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USE OF PRELUBRICATED NON HYDROPHILIC CATHETER IN SPINAL CORD INJURY PATIENTS
CLINICAL OUTCOME AND PATIENTS SATISFACTION

Aims Of Study

Clean intermittent catheterization (CIC) is an established option in bladder management of spinal cord injury patients (SCI). Frequency of urinary tract infections, incidence of urinary tract complications, facility and comfort in self-catheterization are critical factors for patients acceptance of long term CIC. Recently the use of pre-lubricated, hydrophilic, disposable catheters are viewed more favourably than regular plastic catheters used with lubricant (1). Aim of the present pilot study is to determine patient satisfaction and the overall incidence of complications of CIC using pre-lubricated, non hydrophilic PVC catheter (Istantcath-Hollister -USA) in a population of 16 SCI institutionalised patients.

Methods

Sixteen SCI patients (14 males and 2 females, mean age 36.7 ± 15.5 yrs, mean disease duration 14.8 ± 17.2 months) were enrolled. Before the study began patients had undergone urological assessment (history, physical examination, urinalyses and culture, urodynamics, imaging assessment of both lower and upper urinary tract) and all patients were free from UTI. All patients were experienced in clean intermittent catheterization but in three cases with cervical lesion the technique was performed with the help of others. Each patient was given a questionnaire regarding specific characteristics about the old catheter. After using the new catheter for at least 30 days, they were given the same questionnaire. A visual analogue scale was used (0 high score, 5 medium score, 10 poor score). Urinalyses and cultures were performed at a distance of 14, 28 and 40 days, to detect any new case of UTI. The T-test for dependent samples was used to determine if differences between scores were statistically significant. Square chi test was used to assess differences between frequencies.

Results

Ten patients had upper motor neurone lesion with detrusor hyperreflexia and 5 lower neurone lesion with detrusor areflexia, no patient showed any impairment of renal function or upper and lower urinary tract abnormalities before and after the study. All patients completed the study and used the new catheter longer than the pre-established period (mean period 57.8 ± 12.2 days).

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Tab 1 "Old" non lubricated catheter

| Questions | High pts n. | Medium pts n. | Poor pts n. | Scores Mean values |
|--------------------------------------|----------------|------------------|----------------|-----------------------|
| 1 ease of learning how to do it | 14 | 2 | 0 | 0.6 ± 1.7 |
| 2 ease in inserting it into urethra | 1 | 8 | 7 | 6.8 ± 3.0 |
| 3 ease in extracting it from urethra | 3 | 9 | 4 | 5.3 ± 3.4 |
| 4 comfort of the technique | 4 | 6 | 6 | 5.6 ± 4.0 |
| 5 ease of handling | 4 | 9 | 3 | 4.6 ± 3.4 |

Mean values for patients using regular plastic catheter 4.62 ± 3.79

Tab 2 "New" pre-lubricated catheter

| Questions | High pts n. | Medium pts n. | Poor pts n. | Scores mean value |
|--------------------------------------|----------------|------------------|----------------|----------------------|
| 1 ease of learning how to do it | 14 | 2 | 0 | 0.6 ± 1.7 |
| 2 ease in inserting it into urethra | 7 | 6 | 10 | 3.7 ± 3.8 |
| 3 ease in extracting it from urethra | 7 | 8 | 1 | 3.1 ± 3.09 |
| 4 comfort of the technique | 9 | 6 | 1 | 2.5 ± 3.1 |
| 5 ease of handling | 12 | 4 | 0 | 1.25 ± 2.23 |

Mean values for patients using the new catheter . 2.5 ± 3.07

We found a significant difference in patients opinion between the two different catheters mean value of scores 2.25 ± 3 (new catheter) vs 4.62 ± 3.79 (old catheter), $p=0.000013$ (Tab. 1 and Tab 2), there were also significant differences among all specific questions, except questions 1 and 3. Urinalyses and culture investigation before the trial, detected in 3 consecutive tests during a mean follow-up of 45 ± 9.2 days, showed UTI in 5 patients and asymptomatic bacteriuria in 15. While using pre-lubricated catheter 2 patients had UTI on second follow-up and 1 on the third (20%) ($p=0.026$), asymptomatic bacteriuria was detected in 6 (40%) patients at first, in 5 (33%) at second and in 3 (20%) at third follow up ($p=0.008$). Antibiotic suppression was needed in three patients (20%).

Conclusions

The pre-lubricated non hydrophilic catheter does not require additional water or gel because it is provided with a mechanism which uniformly distributes gel on its whole surface and catheterization appears gentler than with a regular catheter, as reported by most patients (Tab 2). Our study demonstrates that it is especially useful for patients with reduction of manual dexterity: three patients unable to perform the procedure without the help of others, became independent and they gave a high score to most of questions. Without preparation sterility is improved, reducing the number of UTI and bacteriuria during follow-up. Pre-lubricated, non hydrophilic PCV catheter (Istantcath-Hollister-USA), even if more expensive, is justified in institutionalised SCI patients.

References

1) Clean intermittent catheterization in spinal cord injury patients: long-term followup of a hydrophilic low friction technique. J. Urol., 1995, 153 (2) 345-348