

IMPACT OF CLEAN INTERMITTENT CATHETERIZATION ON QUALITY ADJUSTED LIFE YEARS (QALYS) IN PATIENTS WITH NEUROGENIC URINARY INCONTINENCE

Hypothesis / aims of study

Neurogenic urinary incontinence is one of the most common dysfunctions of the lower urinary tract, which affects patients' quality of life. Measuring a patient's quality of life is very important to assess the patient's perception of health. This is based on the interaction of a number of factors, such as physical, psychological, functional, emotional, mental well-being, as well as the status of work, environmental quality, social factors, vitality, pain, fear, and depression. The principle of Quality Adjusted Life Years (QALYs) was developed by the World Health Organization (WHO) and the World Bank to enable health policy makers to carry out rational health care. QALYs are calculated as the sum of the highest quality of life years gained as a result of medical intervention(2). To obtain the correct QALYs, it is necessary to calculate the weighting factor. The aim of this study was to measure significance of the impact of clean intermittent catheterization (CIC) on QALYs gained in patients with neurogenic urinary incontinence (UI).

Study design, materials and methods

A prospective multicentre study was done using a specific evaluation of questionnaires. Patients were randomly recruited from urology outpatient clinics between January and June 2014. The inclusion criteria were age more than 18 years, neurogenic UI, use of collection devices before starting the CIC, and CIC for more than six months. The exclusion criteria were inability of the CIC, cancer of the lower urinary tract, and fistulas formation. The measurement included demography of patients, the International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form (ICIQ-UI SF) and an estimation of life expectancy by the national registry. The ICIQ-UI SF consists of a three-item scale with items related to the frequency, amount of urinary incontinence, and quality of life (1). Main outcome measures were QALYs calculated from patient-reported severity of ICIQ-UI SF total score. The ICIQ-UI SF total score is in the range from 0 (without UI) to 21 (the most severe UI). The calculation of the weighting factor (WF) was obtained by linear transformation of the ICIQ-UI SF total score. A score was transformed to the range from 0 (the worst impact) to 100 (no impact) as follows: $1 - \text{ICIQ-UI SF total score}/21$. The QALYs was calculated as the weighting factor x life expectancy in years. Statistical non-parametric tests were used for statistical analyses at a significance level of 0.05 using the Statistical Package for the Social Sciences version 11.0 (SPSS Inc., Chicago, IL).

Results

The study included 365 patients, of whom 274 patients were fully analyzed (75.1%), comprising 186 men and 88 women. All patients were Caucasians with the mean age of 46.6 ± 15.5 years (range 18-88 years), body mass index of 25.2 ± 4.7 . The mean life expectancy for men was 29.9 years (range 6.1-57.1) and for women was 36.0 years (range 3.4-62.1). The mean daily number of clean intermittent catheterizations was in men 4.6 ± 1.8 (range 1-11) and in women 4.2 ± 1.9 (range 1-10). Patients before clean intermittent catheterization reached an ICIQ total score of 14.8 ± 4.0 ; the weighting factor of 0.3 ± 0.2 ; QALYs of 9.2 ± 7.3 . After six months of follow-up using clean intermittent catheterization all factors had changed as follows: ICIQ reached 9.0 ± 5.4 ; the weighting factor was 0.6 ± 0.3 ; QALYs 17.9 ± 11.4 ($p < 0.01$). Number of quality of life years increased by 94.7%; urinary incontinence evaluated with the ICIQ-UI SF decreased by 60.9% ($p < 0.01$).

Interpretation of results

The International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form revealed statistically significant differences among patients with neurogenic urinary incontinence and the clean intermittent catheterization. Number of quality adjusted life years gained reached twice the higher value for the years, suggesting a significant impact on CIC patients with neurogenic urinary incontinence.

Concluding message

The results confirmed that clean intermittent catheterization of the bladder statistically significantly increased the number of quality adjusted life years and reduced the degree of urinary incontinence in patients with neurogenic bladder.

References

1. Neurourol Urodyn. 2004;23:322-30
2. Neurourol Urodyn. 2012;31:526-34

Disclosures

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