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Numata A[1], Kura T[1], Iuchi H[1], Taniguchi N[1], Kakizaki H[1]
1. Asahikawa-Medical college

INTRAVESICAL INSTILLATION OF OXYBUTYNIN AND RESINIFERATOXIN: COMPARISON OF THE EFFECTIVENESS ON BLADDER STORAGE FUNCTION AND HEALTH-RELATED QUALITY OF LIFE

Hypothesis / aims of study
We evaluated the effectiveness of intravesical instillation of oxybutynin (Oxy) and resiniferatoxin (RTX) on bladder storage function and health-related quality of life in patients with refractory bladder storage dysfunction.
Study design, materials and methods
A total of 7 patients were enrolled in this prospective study, including 2 with spinal cord injury, 4 with spina bifida and 1 who had undergone surgery for stress urinary incontinence (table 1). They were all doing clean intermittent catheterization for voiding difficulty and intravesical instillation of Oxy for refractory incontinence or low compliance bladder. They instilled 5mg/ 10mL oxybutynin solution from 1 to 4 times a day according to their bladder condition. Three days after ceasing Oxy instillation, RTX solution (50 nM/100mL) was instilled and retained in the bladder for 30 min under local anesthesia by 0.5% bupivacain. Filling cystometry was assessed at baseline (before Oxy instillation), and health-related quality of life with King's Health Questionnaire (KHQ) was assessed at baseline retrospectively. Moreover, filling cystometry and KHQ were assessed after Oxy instillation and 1 month after RTX instillation.
Results
Bladder storage parameter (bladder capacity or bladder compliance) was improved in all patients after Oxy instillation. Bladder storage parameter after Oxy instillation was 137 to 531% (average 290%) compared to baseline. After RTX instillation, bladder storage parameter was improved in 5 of the 7 patients, ranging from 134 and 382% (average 172%) in these 5 patients compared to baseline (Fig. 1), while in other 2 patients bladder storage parameter was not improved. Before Oxy instillation, the average scores of each KHQ item in 7 patients were between 32.1 and 73.4 (mean 53.4) with high scores observed in the item of Incontinence impact, Role limitation, Physical limitation, Sleep and energy, Severe (coping) measure (Fig. 2). After Oxy instillation, the average scores of each KHQ item in 7 patients were reduced to between 16.8 and 42.3 (mean 28.7), while after RTX instillation, they were only slightly reduced to between 25.0 and 55.6 (mean 43.3). Of the 7 patients, 4 and 1 wanted to continue Oxy instillation and RTX instillation, respectively. Significant side effects were not encountered by these two instillations.

Case	Age	Sex	Diagnosis	Duration of oxybutynin vesical instilation	Other mngements
1	57	F	SUI* post operation	4Y7M	non
2	29	M	Spinal cord injury	10Y3M	non
3	70	M	Spinal cord injury	9Y2M	propiverine
4	17	F	Spina bifida	6Y	Night balloon, Propiverine
5	21	F	Spina bifida	1Y	non
6	18	M	Spina bifida	7Y	Night balloon
7	32	F	Spina bifida	14Y4M	non

Table 1 patients characteristics
*SUI: stress urinary incontinence

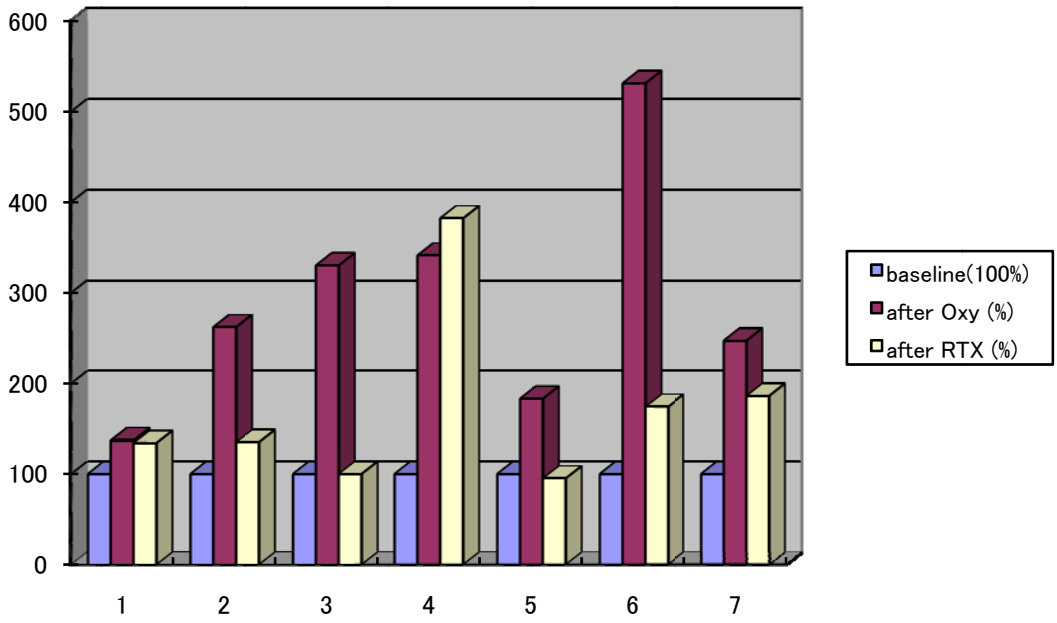

Fig.1 Bladder storage parameter (bladder capacity or bladder compliance) at baseline (before Oxy instillation), after Oxy instillation and after RTX instillation.
The value at baseline was expressed as 100%.

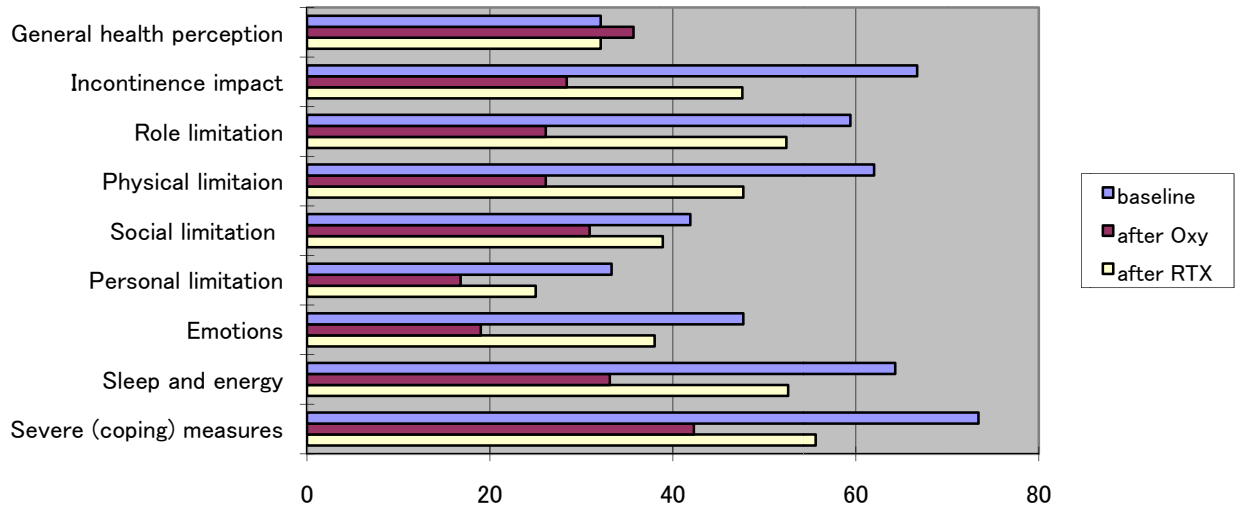

Fig.2 The average score of each KHQ item in 7 patients at baseline (before Oxy instillation), after Oxy instillation and after RTX instillation.

Interpretation of results

Intravesical instillation of Oxy and RTX improved bladder storage function and health-related quality of life in patients with refractory bladder storage dysfunction. Overall Oxy instillation was more effective than RTX instillation. About 60% of the patients preferred Oxy instillation rather than RTX instillation.

Concluding message

Intravesical instillation of Oxy was more effective than RTX instillation in improving bladder storage function and health-related quality of life in patients with refractory bladder storage dysfunction.

References

1. Paraplegial, **32:** 25-29, 1994
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3. Eur Urol, **42**: 56-62, 2002

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CLINICAL TRIAL REGISTRATION: This clinical trial has not yet been registered in a public clinical trials registry.
HUMAN SUBJECTS: This study was approved by the Asahikawa Medical College review board and followed the Declaration of Helsinki Informed consent was obtained from the patients.