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Original Contribution

## Tolterodine and Tamsulosin for Treatment of Men With Lower Urinary Tract Symptoms and Overactive Bladder

### A Randomized Controlled Trial

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JAMA. 2006;296:2319-2328.

**Context** Men with overactive bladder and other lower urinary tract symptoms may not respond to monotherapy with antimuscarinic agents or  $\alpha$ -receptor antagonists.

**Objective** To evaluate the efficacy and safety of tolterodine extended release (ER), tamsulosin, or both in men who met research criteria for both overactive bladder and benign prostatic hyperplasia.

**Design, Setting, and Participants** Randomized, double-blind, placebo-controlled trial conducted at 95 urology clinics in the United States involving men 40 years or older who had a total International Prostate Symptom Score of 12 or higher and, an International Prostate Symptom Score quality-of-life (QOL) item score of 3 or higher, a self-rated bladder condition of at least moderate bother, and a bladder diary documenting micturition frequency ( $\geq 8$  micturitions per 24 hours) and urgency ( $\geq 3$  episodes per 24 hours), with or without urgency urinary incontinence. Patients were recruited between November 2004 and February 2006, and the study was completed May 2006.

**Interventions** Patients were randomly assigned to receive placebo ( $n = 222$ ), 4 mg of tolterodine ER ( $n = 217$ ), 0.4 mg of tamsulosin ( $n = 215$ ), or both tolterodine ER plus tamsulosin ( $n = 225$ ) for 12 weeks.

**Main Outcome Measures** Patient perception of treatment benefit, bladder diary variables, International Prostate Symptom Scores, and safety and tolerability were assessed.

**Results** A total of 172 men (80%) receiving tolterodine ER plus tamsulosin reported treatment benefit by week 12 compared with 132 patients (62%) receiving placebo ( $P < .001$ ), 146 (71%) receiving tamsulosin ( $P = .06$  vs placebo), or 135 (65%) receiving tolterodine ER ( $P = .48$  vs placebo). Patients receiving tolterodine ER plus tamsulosin compared with placebo experienced significant reductions in urgency urinary incontinence ( $-0.88$  vs  $-0.31$ ,  $P = .005$ ), urgency episodes without incontinence ( $-3.33$  vs  $-2.54$ ,  $P = .03$ ), micturitions per 24 hours ( $-2.54$  vs  $-1.41$ ,  $P < .001$ ), and micturitions per night ( $-0.59$  vs  $-0.39$ ,  $P = .02$ ). Patients receiving tolterodine ER plus tamsulosin demonstrated significant improvements on the total International Prostate Symptom Score ( $-8.02$  vs placebo,  $-6.19$ ,  $P = .003$ ) and QOL item ( $-1.61$  vs  $-1.17$ ,

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$P=.003$ ). All interventions were well tolerated. The incidence of acute urinary retention requiring catheterization was low (tolterodine ER plus tamsulosin, 0.4%; tolterodine ER, 0.5%; tamsulosin, 0%; and placebo, 0%).

**Conclusions** These results suggest that treatment with tolterodine ER plus tamsulosin for 12 weeks provides benefit for men with moderate to severe lower urinary tract symptoms including overactive bladder.

**Clinical Trials Registration** [clinicaltrials.gov](http://clinicaltrials.gov) Identifier: [NCT00147654](https://clinicaltrials.gov/ct2/show/study/NCT00147654)

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