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SENSITIVITY OF 1-HOUR PAD TEST TO CHANGE IN TIME OF INCONTINENCE STATUS AFTER PROSTATECTOMY

Hypothesis / aims of study

Pad testing is a simple, non-invasive and effective method to quantify the amount of urine loss in patients with urinary incontinence. The short-term tests are easy, quick, and provide immediate information. The pad weight result can serve as an excellent and objective outcome procedure before and after treatment in patients with urinary incontinence. It is important, in this case the capacity of test to be responsive to change in appropriate way after change of medical condition. There are few studies in literature that assess the sensitivity of 1-hour pad test to change in time of incontinence status. The post-prostatectomy incontinence model is ideal for this purpose, in fact the majority of patients recover urinary control after 1 year from surgery, for a natural recovery of rhabdosphincter function. The aim of this study is to assess the validity and reliability of 1-hour pad test to detect the changes of post-prostatectomy incontinence, and its correlation with the number of episodes of urinary leakage and the results of a validated questionnaire.

Study design, materials and methods

This prospective study was conducted between January 2005 and March 2006, 102 patients undergone standard RRP were considered for this protocol, after Ethical Committee approval and signed of informed consent. All patients was invited to complete Incontinence quality of life (I-QoL) questionnaire, a bladder diary for one week to assess the number of incontinence episodes frequency (IEF) and an ICS standard 1-hour pad test at 4, 16, and 24 weeks after catheter removal. Incontinence was measured by the number of pads used daily, we defined continence the use of 0 pad. A positive pad weight result was defined as more than 1 g leakage. Validity was assessed by calculating Spearmans' rank correlation coefficient between 1-hour pad test, IEF and I-Qol score. This test was used because the hypothesis of normality was rejected.
The responsiveness of 1-hour pad test to change was assessed by correlating the percentage change in the pad test with the percentage change in I-Qol score and in IEF (Chi-square test for difference in proportions).

Results

After 4 weeks 22 (21,5%) patients were completely dry, After 16 and 24 weeks completely continence was achieved by 66 (64,7%) and 72 (70,5%) patients respectively. The 1-hour pad test correlated well with the IEF (Spearman's coefficient of rank correlation (rho)= 0.450 p<0.0001, 95% Confidence Interval for rho = 0.280 to 0.592), and correlated significantly but much less strongly with I-Qol score (Spearman's coefficient of rank correlation (rho)= -0.360 p=0.0003, 95% Confidence Interval for rho = -0.518 to -0.178). The change in 1-hour pad test after improving of incontinence status correlated well with the improvement in the IEF and I-Qol (spearmans' correlation coefficient). At 4 weeks 17 (16,6%) patients had 0-1 g of urine loss in the pad test, at 16 and 24 weeks 61 (59,8%) and 68 (66,6%) patients respectively looses 0-1 gr of urine in the pad. The difference in the proportions is statistical not significant (95% CI = -5.86 to 15.66, Chi-square = 0.508 DF = 1 p = 0.4760).

Interpretation of results

A number of studies have reported poor reproducibility of test-retest 1-hour pad test, it has been shown that the amount of leakage is highly dependent on the amount of urine in the bladder. The ICI recommend to improve the accuracies with a fixed bladder volume. But very few studies assess the responsiveness of 1-hour pad test to change when incontinence status improves. In 2002 ICI suggested how research areas the evaluation of the ability of the different type of pad test to detect the change in incontinence status. In 2005 ICI comments this suggestion is not mentioned. But in the last 3-4 years there are very few studies on this topic. The capacity of 1-hour pad test to improve in relation of improvement of continence e.g. after conservative or surgical treatment could be very important and useful in clinical research more than in clinical practice.

Concluding message

With this study was shown how the 1-hour pad test is sensitive to change consequently at improve of continence status after radical prostatectomy

References

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Was this study approved by an ethics committee?	**Yes**
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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**