

Three-dimensional bladder ultrasonography with the BladderScan® overestimates post void residual after delivery

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Aim of study

Is the three-dimensional bladder ultrasonography (US, using the BVI 3000®, Verathon, WA, USA (BladderScan®) a reliable instrument for measurement of post void residual (PVR) in patients with postpartum urinary retention?

Methods



21 Women with a urinary retention >1000ml within 4-5 hours after delivery

- 17 indwelling urinary catheter for 1 week (protocol)
- 4 patients preferred earlier or later removal urinary catheter

Measurement of post void residual after micturation trial with:

- Bladderscan BVI 3000®
- Clean Intermittent Catheterisation (CIC)

Results

Clean Intermittent Catheterisation				
BladderScan®		≤ 200 ml	> 200 ml	Total
	≤ 200 ml	1	0	1
	> 200 ml	16	4	20
	Total	17	4	21

The average PVR difference between measurements with the BladderScan® and CIC was 285 ml ($p < 0.001$). With a cut-off point of 200 ml PVR volume, the sensitivity of the BladderScan® was 100% and the specificity was 5,9%. Positive predictive value was 20 %.

Conclusion

These results indicate that measurement of PVR volume one week postpartum using the BladderScan® is not a reliable method. In 81% of all cases, catheterisation was unnecessary.