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EVMS EM Journal Club

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P: In a patient with diagnosed ureterolithiasis

I: do medical 'expulsive' agents such as tamsulosin (Flomax)

C: compared to usual care (pain control / fluids)

O: improve the likelihood of spontaneous passage of stone ?

Patient: A 50 yo M presents to the ED for evaluation of flank pain and hematuria. Dry CT of the abdomen/pelvis shows a 5 mm nonobstructing calculus with mild hydroureter. No UTI is discovered, and BUN and Creatinine are within normal limits. Would this patient benefit from Flomax?

Title	Author/Date	Patient Group	Study Type	Outcomes	Results	Limitations
Medical therapy to facilitate urinary stone passage: a meta analysis	Hollingsworth, et al  Lancet, Vol 368, Sept 30 2006	693 patients total from 34-46 yo. Stones ranged from 3.9 mm to 7.8 mm, most distal 1/3 of ureter	Literature search of MEDLINE, Pre-MEDLINE, CINAHL, EMBASE upto July 2005	65% higher risk of stone passage in MET group (CI 1.45-1.88), p<0.0001	Tamsulosin helps with distal stone passage (65% greater likelihood with Ca or alpha blockers)  Additionally found significantly reduced time to stone passage, fewer pain episodes, lower pain scores, lower doses of	Side effects were poorly categorized  Very different treatments among the studies (Ca blockers, alpha blockers, combination, +/- steroids)  Publication bias-positive studies were more likely to show up in the

					analgesics	literature
A Systematic Review of Medical Therapy to Facilitate Passage of Ureteral Calculi	Singh et al  Annals of Emergency Medicine, Nov 2007	16 studies, patients at least 18 yo, clinically and radiographically dx with ureteral colic, on MET with alpha or Ca-blocker	Literature search of MEDLINE, EMBASE, and Cochrane Controlled Trials Register  Stone size 4.7mm-6.8 mm	Alpha antagonist improved stone expulsion (RR 1.59, 95% CI 1.44-1.75, NNT 3.3)  2-6 day improvement in time to expulsion	Using an alpha antagonist will help expel the stone without surgical intervention	Heterogeneity among studies, publication bias, generalization to ED population? NON-CONSORT Compliant  Avg. Jadad score was low 2 (0-5)
Is There a Role for Tamsulosin in the Treatment of Distal Ureteral Stones of 7 mm or Less?	Hermanns, Thomas et al  April 3, 2009  European Urology 56 (2009) 407-412	M/F age >18 with acute renal colic, found to have a stone < 7 mm in size and below the iliac vessel on CT  Exclusion: multiple stones, ARF, UTI, solitary kidney pregnant, h/o ureteral surgery or endoscopic procedure, allergy to tamsulosin, alpha blocker therapy, Ca-antagonist or corticosteroid therapy	Randomized, double blind placebo controlled	Stone expulsion rate in the tamsulosin arm and placebo arm was not significantly changed (86.7%, 88.9%, p=1.0)  Median passage time was not significantly significant (tamsulosin 7d, placebo 10d, p=0.36)  Analgesia was significant lower in tamsulosin arm vs placebo (3 vs 7, p=.011)	Rate of stone passage is not stat sig, however clinically sig using tamsulosin  patients may see an analgesic affect	Exact time of stone passage missing for 29 people  Stone size may have skewed the results in favor if placebo  Did not state if they used JADAD scores to qualify studies

		Enrolled by attending urologist				
Tamsulosin HCl vs Placebo for Management of Distal Ureteral Stones	Vincendeau et al Archives of Internal Medicine Vol 170 (No 22) Dec 13, 2010	Patients presenting with ureteral colic and sradioopaque distal stones 2-7 mm in size	Multicenter, placebo-controlled, double-blind study  Main endpoint: stone expulsion by day 42	Stone size on average 3.1 mm.  No stat sig difference in expulsion delay (tam 9.6d, placebo 10.1d, p=.82) and there are no stat sig differences throughout the 42 day span.  Also no significant difference in: urgent hospitalization, time to surgery, pain relapses, morphine requirement or use of steroids, or adverse effects	Tamsulosin did not improve stone passage rate, shortened time to stone expulsion, or reduced number of episodes of ureteral colic	Stone size only 3.1 mm, which led to a higher spont pass rate than prior trials in favor of MET.

Clinical Bottom Line: Overall quality of the studies (generally poor with Jadad scores that suggest significant risk of bias and methodological flaws)v Reported harms from treatment seem negligible. An EBM approach includes a. Best evidence (which appears to suggests a trend

towards improvement in both expulsion rates and pain control) Clinical experience (which would include individual clinician experience or expert experience and in this case an AUA guideline that appears to support the use of medical expulsive agents) and finally patient wishes (after providing a lay-version of their treatment options and costs) so as to be able to make an informed decision. While the time to expulsion may not be clinically significant, decreasing a patient's pain and thereby the cost due to lost wages by 3 days is certainly clinically significant, especially given that Flomax is well tolerated in most patients.