

## REPRODUCIBILITY OF BLADDER WALL THICKNESS SCAN-A PROSPECTIVE STUDY

### Hypothesis / aims of study

Evaluation of the interobserver variability is important when one is interested in the 'true' differences among observers reporting different values of the same quantity. The aim of this study was to analyze the interobserver variability in measuring bladder wall thickness by transvaginal ultrasound in the multicentre bladder ultrasound study (BUS) to assess reproducibility.

### Study design, materials and methods

Two observers independently carried out bladder wall thickness scanning on 35 women to assess the test-retest reproducibility of the technique at different points of time within four weeks of each other in the BUS study. Women underwent USS measurement of BWT at five sites: anterior wall, three measurements on the dome, the trigone of the bladder and the mean bladder wall thickness was calculated. Bland-Altman analysis was used to determine interobserver difference and reliability.

### Results

35 women who have consented to participate in the BUS study were included. All the images were compliant with our special operating procedures (SOP). The average difference between the two observers was small: 0.27mm (SD 1.13, 95%CI: 0.09). 29/35 (82.8%) of the differences between assessors were within two standard deviations of the mean difference without any obvious relationship between the difference and size of readings. Figure 1

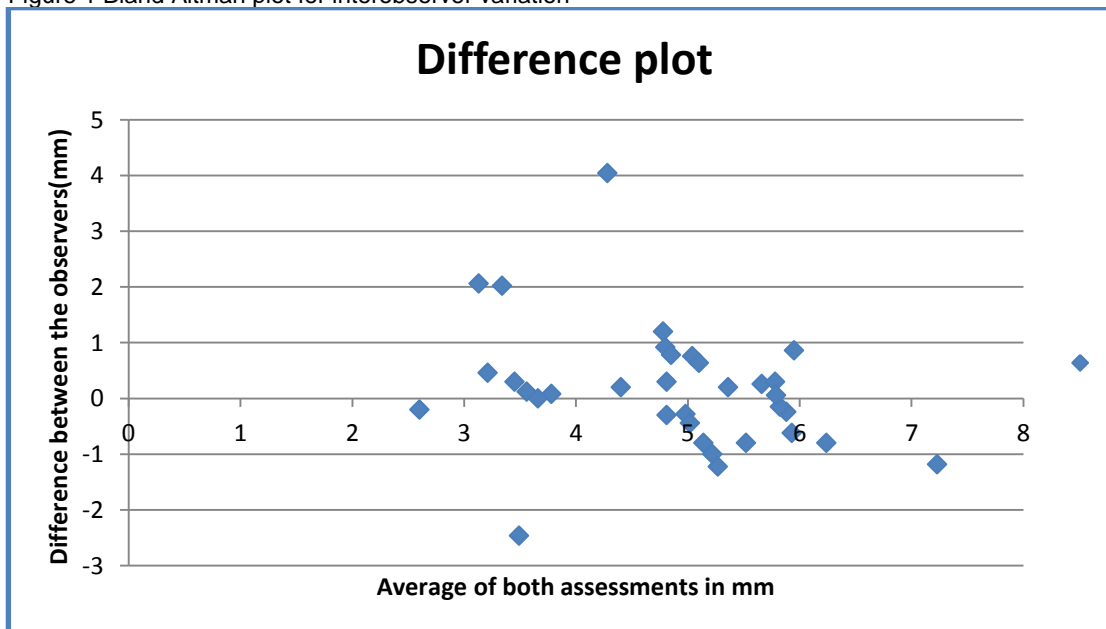
### Interpretation of results

The mean interobserver difference of the average bladder wall thickness in our study was only 0.298mm which is an acceptable level of agreement. The test-retest reliability by different observers performed at different points of time in our study validates the technique of transvaginal bladder wall thickness scanning.

### Concluding message

Transvaginal bladder wall thickness measurement had good interobserver repeatability and is therefore a valid technique for measuring bladder wall thickness

Figure 1 Bland Altman plot for interobserver variation



### References

1. Transvaginal ultrasound measurement of bladder wall thickness: a more reliable approach than transperineal and transabdominal approaches. Panayi D, Khullar V. *BJU Int* 106(10):1519-22 (2010),

### Disclosures

**Funding:** NIHR/HTA funded study on the Accuracy of bladder ultrasound (BUS): A study to evaluate if bladder ultrasound can reduce the need for urodynamics **Clinical Trial:** Yes **Registration Number:** Controlled Clinical trials register, CCT-NAPN-22283 **RCT:** No **Subjects:** HUMAN **Ethics Committee:** Nottingham Research Ethics Committee-2 **Helsinki:** Yes **Informed Consent:** Yes