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INTERMITTENT VERSUS INDWELLING CATHTERISATION FOR SYMPTOMATIC POSTPARTUM URINARY RETENTION: A RANDOMIZED CONTROLLED CLINICAL TRIAL.

Hypothesis / aims of study:
Overt postpartum urinary retention (PUR) is the inability to void spontaneously after delivery and affects up to 7% of patients postpartum.[1] While urinary retention can result in bladder overdistention and potentially long-term problems like reduced detrusor contractility, urinary tract infections and hydronephrosis, early recognition and catheterization is necessary.[2]
Clean intermittent (CIC) and transurethral indwelling catheterization (TIC) are both standard treatment options but have not been compared yet.[3] Clinical guidelines on postpartum bladder management are missing.
The aim of the study was to compare micturition symptoms three months after delivery between the two groups and duration of catheterization.

Study design, materials and methods
This randomized clinical trial (RCT) included 86 patients after vaginal delivery with symptomatic PUR (no spontaneous voiding within 6 hours after giving birth) who were allocated to CIC and TIC in five teaching hospitals in the Netherlands. In total data of 68 patients (n=34 in both groups) were used for the final analysis. In the TIC group, patients received an indwelling catheter for 24 hours. In case adequate voiding was not possible, a second indwelling catheter was inserted for another 48 hours. Patients allocated for CIC were intermittently catheterized or taught to self-catheterize until adequate voiding with post void residual volume (PVRV) < 150 mL was achieved.
The primairy outcome was the presence of bothersome micturition symptoms as measured by the Dutch validated UDI-6 (Urogenital Distress Inventory) questionnaire three months after delivery. Secondary outcomes included duration of catheterization and patient experience.

Results
No statistical significant differences in micturition symptoms after 3 months were found between the two groups (Table 1). The median PVRV was 800 mL in CIC group compared to 625 mL in TIC group. 24% of the total group of patients had PVRV ≥ 1000 mL.
In patients with CIC, 65% of patients regained adequate bladder emptying within 24 hours: in
35%, only one single catheterization was necessary to regain adequate bladder emptying. After 4 times of CIC (mean duration 24 hours) this was 78%.In patients with TIC, 84% of patients were able to void adequately after 24 hours.(Table 2)
Duration of treatment was not related to the initial PVRV. Both treatments were well accepted by the included patients.

Concluding message
PUR is a condition with a mild character as it mostly resolves spontaneously. However, if catheterization is indicated, our trial results show that clean intermittent catheterization is preferred, as it results in faster normalization of bladder emptying as compared to an indwelling catheter for 24 hours. Voiding symptoms at 3 months after PUR are not affected by the catheterization regime.

Table 1 Results UDI-6 questionnaire 3 months postpartum

	CIC (n=34)		**TIC (n=34)**		
	Mean score	SD	Mean score	SD	*p*
UDI-6 total score	8.5	10.1	10.9	13.9	0.45
Irritative symptoms	9.4	13.3	11.3	17.6	0.64
Stress symptoms	9.9	15.8	11.9	19.2	0.66
Obstructive symptoms	6.3	10.1	9.5	19.5	0.43

CIC = clean intermittent catheterization
TIC = transurethral indwelling catheterization

Table 2 Resumption of adequate voiding after treatement

Time to resumption of adequate voiding	**TIC (n=44)**	**CIC (n=37)**
Within 24 hours postpartum	-	64,9% (n=24)
1 x CIC	-	*35,1% (n=13)*
2 x CIC	-	*21,6% (n=8)*
3 x CIC	-	*8,1% (n=3)*
At 24 hours postpartum [1]	84,1% (n=37)	78,4% (n=29)
At 48 hours postpartum [2]	86,4% (n=38)	94,6% (n=35)
At 72 hours postpartum [3]	97,7% (n=43)	-
After ≥ 72 hours postpartum [4]	100% (n=44)	100% (n=2)

CIC = clean intermittent catheterization

TIC = transurethral indwelling catheterization

[1] in case of CIC: 4 times

[2] in case of CIC: 5 - 8 times

[3] in case of CIC: 9 - 12 times

[4] 1 patient learned CIC after TIC. In 2 patients with CIC prolonged catheterisation was required.

References

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Disclosures

Funding: None **Clinical Trial:** Yes **Registration Number:** The study was approved by the medical ethical committee of the Academic Medical Centre in Amsterdam, the Netherlands (MEC AMC 10/187). Local approval was obtained in all participating centres. The trial was registered in the Dutch Trial Registry (NTR 2806). **RCT:** Yes **Subjects:** HUMAN **Ethics Committee:** The study was approved by the medical ethical committee of the Academic Medical Centre in Amsterdam, the Netherlands (MEC AMC 10/187). Local approval was obtained in all participating centres. **Helsinki:** Yes **Informed Consent:** Yes