Antimuscarinic drugs for urinary incontinence in women

There is no strong evidence of a clinically important difference in efficacy between antimuscarinic drugs. The choice of antimuscarinic drug for an individual woman is likely to depend on tolerability, patient preference, and cost.

Overview: Urinary incontinence (UI) is a common condition that can affect women of all ages. It may seriously influence a woman's physical, psychological and social wellbeing and can cause significant lifestyle restrictions. Urinary incontinence may be classified as urge UI, stress UI, or mixed (urge and stress) UI. Overactive bladder syndrome (OAB) is urgency that occurs with or without urge UI and usually with frequency and nocturia.

Treatment of UI and OAB may include lifestyle interventions (for example, fluid modification), physical therapies (e.g. pelvic floor muscle training), bladder training and drug therapies (for example, antimuscarinic drugs). NICE guidance on urinary incontinence concluded that there was no evidence of a clinically important difference in efficacy between antimuscarinic drugs. Immediate release generic oxybutynin is the most cost effective of the available options.

Current advice: In women with OAB or mixed UI (that is, symptoms of urgency), NICE recommends offering immediate release generic oxybutynin as first-line drug treatment, if bladder training has been ineffective. If this is not well tolerated, darifenacin, solifenacin, tolterodine, trospium, or an extended release or transdermal formulation of oxybutynin should be considered as alternatives. Other drugs may be an option in specific circumstances - see the NICE clinical guideline on urinary incontinence for more information.

New evidence: A systematic review of 94 randomised controlled trials compared the risks and benefits of five antimuscarinic drugs used to treat adults (>80% were women) with urgency, manifest as urge UI, mixed UI, or OAB (Shamliyan et al. 2012). The review focused on patient-oriented outcomes, for example, continence, clinically important improvement in UI (defined as a 50% reduction in UI frequency) and adverse effects.

All drugs were more effective than placebo in achieving continence and improving UI, although the size of the effect was small. Pooled analyses of 15,842 participants with urgency showed that, on average, for every 1000 adults treated, continence was achieved in 130 with fesoterodine, 85 with tolterodine, 114 with oxybutynin, 107 with solifenacin and 114 with trospium. Overall, treatment discontinuation due to adverse effects was more frequent with antimuscarinic drugs, compared with placebo. There were insufficient data from head-to-head trials of antimuscarinic drugs to make any reliable conclusions on comparative effectiveness.

Although all antimuscarinic drugs appeared to be similarly effective, the size of the effect was small; the absolute risk difference in continence was less than 20% for all antimuscarinic drugs compared to placebo. There was insufficient evidence to determine whether any particular sub-group of women would benefit more from drug treatment. Furthermore, the benefits and risks of longer term treatment...
are not known as studies lasted for 2–3 months only. Analysis was also hampered by inconsistent definitions and reporting of UI.

This new study does not suggest any reason to depart from current NICE guidance. There is no strong evidence of a clinically important difference in efficacy between antimuscarinic drugs. The choice of antimuscarinic drug for an individual woman is likely to depend on tolerability, patient preference and cost. Generic immediate release oxybutynin is the most cost effective option and is recommended as the first-choice drug treatment. If this is not well tolerated, other antimuscarinic drugs or oxybutynin formulations can be considered on an individual patient basis.

**Commentary:** "Whilst this systematic review provides interesting information, such data have to be interpreted with caution as different studies have very different inclusion and exclusion criteria. If patients with more severe symptoms and greater propensity to UI are included, a more significant effect is likely to be seen. The only effective way of contrasting different drugs is to do a head-to-head comparative study.

"The authors conclude that overall, drugs for urgency UI show similar small benefit. However, urgency UI is just part of the spectrum seen with OAB. Other parameters to consider include frequency, nocturia and volume voided. Without considering all the components, a very skewed impression of these data will potentially be obtained.

"Another objective the authors had was to analyse the characteristics of patients and long-term adherence to drug treatment. Whilst this is very valid and important, caution has to be used in interpreting these results. It is difficult to draw definitive conclusions reviewing RCTs where selection bias will influence the conclusions that can be drawn. The only definitive evidence can be obtained from studies of real life clinical practice, which are sadly lacking in the literature at present.

"The authors are to be congratulated on an extensive body of work, which very ably contrasts the different studies, but which needs to be interpreted in the context of the limitations of the data being evaluated." - Professor Christopher Chapple, Consultant Urological Surgeon, Royal Hallamshire Hospital Honorary Senior Lecturer of Urology, University of Sheffield, Visiting Professor of Urology, Sheffield Hallam University.

---

**About this article:** This article appeared in the June 2012 issue of the Eyes on Evidence newsletter. This free monthly newsletter from NICE Evidence outlines interesting new evidence and what it means for current practice. They do not constitute formal NICE guidance. The opinions of contributors do not necessarily reflect the views of NICE.

To receive the Eyes on Evidence e-bulletin, please complete the online registration form.

---

Visit Evidence Search

Copyright © 2012 National Institute for Health and Care Excellence. All Rights Reserved.