TABLE 1

Study	Efficacy variable	Standardized effect
FES	DAI	0.78
	Frequency/6-hours	0.09
	Loss/hour	0.21
	Mean volume/micturition	0.49
Tolterodine	Incontinence episodes/week	0.23
	Frequency/24-hours	0.16
	Mean volume/micturition	0.34
	Number of pads/24-hours	0.19

Conclusions

This study can be seen as a contribution to the construct validity of ambulatory urodynamics and the Detrusor Activity Index for research purposes. The results also indicate that for overactive bladder assessment, the DAI is a relatively strong instrument for efficacy measurements compared to conventionally applied outcome variables.

References:

1. Neurourol Urodyn, vol. 19, 2000: p. 113-125
2. BJU, vol. 83, Suppl. 2, 1999: p. 16-21
3. Clin-Drug-Invest, vol. 19, 2000: p. 83-91
4. Foundations of clinical research,Appleton & Lange, Norwich, Connecticut 1993: p. 653

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

CAN ULTRASOUND REPLACE AMBULATORY URODYNAMICS WHEN INVESTIGATING DETRUSOR INSTABILITY?

Aims of Study. Urodynamics remain the standard diagnostic technique when assessing women with lower urinary tract symptoms. Laboratory urodynamics has been shown to be less sensitive than ambulatory studies[1] at detecting detrusor instability. However since ambulatory studies are labour intensive and time consuming they remain a second line investigation for those women with symptoms that are not explained by laboratory urodynamics. The use of ultrasound assessment of bladder wall thickness has previously been described as a sensitive screening method for diagnosing detrusor instability in symptomatic women without outflow obstruction[2]. It has been postulated that women with detrusor instability develop detrusor hypertrophy secondary to repeated isometric contractions against a closed bladder neck. We have investigated the possibility that ultrasound assessment of bladder wall thickness in women with equivocal laboratory urodynamics would replace the need to perform an ambulatory study.

Methods.A prospective study was performed of women with equivocal laboratory urodynamic findings who were booked to undergo an ambulatory study. In all women ultrasound assessment of bladder wall thickness was undertaken prior to ambulatory urodynamics to avoid bias. A transvaginal ultrasound scan was performed using a 7.5 mHz probe in the supine position with an empty bladder. The bladder wall thickness was measured in three places; in a plane perpendicular to the luminal surface of the bladder at the thickest part of the trigone, at the dome of the bladder, and at the anterior wall. All measurements were made at maximal magnification. Ambulatory urodynamics were then performed using a single, solid state 7F Gaeltec microtransducer with two pressure transducers in the bladder and a separate solid state transducer in the rectum. The test lasted four hours and the women were asked to drink 200 mls of fluid every 30 minutes and to keep a diary of events and symptoms. The results were analysed using a personal computer and detrusor instability was only diagnosed if a detrusor pressure rise was recorded in association with urgency or urge incontinence. Mean bladder wall thickness and 95% confidence intervals were analysed.

Results.121 women were recruited to the study. Ambulatory diagnosis and mean bladder wall thickness are shown below with the 95% confidence intervals. **(Table 1).** Only one subject was found to have voiding difficulties and was therefore excluded from further analysis. Examination of the 95% confidence limits reveals no overlap in the groups

Ambulatory Diagnosis (*Diagnostic Group Code*).	n.	Mean (cm)	95% Confidence Intervals	
			Lower	Upper
Normal *(1.00)*	34	0.51	0.46	0.57
Genuine Stress Incontinence *(2.00)*	38	0.49	0.44	0.54
Detrusor Instability. *(3.00)*	19	0.61	0.55	0.66
Voiding Difficulties. *(4.00)*	1	-	-	-
Detrusor Instability and Urethral Sphincter Incompetence. *(7.00)*	25	0.55	0.48	0.63

representing genuine stress incontinence and detrusor instability indicating that a cut-off of 0.55 cm would be clinically significant for diagnostic purposes **(Figure 1)**.

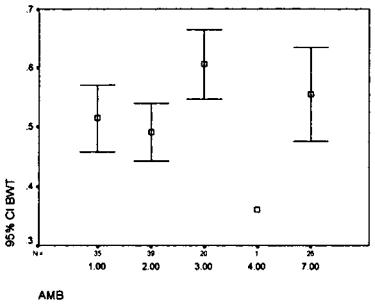

Figure 1. Bladder Wall Thickness; 95% Confidence Intervals. (Key as Table 1).

Conclusion.

Mean bladder wall thickness measured using transvaginal ultrasound appears to be a sensitive method of detecting detrusor instability. In women, who on laboratory urodynamics, have no evidence of sphincter incompetence a cut-off of 0.55 cm is diagnostic of detrusor instability. However, if the laboratory study demonstrates sphincter incompetence then the ability of bladder wall thickness to discriminate between detrusor instability and genuine stress incontinence is lost. This may be explained by the fact that in order for the detrusor to become hypertrophied there must be repeated isometric contractions against a closed, competent sphincter. This study demonstrates that in women with no evidence of sphincter incompetence, and in whom there is no suggestion of voiding difficulties ultrasound assessment of bladder wall thickness can replace ambulatory urodynamics. However, in cases of mixed incontinence, ambulatory urodynamics still has a diagnostic role. If adopted in clinical practice this would represent considerable savings in time and cost.

[1] Extramural ambulatory urodynamic monitoring during natural filling and normal daily activities: evaluation of 100 patients. J Urol. 1991; 146: 124-131.
[2]Ultrasound: a non invasive screening test for detrusor instability. Br J Obstet Gynaecol. 1996; 103: 904-908.

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Title (type in CAPITAL LETTERS, leave one blank line before the text):
COUGH OR VALSALVA - WHICH IS BEST?

Aims of Study: To determine the most reliable method of demonstrating and quantifying stress urinary incontinence (SUI) by prospectively studying variations in abdominal leak point pressure (ALPP) and the objective demonstration of SUI as determined by cough or Valsalva manoeuvre.
Methods: 34 female and 16 male patients, mean age 55y., with urinary incontinence (16 SUI, 30 mixed/urge incontinence and 4 neuropathic bladders) underwent multichannel videourodynamic study (Urovision Janus; LifeTech Inc.). At 250 cc. fill volume, each patient generated 3 consecutive coughs (C) and Valsalva manoeuvres (V) at maximum effort. Abdominal pressure and ALPP were compared with regard to pressure generated, induction of urinary leak and