

## **P345. Effectiveness of the moderately supportive underwear in women with stress urinary incontinence, Part 1: Is the bladder neck elevated due to wearing the underwear?**

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**Context:** In a previous single-arm pilot study, the effectiveness of the support power of underwear to elevate the bladder neck and reduce symptoms of stress urinary incontinence (SUI) in women was reported<sup>1</sup>). A moderately supportive underwear with an effective structure to elevate the bladder neck has been newly developed.

**Objective:** The aim of this study was to verify the effectiveness of moderately supportive underwear to elevate the bladder neck.

**Methods:** This was a comparative study of 3 types of underwear as follows: normal underwear for women (stock number; PPB401, "A"), moderately supportive, boy-length underwear with support from the pubis to the coccygeal (patent pending, No. PCT/JP2017/027161, "B"), and the supportive, long-length underwear used in the previous study<sup>1</sup>) (SLIM-up-Pant, stock number; EQ0832, "C"). Underwear "B" was developed based on a previous study<sup>2</sup>) that examined the mechanism to elevate the bladder neck comparing several underwear. All underwear were created by Wacoal Corporation, Kyoto, Japan. The wearing pressures of each underwear were as follows; "A": 1.9 kPa (mean; range, 0.0–7.5), "B": 5.4 kPa (1.0–11.0), "C": 9.9 kPa (3.0–20.5). The wearing pressures were measured at the following 6 points in 8 women: the abdomen, subpubic, ischium, gluteal sulcus, buttock, and greater trochanter.

**Participants:** The participants included 18 parous women with SUI (age, 30–59 years; hip measurement, 84–105 cm) that were recruited by a recruitment agency. This study conformed to the provisions of the Declaration of Helsinki.

**Interventions:** The bladder neck positions while wearing each underwear were compared to the bladder neck position without underwear.

**Main Outcome Measures:** Bladder neck position at rest was measured using magnetic resonance (MR) images in a sitting posture acquired by an open-configuration MR system, GE SIGNA SP/2. The distance from the pubococcygeal line to the bladder neck was measured to determine the bladder neck position<sup>3</sup>).

**Results:** Bladder neck positions were elevated by 4.7 mm (median; 95% confidence interval, 2.9–6.4) by wearing underwear "A", 7.1 mm (5.3–9.2) by wearing "B", and 13.9 mm (12.1–15.7) by wearing "C", compared to those without underwear. Wearing underwear "B" or "C" elevated the bladder neck in all women, but the bladder neck in 1 woman descended by wearing "A".

**Conclusions:** The developed moderately supportive underwear was more effective to elevate the bladder neck than normal underwear.

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