

## CONTRIBUTING FACTORS TO FAILURE OF IMPROVEMENT OF SUBJECTIVE SYMPTOMS AFTER MIRABEGRON ADMINISTRATION IN FEMALE PATIENTS WITH AN OVERACTIVE BLADDER

### Hypothesis/ Aims of study

Mirabegron was reported to be effective in women with overactive bladder (OAB) for improving both subjective symptoms and bladder storage function. But, in actual clinical practice, while some patients have a remarkably good response to mirabegron, others don't show improvement in subjective symptoms. The factors responsible for poor symptomatic response to mirabegron administration and its possible correlation with objective changes in the lower urinary tract function are yet to be elucidated.

We investigated the factors responsible for the failure of improvement of subjective symptoms despite mirabegron treatment by performing urodynamic studies (UDS).

### Study, Materials and methods

A post hoc analysis of data from a prospective study was conducted to investigate the efficacy of mirabegron for female patients with OAB. Sixty patients were evaluated. The patients received mirabegron 50 mg/day for 12 weeks. At baseline and after treatment, subjective symptoms were evaluated by using the Overactive Bladder Symptom Score (OABSS). To assess objective changes in lower urinary tract function, UDS was conducted to measure the parameters for storage and voiding functions. According to the minimally clinically important change for OABSS evaluation<sup>1</sup>, the patients were divided into two groups as good responders (GR), which includes patients with improvement in OABSS of  $\geq 3$  points, and poor responders (PR), which includes those with improvement in OABSS of  $< 3$  points. The subjective and objective findings were compared between the two groups. In addition, clinical findings related to metabolic syndrome were analyzed in association with response to mirabegron administration.

### Results

Of the 60 patients, 33 (55%) were GR and 27 (45%) were PR. The mean improvement in OABSS was 4.8 points in the GR and only 1.1 points in the PR. The improvement in OABSS in the GR was significantly greater than that in the PR. In storage function assessed based on UDS results, the GR showed significant improvements, but the PR did not demonstrate significant improvements in the incidence of detrusor overactivity (DO) and bladder capacity. Especially DO resolved in 85% of the GR but in only 7% of the PR after mirabegron treatment, showing a significant difference in objective remedial effect between the two groups. Meanwhile, at 12 weeks after treatment, urodynamic voiding function had not deteriorate in both groups, without a significant intergroup difference.

### Interpretation of Results

In our comparison of baseline characteristics between the two groups, although no significant difference was observed between the PR and GR in terms of age, total OABSS, and OABSS-subscore, the values of the parameters related to metabolic syndrome, such as body mass index and levels of total and low-density lipoprotein cholesterol, were significantly higher in the PR than in the GR. (Table)

Table. Baseline characteristics between the two groups

	GR	PR	p
	Mean (S.D.)	Mean (S.D.)	
n	33	27	
Age(years)	70.3 $\pm$ 13.1	74.6 $\pm$ 6.2	0.41
OABSS	9.3 $\pm$ 2.1	9.4 $\pm$ 2.9	0.86
OABSS-Q3	3.6 $\pm$ 0.8	3.5 $\pm$ 1.1	0.92
BMI	21.3 $\pm$ 2.8	25.1 $\pm$ 2.3	0.04
T-Chol	184 $\pm$ 35	224 $\pm$ 34	0.02
LDL	102 $\pm$ 25	144 $\pm$ 20	0.02

### Concluding message

The present findings suggest that insufficient improvement in objective storage function was a contributing factor to the failure of improvement of subjective symptoms after mirabegron treatment in the OAB female patients. In addition, high BMI and blood cholesterol levels were suggested as factors related to insufficient improvement of subjective and objective symptoms by mirabegron treatment.

### References

1. Gotoh M et al. Urology. 2011; 78: 768-73.

### Disclosures

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