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THE SIGNIFICANCE OF 1-HOUR PAD TEST IN THE PATIENT WITH STRESS URINARY INCONTINENCE

Hypothesis / aims of study

Abdominal leak point pressure(ALPP) is used as an objective parameter to assess the severity of female stress urinary incontinence. However, the limitation of abdominal leak point pressure for stress urinary incontinence is that abdominal leak point pressure can not demonstrate the real situation for urinary leakage. Moreover some patients will be unable to generate the enough abdominal pressure to leak under the circumstances of testing. To overcome this limitation 24-hour or 48-hour pad test is recommended. However, 24-hour pad or 48-hour pad test is clumsy and the patient compliance may decrease. So 1-hour pad test is recommended by ICS. To study the significance of 1-hour pad test in the patient with stress urinary incontinence we measured the abdominal leak point pressure and 1-hour pad test in the patient with stress urinary incontinence and compared the results.

Study design, materials and methods

One hundred thirteen female patients with stress urinary incontinence symptom were prospectively evaluated with 1-hour pad test recommended by ICS and videourodynamic study to determine the abdominal leak point pressure. A fluid load of 500ml was administrated and this was followed 1-hour later by six separate exercises. Each pad was weighed before and after use and weight change was urine loss. We defined that 1-hour pad test negative if the urine loss was less than 2g. Videourodynamic study was performed using 6 Fr. dual lumen urodynamic catheter at non-physiological filling rate, and radiographic contrast media.The abdominal leak point pressure was assessed with the patient standing with a bladder volume of 200ml. The abdominal leak point pressure was defined as the minimal intravesical pressure at which the contrast media was visualized emanating from urethral meatus commanding to slight cough and gradually increase the strength of it. The patients were divided into 4 groups. Group1:patient with ALPP<70cmH2O, Group2: patient with 70cmH2O ≤ALPP≤100cmH2O, Group3:patient with ALPP>100cmH2O, Group4:patient with no leakage. Kendall's tau-β test was done top evaluate the relationship of urinary leakage among 4 groups.

Results

The mean amount of urine leakage measured by 1-hour pad test in Group1,2,3,4 were 52.7(14-108), 53.4(0-150), 48.9(20-120), 51.6g(0-108) respectively and there was no stastiticslly significant correlationship between ALPP and amount of urine leakage by 1-hour pad test(r = -0.49, p>0.05)(Fig.1). Eighteen(16%) women did not leak during ALPP measurement and 5(4.4%) women had negative pad test. Among 18 women with no leakage during ALPP measurement, only 3 women had negative pad test(table1).

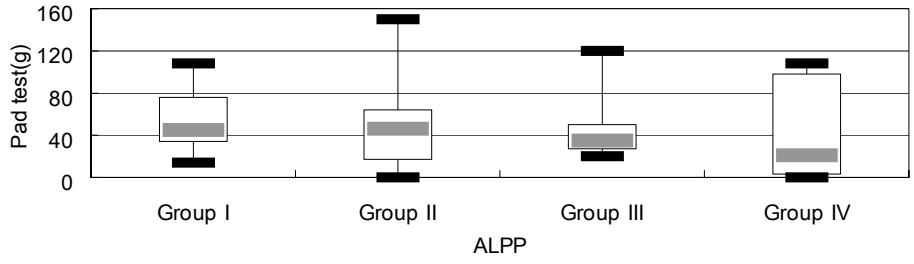

Fig. 1. Correlation between amount of urine leakage by 1-hour pad test and ALPP. There was no statistically significant relationship between amount of urine leakage by the 1-hour pad test and ALPP (Kendall's tau-β test, r=-0.49, p>0.05). ALPP: abdominal leak point pressure.

	ALPP		
	Leakage (Group I, II, III)	No leakage (Group IV)	Total
Pad test (+)	93	15	108
Pad test (-)	2	3	5
Total	95	18	113

Table 1. Results of ALPP and 1-hour pad test
ALPP: abdominal leak point pressure

Interpretation of results

Although the position of catheter(intrvesical or intravaginal), size of catheter used, bladder volume have a significant influence on leak poin pressure, several investigators demonstrated low abdominal leak point pressure are associated with a higher assigned grade of incontinence severity(1-3).On the contrary, in our study there was no relationship between ALPP and 1-hour pad test. Fifteen patients who did not leak on ALPP showed positive pda test ranged from 15-108g. This finding demonstrated that some patients can not generate enough abdominal pressure to leak urine

under the circumstances of testing. Former investigators did not involve this segment of patients. One-hour pad test used in this test was proposed by ICS. Several studies have demonstrated that urine load influences the amount of leakage during the test.To increase the reproducibility of pad-weighing test by minimizing the influence of variation in urine load some authors proposed to perform it with a standardized bladder volume. However it requires a retrograde filling of bladder. This procedure can cause irritation symptoms and alter the result. In our present study only 2 patients were negative on 1-houe pad test proposed by ICS among 95 patients who leaked on ALPP. These data shows that there is no correlationship between ALPP and amount of urine leakage on 1-hour pad test. Nevertheless, 1-hour pad test proposed by ICS is very sensitive to check the absence or presence of urinary leakage

Concluding message

Our results demonstrate 1-hour pad test proposed by ICS dose not assess the severity of stress urinary incontinence. However, in case of no leakage on ALPP 1-hour pad test is needed to check the absence or presence of urinary leakage objectively in the patient with stress urinary incontinence symptom.

REFERENCES

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FUNDING: NONE
DISCLOSURES: NONE
HUMAN SUBJECTS: This study was approved by the Kangdong Sacred Heart Hospital IRB and followed the Declaration of Helsinki Informed consent was obtained from the patients.