureteral stones measuring <10 mm.^{6,7}

But the subgroup analysis in this more recent review went one step further in the investigation of tamsulosin's effect by examining passage rates by stone size (<5 mm

vs 5-10 mm) and revealing that passage of larger stones (5-10 mm) increased with tamsulosin. The different results based on stone size may explain the recent uncertainty as to whether tamsulosin improves the rate of stone passage.

CAVEATS

Study doesn't address proximal, or extra-large stones

Only distal stones were included in 7 of the 8 trials. Thus, this meta-analysis was unable to determine the effect on more proximal stones. Also, it's unclear if the drug provides any benefit with stones >10 mm in size.

CHALLENGES TO IMPLEMENTATION

None worth mentioning

We see no challenges to implementation of this recommendation. **JFP**

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