

NINE-WEEK INTERMITTENT SELF-CATHETERIZATION USING DRY PRESERVATION TECHNIQUE: REVIEW OF PATIENT SATISFACTION AND OBJECTIVE FINDINGS.

Hypothesis / aims of study

The objective of this study was to evaluate patient satisfaction after 9 weeks of using a silicone catheter preserved in a dry condition for intermittent self-catheterization (CIC) compared to a silicone catheter preserved with the conventional method of soaking in antiseptic solution.

Study design, materials and methods

Twelve male patients and eight female patients at our medical institution without any skill movement disorder and who were adept in the technique of self-catheterization participated in the study. Their ages ranged from 72 to 85 (median, 77.5). During the daytime, the subjects washed the catheter thoroughly with tap water after each self-catheterization and then kept it in a dry container until the next use. After the last use of the catheter for the day, they washed it using a surfactant and dried it completely. After 9 consecutive weeks of catheter use with the dry preservation method, patient satisfaction was evaluated compared with the conventional method of soaking the catheter in antiseptic solution (0.025% benzalkonium chloride solution) when not being used. The satisfaction parameters included ease of catheter manipulation, portability, and overall satisfaction on a visual analogue scale of 0 (extremely satisfied) to 6 (extremely unsatisfied). Objective findings included urinary sediment, urinary culture, and catheter culture. Adverse events were also examined. A questionnaire was conducted to survey subjects' complaints and requests. Before the study, written consent was obtained from all subjects, and the study was approved by the institutional ethical committee.

Results

A) Patient satisfaction:

Except (4), the results are indicated in the order of conventional method → dry method.

1) Ease of catheter manipulation (median): 5 → 1 ($p < 0.001$)

2) Portability (median): 6 → 1 ($p < 0.001$)

3) Overall satisfaction (median): 5 → 1 ($p < 0.001$)

4) Comments from subjects: The dry preservation technique spared them the trouble of handling antiseptic solution and reduced the anxiety over contamination and leakage when carrying the solution. Subjects were able to complete self-catheterization more quickly. The dry preservation method eliminated anxiety about the antiseptic solution's possible biological toxicity to mucosa.

B) Objective findings:

The results are indicated in the order of before dry preservation → after 9-week use.

1) Red blood cell: $3.2 \pm 9.2/x400$ (median, 2) → 2.7 ± 3.5 (median, 2)

2) White blood cell: $21.1 \pm 3.5/x400$ (median, 15) → 16.7 ± 2.1 (median, 10) ($p < 0.001$)

3) Urinary culture (all samples $> 10^5$ cfu/mL): *E. coli* in four samples, *K. pneumoniae* in two samples, *S. aureus* in one sample, *S. epidermitis* in one sample, negative in two samples → unchanged in nine samples, bacteria disappeared (*E. coli*) in one sample

4) Catheter culture: Negative in all samples

5) Adverse events associated with dry preservation: No adverse events were identified throughout the study.

Interpretation of results

Thorough washing and dry preservation for intermittent self-catheterization allow 9 weeks of safe use of a reusable silicone catheter, and this technique helps improve the patient's quality of life (QOL).

Concluding message

No systematic examination about dry preservation of a reusable silicone catheter has not been reported anywhere. We should reconsider the basics of CIC from the point of view concerning patients' bother and QOL.

Specify source of funding or grant	no funding
Is this a clinical trial?	Yes
Is this study registered in a public clinical trials registry?	No
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	Yes
Specify Name of Ethics Committee	Kobe Medical Center institutional ethical committee
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes