Review: Drugs do not improve symptoms in urinary urge incontinence and may have side effects


**Question**
Is drug therapy effective for urinary urge incontinence (UI)?

**Data Sources**
Studies published up to October 2000 were identified by searching MEDLINE (from 1966), EMBASE/Excerpta Medica (from 1989), and the Cochrane Controlled Trials Register.

**Study Selection**
Original English-language studies were selected if they were randomized placebo-controlled trials of drug therapies other than hormone therapy in patients with UI confirmed by urodynamic assessment and outcomes included ≥ 1 of subjectimprovement, results of a urodynamic evaluation, or adverse effects.

**Data Extraction**
3 independent investigators extracted data on number of patients, inclusion and exclusion criteria, type of drug, and outcomes. Quality of individual trials was assessed on the basis of the randomization process, patient exclusions after randomization, and patient compliance.

**Main Results**
47 trials met the selection criteria, but 11 trials of terodiline were excluded from analysis because it was withdrawn from the market. Sample sizes in the remaining 36 trials ranged from 20 to 316. Meta-analysis was not done because of heterogeneity among trials. Only drugs that were assessed in > 1 trial are reported here. Results for the anticholinergic drugs oxybutinin, emepropronium, and tolterodine are summarized in the Table.

12 trials assessed alternative drug regimens. Flavoxate had no effect on symptoms in 1 of 1 trial (n = 38) or adverse effects in 2 of 2 trials (n = 91). Flurbiprofen improved symptoms in 1 of 1 trial (n = 58), but increased adverse effects in 1 of 1 trial (n = 61) and had no effect on dry mouth in 2 of 2 trials (n = 121) or adverse effects that stopped treatment in 2 of 2 trials (n = 126).

**Conclusion**
Limited evidence suggests that drugs commonly used for incontinence—oxybutinin, emepropronium, tolterodine, and flavoxate—are either ineffective or have a low rate of effectiveness that is counterbalanced by an increase in specific adverse effects.

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**Effectiveness of anticholinergic drugs for urinary urge incontinence**

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Oxybutinin (number of patients)</th>
<th>Emepropronium (number of patients)</th>
<th>Tolterodine (number of patients)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Improved in 2 (n = 137) of 5 trials (n = 456)</td>
<td>Improved in 1 (n = 36) of 5 trials (n = 192)</td>
<td>No difference in 2 of 2 trials (n = 449)</td>
</tr>
<tr>
<td>Bladder stability</td>
<td>No difference in 2 of 2 trials (n = 145)</td>
<td>No difference in 1 of 1 trial (n = 40)</td>
<td>Not assessed</td>
</tr>
<tr>
<td>Adverse effects</td>
<td>Increased in 3 (n = 507) of 4 trials (n = 546)</td>
<td>Increased in 1 (n = 36) of 4 trials (n = 156)</td>
<td>No difference in 4 of 4 trials (n = 587)</td>
</tr>
<tr>
<td>Dry mouth</td>
<td>Increased in 5 (n = 662) of 7 trials (n = 845)</td>
<td>No difference in 4 of 4 trials (n = 156)</td>
<td>Increased in 2 (n = 491) of 5 trials (n = 903)</td>
</tr>
<tr>
<td>Adverse effects that stopped treatment</td>
<td>Increased in 1 (n = 70) of 5 trials (n = 523)</td>
<td>No difference in 5 of 5 trials (n = 196)</td>
<td>No difference in 4 of 4 trials (n = 823)</td>
</tr>
</tbody>
</table>

**Commentary**
Despite decades of using anticholinergic drugs for UI, few well-designed, controlled trials support the efficacy of these drugs. Haeusler and colleagues identified double-blind trials that were published up to October 2000. Only 8 of 36 studies enrolled > 100 patients, and outcomes were mostly based on subjective reports by patients rather than urodynamic results. Trials of nonpharmacologic therapies (1) that incorporated independent drug-placebo comparison arms that might have been included were not. 3 studies quoted by the U.S. Public Health Service results. Trials of nonpharmacologic therapies (1) that incorporated double-blind trials that were published up to October 2000 and may have side effects.

With a high frequency of UI in whom delirium associated with anticholinergic agents is a major adverse effect.

An effective, safe, pharmacologic solution for incontinence continues to escape us, but clinicians can at least rely on easily implemented guidelines for diagnostic stratification (2, 3) and assist patients with treatment decisions, which may include a trial of medication.

**References**