

## ASSOCIATIONS BETWEEN TYPE AND ROUTE OF HORMONE USE ON URINARY INCONTINENCE AND PELVIC ORGAN PROLAPSE IN PRE- AND POST-MENOPAUSAL WOMEN.

### Hypothesis / aims of study

The objective of this study was to evaluate associations between type and route of hormone use and symptoms of urinary incontinence (UI) and pelvic organ prolapse (POP) in pre- and post-menopausal women.

### Study design, materials and methods

Analyzed data from the National Health and Nutritional Examination Survey (NHANES) from 2005-2006, 2007-2008, 2009-2010, and 2011-2012. 9803 women of age 13 and older were included; 4899 were pre-menopausal and 4904 were post-menopausal. Pre-menopausal women were less than 51 years old who reported menstrual periods in the last twelve months. Post-menopausal women either reported being in natural menopause or surgical menopause. Urinary incontinence (UI) was defined as experiencing urinary leakage "less than once a month" or more. Pelvic organ prolapse (POP) was defined as an affirmative response to "experience bulging in the vaginal area". Hormone route and use was stratified by estrogen exposure, oral birth control use (years), estrogen only pill use (years), progestin only pill use (years), estrogen/progestin pill use (years), estrogen only patch use (years), and estrogen/progestin patch use (years). Relationships among the variables were assessed using Pearson correlations. Probabilities less than 0.05 were considered significant.

### Results

In premenopausal women, estrogen exposure, oral birth control use, and estrogen only patch use were associated with UI ( $p < 0.05$ ). Estrogen exposure was also associated with POP ( $p = 0.00$ ) in pre-menopausal women. In pre-menopausal women, estrogen only pill, progestin only pill, and estrogen/progestin patch use were not associated with UI and/or POP. In post-menopausal women, estrogen exposure, estrogen only pills, and estrogen/progestin pill use were associated with UI ( $p < 0.05$ ). Oral birth control use was associated with POP ( $p = 0.014$ ), but not UI, in post-menopausal women. Neither estrogen patch nor estrogen/progestin patch are associated with UI or POP in post-menopausal women.

### Interpretation of results

Type and route of hormone use has varied associations with UI and POP in pre- and post-menopausal women. Depending on the form, oral estrogen is associated with UI and POP in pre- and post-menopausal women, however, oral progestin only pills are not. Hormone patches are not associated with either UI or POP in post-menopausal women.

### Concluding message

Prospective, controlled studies are needed to further evaluate the effect of hormone type and route on UI and POP in pre- and post-menopausal women.

### Disclosures

**Funding:** None. **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** University of Arizona IRB committee **Helsinki:** Yes **Informed Consent:** Yes