Feasibility of continuous monitoring of the bladder volume by a new portable ultrasound bladder scanner, Lilium α-200

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Introduction

• Lilium α-200, a new portable ultrasound (US) bladder scanner, is capable of measuring bladder volume continuously through a small probe attached on the suprapubic region.
• No previous study has evaluated the accuracy of the data of its continuous measurements.
• We evaluated the correlation of the bladder volume periodically measured by Lilium α-200 with the instilled volume during video-urodynamic studies (V-UDS).

Materials and methods

• Bladder volume of adult patients was periodically measured by Lilium α-200 during V-UDS.
• A small US probe was placed on the suprapubic region to measure bladder volume every one minute.
• After the initial US measurement, post-void residual (PVR) urine was drained by a catheter.
• Filling cystometry (20 ml/min) in supine position was performed with US measurements.

Results

15 patients (14 men, 1 woman), median age 70 (18–84) were included.

Strong correlation between PVR volumes measured by drainage and by US (N =15) (R = 0.95, p<0.0001, Figure1)

No significant difference between mean PVR volume measured by drainage and by US (131.5±108.3 vs. 135.2±119.7 ml, p = 0.74)

Conclusion

Continuous measurement of bladder volume by Lilium α-200 is feasible within normal range of bladder capacity.