pressure variation. Statistical analysis was by paired Student's t-test and analysis of variance.
Results: Of 314 provocative manoeuvres, 92(29%) produced leak in 21(42%) patients. Pressures were significantly higher with C in 41(82%) patients and 270(86%) manoeuvres. Leak was demonstrated in 21 of 26(81%) patients complaining of SUI; 19(90%) by C, 14(67%) by V and 11(52%) by both. Failure to perform both manoeuvres or to repeat manoeuvres would have missed SUI in 8(38%) and 3(14%) patients respectively. In 16 patients with type 3 SUI, C underestimated the severity of outlet incompetence in 13(81%). In 5 patients with type 2 SUI, V failed to produce leak in 4(80%). Pressure variation was similar for both manoeuvres, although V pressure had a greater tendency to decline with repetition (21% vs 7%; p = 0.02).

PARAMETER	COUGH	VALSALVA	P value
Mean ALPP (standard error)	105.4 (6.9)	64.5 (3.9)	0.009
Variability - % patients	58	64	0.09
Sensitivity - % manoeuvres	89.1	65.8	0.03
Specificity - % manoeuvres	50.9	66.3	0.04

Conclusions: For objectively demonstrating SUI, C is superior to V. V underdiagnoses type 2 SUI and C underdiagnoses type 3. The results support the use of both manoeuvres to quantify ALPP and the use of repetitive manoeuvres further enhances diagnosis.

75

Author(s): H Siltberg*, A Victor# and G Larsson*

Institution, city, country:
*Department of Women's and Children's Health, Section for Obstetrics and Gynecology, University Hospital and #Medical Products Agency, Uppsala, Swede

Title (type in CAPITAL LETTERS, leave one blank line before the text):

FAVORABLE DIAGNOSTIC PROPERTIES OF COUGH-INDUCED LEAK POINT PRESSURE COMPARED WITH VALSALVA LEAK POINT PRESSURE

Background: Methods to measure abdominal leak point pressure vary with respect to mode of provocation, method used to detect leakage, and amount of bladder filling. Altering one or more of these factors might influence the sensitivity of the test as well as its ability to differentiate between patients and healthy subjects.

Aim: The aims were 1) to investigate whether bladder volume affects the detection rate of incontinence (sensitivity) or the level of leak point pressure when the Cough Induced Leak Point Pressure measurement method (CILPP)—based on coughs for provocation and urethral electrical conductivity to detect leakage—is used; 2) to study if the method has the ability to differentiate between patients with a history of stress incontinence and controls without such a history and 3) to compare these findings regarding CILPP with the corresponding findings for Valsalva Leak Point Pressure (VLPP).

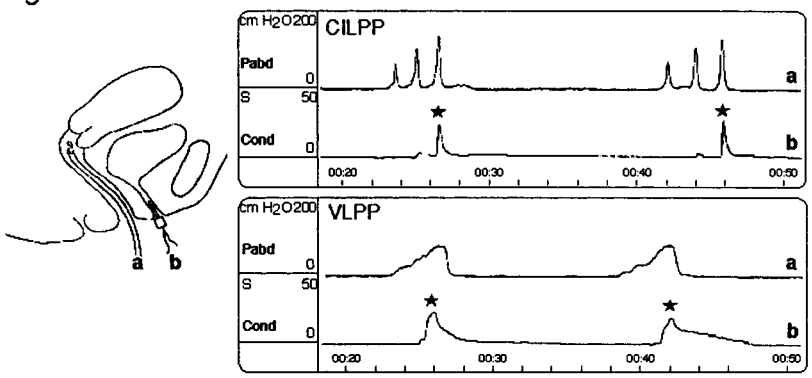
Material and Methods: The study was an open, randomized, controlled clinical trial of cough induced and Valsalva leak point pressure measurements at different bladder volumes where 40 female patients with a history of stress incontinence and 11 women without current complaints of stress incontinence were included.

Leak point pressure measurements were performed at two different bladder volumes: first at 200 ml and then at 90% of the largest single voided volume as determined from the frequency/volume chart, or at 90% of maximum cystometric capacity, whichever was reached first. Mean volume at 90% of capacity was 451 ml (range 225-810 ml). The order of testing, i.e. whether the testing started with cough provocation or Valsalva maneuver, was randomized. For the individual subject, the order of testing was the same at both volumes.

Urinary leakage was detected by measuring distal urethral electrical conductance (DUEC) with a 7F Silastic probe placed in the urethra (UEC-meter). The increase in abdominal pressure above the baseline value during provocation was recorded using a microtip catheter placed in the fornix of the vagina (Figure 1).

To determine CILPP, subjects were asked to cough with gradually increasing exertion until leakage was detected. To determine the Valsalva leak point pressure, subjects were asked to bear down—as if trying to push something out of the vagina—until leakage was detected by the UEC-meter.

Figure 1



The practical set-up to determine CILPP and VLPP with the microtip catheter (a) placed in the vagina and the UEC-meter (b) in the urethra. Below are copies of leakage (★) and pressure recordings. Note the stepwise increase in cough strength. CILPP was defined as the mean of the lowest single pressure that produced leakage and the highest single pressure recorded without concomitant leakage. The lowest pressure producing leakage in a series of three Valsalva maneuvers defined the VLPP.

Results: CILPP verified leakage in 37/40 and 38/39 patients at 200 ml and at 90% of maximum bladder capacity, respectively. The corresponding figures for VLPP were 29/40 and 37/39. Thus at 200 ml, the *sensitivity* of CILPP was significantly higher than the sensitivity of VLPP.

At 200 ml, the *specificity* of CILPP was 0.73 (8/11) and the overall accuracy 0.88 (45/51). The corresponding figures for VLPP were 0.82 (9/11) and 0.75 (38/51). Increasing bladder volume to 90% of maximum capacity did not alter the specificity of either measure. Raising the volume did, however, increase the overall accuracy of both CILPP and VLPP to 0.92.

Mean *pressure levels* at leakage for CILPP were significantly lower at 90% of maximum bladder capacity than at 200 ml: 90.7 cm H_2O compared with 103.2 cm H_2O (p=0.0085). VLPP levels were significantly lower than mean CILPP levels at corresponding volumes, but there was no statistically significant difference between VLPP levels at 200 ml and 90% of bladder capacity: 72.5 cm H_2O and 68.6 cm H_2O respectively.

Conclusion: The sensitivity of CILPP is high over a wide range of bladder volumes whereas VLPP requires a large bladder volume to attain an acceptable detection rate. The specificity of CILPP and VLPP allows differentiation between patients with stress incontinence and controls.

76A

Author(s):
C.Pajoncini, E.Costantini, W.Rociola, S.Biscotto, V.Bini*, F.Guercini and M.Porena

Institution, city, country:
Dept. of Urology, *Dept. of Pediatric Science, Perugia University, Italy

Title (type in CAPITAL LETTERS, leave one blank line before the text):
CLINICAL AND URODYNAMIC PATTERNS OF INTRINSIC SPHINCTER DEFICIENCY

Aims of the study

Patients with severe Genuine Stress Incontinence (GSI), a fixed urethra and no hypermobility, are ideal candidates for studying Intrinsic Sphincter Deficiency (ISD) as opposed to anatomic incontinence. We analyzed clinical data (age, previous uro-gynaecological surgery and/or hysterectomy, stress test, irritative symptoms and perineal testig) and urodynamic parameters (Valsava leak point pressure - VLPP, Maximum Urethral closure pressure - MUCP, the urethral functional length), in a group of patients with severe GSI and poor urethral mobility (pure ISD) and with moderate GSI and urethral hypermobility (pure anatomic GSI) in an attempt to identify specific ISD patterns (1-2-3),