Table 2 Continued

Author, date, country	Patient group	Study type	Outcomes	Key results	Study weaknesses
Ram <i>et al</i> , 2002, Israel	44 children (age 7.9 ± 2.2 years), 21 girls and 23 boys; were given 1.8 ml of 2% lignocaine with 1:100 000 epinephrine at a rate of 1 ml/min, on two separate occasions. The injections were for dental procedures (palatal or mandibular blocks). Topical anaesthetic gel (5% lignocaine) was applied to the site of injection 1 min before injection	Single-blinded randomised trial	Objective using the modified Behavior Pain Scale (BPS) (Taddio <i>et al</i>), Wong-Baker FACES Pain Rating Scale (FPS), and 100 mm VAS	No statistically significant difference between warmed and room temperature solutions was found using any of the measurement tools	Small sample (44). Single-blinded. The use of topical local anaesthetic may obscure any potential difference (especially that VAS scores were 0 in 29 instances). Atraumatic dental procedure

CI, confidence interval; RCT, randomised controlled trial; VAS, visual analogue scale.

Barfield JM, Crisafulli KM, Raccio-Robak N, *et al*. The effects of warming and buffering on pain of infiltration of lidocaine. *Acad Emerg Med* 1995;**2**:254–8.

Brogan GX Jr, Giarrusso E, Hollander JE, *et al*. Comparison of plain, warmed, and buffered lidocaine for anesthesia of traumatic wounds. *Ann Emerg Med* 1995;**26**:121–5.

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Martin S, Jones JS, Wynn BN. Does warming local anesthetic reduce the pain of subcutaneous injection? *Am J Emerg Med* 1996;**14**:10–2.

Jones JS, Plzak C, Wynn BN, *et al*. Effect of temperature and pH adjustment of bupivacaine for intradermal anesthesia. *Am J Emerg Med* 1998;**16**:117–20.

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Use of tamsulosin in patients with urinary calculi to increase spontaneous stone passage

Report by Brook Woolley, *Emergency Medicine Resident*
Checked by Jeffrey Jones, *Research Director*
Grand Rapids Medical Education & Research/
Michigan State University, Michigan, USA
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Abstract

A short cut review was carried out to establish whether tamsulosin enhances the chances of spontaneous stone expulsion in renal colic. Thirty-five papers were found using the reported searches, of which two (a meta-analysis and one further randomised controlled trial) presented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results and study weaknesses of these papers are presented in table 3. It is concluded tamsulosin may be useful during periods of watchful waiting to enhance ureteric stone expulsion.

Three-part question

In [patients presenting to the emergency department with urinary calculi] is [tamsulosin better than conservative therapy] at [promoting spontaneous stone passage]?

Clinical scenario

A patient presents to the emergency department with a 6 mm calculi in the left distal ureter. You wonder if the use of tamsulosin would improve the chances of spontaneous stone passage.

Search strategy

Medline 1950–July week 4 2007 using the OVID interface: [(exp ureteral obstruction/or exp ureteral calculi/) AND (exp adrenergic alpha-antagonists/or tamsulosin.mp.)]. LIMIT to human AND English.

The Cochrane Library Issue 3 2007: tamulosin.ti.ab.kw. 135 records, all duplicated in meta-analysis.

Outcome

Thirty-five papers were found, of which 13 papers were relevant to the study question. One paper was a recent meta-analysis (2007) which included all but one of the relevant randomised controlled trials.

Table 3

Author, date country	Patient group	Study type	Outcomes	Key results	Study weaknesses
Parsons <i>et al</i> , 2007, USA	11 RCTs that assessed spontaneous stone expulsion as either a primary or secondary outcome. 911 subjects with the use of any α -blocker in the treatment arm and use of conservative therapy (ie, fluids and pain control) in at least one control arm	Meta-analysis of RCTs	Stone expulsion	RR 1.44 (95% CI 1.31 to 1.59) in α -blocker group	Funnel plot was asymmetric. Did not specifically study tamsulosin, but α -blockers as a whole
Erturhan <i>et al</i> , 2006, Turkey	120 patients with renal stones. Tamsulosin 0.4 mg daily vs tamsulosin 0.4 mg daily and tolterodine 2 mg twice daily vs tolterodine 2 mg twice daily vs conservative	RCT	Expulsion rate	73.3% vs 70% vs 46.6% vs 40%	Outpatient study

CI, confidence interval; RCT, randomised controlled trial; RR, relative risk.

Comments

A well designed meta-analysis reviewed all prospective, randomised controlled clinical trials that used only α -blockers in the treatment of ureteric stone patients, and included at least one control arm. This meta-analysis compiled 11 studies meeting these strict criteria and confirms the beneficial effect of this treatment implied by these small individual studies. The majority of the studies used tamsulosin 0.4 mg daily and half of them showed a significant benefit of treatment within 2 weeks.

Medical treatment to promote spontaneous expulsion of ureteric stones may potentially diminish health care expenditures associated with shock wave lithotripsy and ureteroscopy. Tamsulosin's proposed mechanism is selective relaxation of

ureteral smooth muscle, with subsequent inhibition of ureteric spasms and dilatation of the ureteric lumen.

Further studies are needed to identify which patients in terms of stone size, location, duration of colic, and degree of impaction and obstruction are most likely to benefit from α -blocker treatment.

► CLINICAL BOTTOM LINE

Tamsulosin may be useful during periods of watchful waiting to enhance ureteric stone expulsion.

Parsons JK, Hergan LA, Sakamoto K, *et al*. Efficacy of alpha-blockers for the treatment of ureteral stones. *J Urol* 2007;**177**:983–7.

Erturhan S, Erbagci A, Yagci F, *et al*. Comparative evaluation of efficacy of use of tamsulosin and/or tolterodine for medical treatment of distal ureteral stones. *Urology* 2007;**69**:633–6.