

Hormone replacement therapy did not reduce the number of episodes of urinary incontinence

Fantl JA, Bump RC, Robinson D, McClish DK, Wyman JF, and the Continence Program for Women Research Group. **Efficacy of estrogen supplementation in the treatment of urinary incontinence.** *Obstet Gynecol.* 1996 Nov;88:745-9.

Objective

To determine whether hormone replacement therapy (HRT) (estrogen and progestin) reduces urine loss and the number of episodes of incontinence in postmenopausal women.

Design

Randomised, double-blind, placebo-controlled trial with 3-month follow-up.

Setting

2 university medical centres in the United States.

Patients

83 women who reported urinary incontinence (involuntary loss of urine at least once/wk) and who were ambulatory, living in the community, and older than 45 years of age (mean

age 67 y, 93% white) were studied. Exclusion criteria were permanent catheterisation, impaired mental status, functional disability that limited the use of the toilet, neuropathic or uncontrolled metabolic conditions, chronic urinary tract infection, reversible causes of urinary incontinence, or major contraindications for the use of estrogen. Follow-up was 98%.

Intervention

39 women were assigned to HRT (conjugated equine estrogens, 0.625 mg/d for 30 d/cycle, and medroxyprogesterone, 10 mg for 10 d/cycle), and 44 women were assigned to placebo.

Main outcome measures

The main outcome was number of incontinent episodes per week. Secondary outcomes were amount of fluid loss measured by a standardised pad test and number of voluntary diurnal and nocturnal micturitions per week. Health-related quality-of-life scores were collected using several instruments, including the Incontinence Impact Questionnaire—Revised and the Urogenital Distress Inventory.

Main results

The study had $\geq 80\%$ power to detect differences of 4.5 incontinent episodes per week. At 3 months, the groups did not differ for perceived improvement in incontinence (45% of women in the placebo group reported improvements vs 54% in the treatment group, $P = 0.44$); number of incontinent episodes per week (13 vs 10, $P = 0.99$); fluid loss (50 vs 101 g, $P = 0.78$); number of diurnal voluntary micturitions per week (49 vs 50, $P = 0.48$); number of nocturnal voluntary micturitions per week (8 vs 9, $P = 0.29$); and scores on the Incontinence Impact Questionnaire ($P = 0.98$) and the Urogenital Distress Inventory ($P = 0.71$).

Conclusion

Hormone replacement therapy did not reduce the number of weekly episodes of urinary incontinence or amount of urine loss in postmenopausal women.

Sources of funding: National Institutes of Health; Wyeth-Ayerst; Upjohn.

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Commentary

This trial by Fantl and colleagues is an important investigation of the effect of hormones on the lower urinary tract. The identification of estrogen receptors in the lower urinary tract (1-3) has prompted many authors to hypothesise that estrogen is an important factor in ensuring urinary continence. A well-designed, randomised trial on this topic has not been reported. The main outcome measure in this well-conceived study (mean number of incontinence episodes/wk) and the secondary outcomes (mean fluid loss and number of voluntary micturitions/wk) are clinically relevant end points.

The experimental manoeuvre was the administration of a combination of estrogen and progestins for women with urinary incontinence. As acknowledged by the authors, the "use of concomitant progestin therapy could account for some of the observed lack of response."

Although the randomisation process was sound, various incontinence conditions were evaluated. The interaction analysis indicated that urodynamic diagnosis did not influence the overall results, but this analysis did not have enough power, as the authors note. Because patients with stress, urge, and various types of incontinence were treated, a possible benefit for just 1 subgroup could have been missed. Similarly, a large baseline difference in the initial fluid loss was found between the groups (116 g in the treatment group vs 63 g in the control group). If the volume of urine loss is an index of the severity of incontinence, a difference may have existed at baseline between the groups.

The results of the study challenge our understanding of the effect of HRT on the restoration of urinary continence. The heterogeneity of the study groups

and the baseline differences between the groups may not be critical, but we need further studies that are sufficiently powered to evaluate HRT for each diagnosis of incontinence. In addition, the value of local estrogen therapy should be addressed before such a simple therapy is abandoned in the treatment of women with postmenopausal urinary incontinence.

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References

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