

CAN WE SAFELY LIMIT THE USE OF INVASIVE URODYNAMICS IN THE PREOPERATIVE EVALUATION OF STRESS URINARY INCONTINENCE IN WOMEN?

Hypothesis / aims of study:

The aim of this study was to determine whether non- invasive clinical criteria compiled within guidelines could substitute for invasive urodynamic testing preoperatively in women presenting with the complaint of stress urinary incontinence (SUI).

Study design, materials and methods:

Following approval from the Institutional Review Board, a retrospective chart review of all urodynamic studies performed at our institution between 2001 and 2005 was completed. Patient demographics and clinical data were collected from the institution's Integrated Clinical Data Base (ICDB) computerized outpatient medical record. Urodynamic data was collected from the urodynamic equipment utilized in the Division of Female Pelvic Medicine and Reconstructive Surgery (Duet Multi-P, Medtronic Corporation, Minneapolis, Minnesota). All charts documenting a chief complaint of SUI were eligible for inclusion in the study. These patient records were then evaluated for adequacy of data utilizing data collection sheets. Any record in which the chief complaint did not involve SUI or which did not contain the complete set of criteria listed in Table I. was not included in the study.

Three sets of clinical criteria based on the Agency for Health Care Policy and Research (AHCPR) guidelines were utilized. The first set was consistent with the AHCPR guidelines. These guidelines were altered to create two further guidelines. In the *Substituted* guidelines, a simple uroflow replaced the voiding diary. In the *Modified* guidelines, a simple uroflow was added to the AHCPR guidelines. All charts were evaluated according to the three guidelines, and these were compared to the urodynamic diagnoses. Urodynamic diagnoses were categorized as SUI with hypermobility, Intrinsic Sphincter Deficiency (ISD), Urge Urinary Incontinence, Mixed Incontinence (MUI), and Normal Study.

Table I. Study Criteria.

AHCPR Guidelines	
1.	Urine loss with exertion (by patient history and a positive cough stress test).
2.	Normal voiding habits (8 episodes per day or less, 2 episodes per night or less).
3.	No abnormal neurological history or physical examination findings.
4.	No history of anti-incontinence or radical pelvic surgery.
5.	Positive hypermobile urethrovesical junction (≥ 30 degrees).
6.	Normal post-void residual (< 100 mL).
7.	Not pregnant.
Substituted Guidelines	
1.	Urine loss with exertion (by patient history and a positive cough stress test).
2.	Normal voiding habits (8 episodes per day or less, 2 episodes per night or less).
3.	No abnormal neurological history or physical examination findings.
4.	No history of anti-incontinence or radical pelvic surgery.
5.	Positive hypermobile urethrovesical junction (≥ 30 degrees).
6.	Normal post-void residual (< 100 mL).
7.	Not pregnant.
8.	Average Uroflow (≥ 8 mL/sec)
Modified Guidelines	
1.	Urine loss with exertion (by patient history and a positive cough stress test).
2.	Normal voiding habits (8 episodes per day or less, 2 episodes per night or less).
3.	No abnormal neurological history or physical examination findings.
4.	No history of anti-incontinence or radical pelvic surgery.
5.	Positive hypermobile urethrovesical junction (≥ 30 degrees).
6.	Normal post-void residual (< 100 mL).
7.	Not pregnant.
8.	Average Uroflow (≥ 8 mL/sec)

Results:

Of the 822 urodynamic studies performed, 132 charts met inclusion criteria. Thirty eight percent (50/132) met AHCPR guidelines, 36% (46/132) met the *Substituted* guidelines and 24% (37/132) met the *Modified* guidelines. The sensitivities in diagnosing SUI with hypermobility ranged from 44 to 59%. More importantly the specificities of the

AHCPR, *Substituted* and *Modified* guidelines were 88%(95%CI: 77%-95%), 83% (95%CI: 71%-94%), and 92%(95% CI: 81%-97%) respectively. The *Modified* guidelines also had the highest positive predictive value of 89%. Of the 5 patients who met criteria for the *Modified* guidelines but for which the diagnosis of SUI with hypermobility was not confirmed on invasive urodynamics, three were diagnosed with intrinsic sphincter deficiency, and one was diagnosed with stress predominant mixed incontinence.

Interpretation of results:

The AHCPR guidelines have a reasonable specificity in the diagnosis of SUI with hypermobility. Adding a simple uroflow to these guidelines in the preoperative evaluation increases the diagnostic accuracy. With the present utilization of mid urethral slings for both ISD and SUI with hypermobility, only one of 132 patients may have been inappropriately treated with surgery utilizing the *Modified* guidelines.

Concluding message:

In 98% of patients fulfilling the criteria within the *Modified* guidelines, invasive urodynamics would not have changed the surgical management. This finding, if confirmed in prospective trials, may obviate the need for invasive urodynamics in up to 25% of female patients presenting with a primary complaint of SUI.

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DISCLOSURES: NONE

HUMAN SUBJECTS: This study was approved by the Walter Reed Army Medical Center Investigational Review Board and followed the Declaration of Helsinki Informed consent was not obtained from the patients.