

ANALYSIS OF THE COUGH STRESS TEST AND MULTICHANNEL URODYNAMICS FOR THE DIAGNOSIS OF STRESS URINARY INCONTINENCE IN WOMEN

Hypothesis / aims of study

The aim of this study was to determine the predictive value of the cough stress test (CST) for the diagnosis of stress urinary incontinence (SUI) in women during the evaluation of lower urinary tract symptoms in three scenarios: (i) initial evaluation upon consultation, in the absence of significant pelvic organ prolapse (POP), (ii) initial evaluation upon consultation, in the presence of significant POP, and (iii) after continence surgery.

Study design, materials and methods

Retrospective chart review of 297 consecutive female patients who were evaluated at a tertiary Urogynecology unit for pelvic floor dysfunction. Subjects were divided into three groups: (i) 100 without significant POP undergoing initial evaluation (group "IE"), (ii) 100 with significant POP undergoing initial evaluation (group "IE-P"), and (iii) 97 undergoing routine 1 year postoperative follow-up after continence surgery (with or without POP surgery) (group "Post-Op"). Group IE-P had POP at or beyond the hymenal ring. The CST was performed with a comfortably full bladder, in the lying and standing positions, by a staff urogynecologist. Prolapse was reduced during testing for SUI. The CST was compared to multichannel urodynamic studies (UDS), which was considered to be the gold standard diagnostic test for SUI. UDS was performed by a specially trained nurse. The CST was compared to UDS using calculations of sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and Kappa correlation coefficient. The analysis was repeated using UDS as the test under study and CST as the gold standard. Approval was granted by the local Research Ethics Board.

Results

SUI was diagnosed by UDS in 37%, 36%, and 27% of each of the groups of IE, IE-P, and Post-Op, respectively.

For group IE, sensitivity, specificity, PPV, NPV, and Kappa for the CST (comparing to UDS as the gold standard) were 67%, 59%, 63%, 59%, and 0.26, respectively. For group IE-P, these values were 71%, 49%, 63%, 59%, and 0.2, respectively. For group Post-Op, these values were 31%, 93%, 73%, 70%, 0.27, respectively.

When the analysis was reversed, using UDS as the test under study and CST as the gold standard, sensitivity for diagnosis of SUI in the groups IE, IE-P and Post-Op was 63%, 53%, and 73%, respectively.

Table 1: Sensitivities for the diagnosis of SUI by CST and UDS

Group	CST (UDS as gold standard)	UDS (CST as gold standard)
IE	67%	63%
IE-P	71%	53%
Post-Op	31%	73%

Interpretation of results

The CST has only an intermediate sensitivity and NPV for the diagnosis of SUI in women when compared to UDS. UDS also has poor sensitivity if CST is considered the gold standard. CST is superior in the presence of POP, possibly due to a greater ability to manually reduce the prolapse. UDS is superior as a postoperative test, possibly due to lack of observer bias by the urodynamics nurse.

Concluding message

With the current state of knowledge, both CST and UDS should be included in the evaluation of patients with lower urinary tract symptoms and/or POP. There is not a definitive gold standard diagnostic test for SUI.