

## SAFETY AND THERAPEUTIC EFFICACY OF MIRABEGRON 25 MG IN VERY OLD AND FRAIL PATIENTS WITH OAB AND MULTIPLE COMORBIDITIES – COMPARISON WITH YOUNGER PATIENTS

### Hypothesis / aims of study

Mirabegron is a Beta 3-adrenoreceptor agonist in the detrusor muscle, which relaxes detrusor smooth muscle. Mirabegron 50 mg once daily had been proved effective in reducing the frequency of micturitions in patients with symptoms of OAB. The aims of this study is to assess the therapeutic efficacy and safety of mirabegron 25 mg once daily in very old and frail patients with overactive bladder(OAB) and multiple comorbidities compared with younger patients.

### Study design, materials and methods

Patients with OAB at the age range of between twenty to sixty years old and over eighty years old were included in this study. All of the participants were treatment-naive or no treatment more 3 months at the baseline, treated with mirabegron 25 mg once daily. The patients were divided into two groups, younger(20-60 years old) and older( $\geq$  80 years old). Patients who discontinued mirabegron 25 mg once daily; or changed the dosage of mirabegron; or changed to antimuscarinics during treatment course were excluded. Their underlying comorbidities was recorded. Assessment tools included International Prostate Symptom Score (IPSS), Overactive Bladder Symptom Score (OABSS), Urgency Severity Score (USS), Patient Perception of Bladder Condition (PPBC), Quality of Life (QoL), uroflowmetry and prostate volume. We compared the difference of the change from baseline to 1<sup>st</sup> month and 3<sup>rd</sup> month between two groups. Safety assessments included reporting adverse events(AEs) and post-void residual.

### Results

Total 92 patients (younger, N=56; very older, N=40) with OAB treated with mirabegron 25 mg once daily were included. The mean age of younger group was 50.55  $\pm$  10.12 and older group was 85.58  $\pm$  3.76. In overall, the patients in the older group have more underlying comorbidities than younger group (59 vs 30). There was no significant difference of baseline in IPSS, OABSS, USS, QoL and total prostate volume (TPV) between two groups. However, the baseline Qmax, voided volume, post-voided residual (PVR) and PPBC were lower in older group. A statistically significant improvement of PPBC at 1<sup>st</sup> and 3<sup>rd</sup> month compared with baseline in younger group. (P<0.05). In older group, the score of QoL and OABSS were significantly decreased at 1<sup>st</sup> and 3<sup>rd</sup> month compared with baseline. (P<0.05).The mean changes of most measurements after 3 months of treatment were no significant difference between younger and older patients, except Qmax and voided volume. Younger patients experience more AEs than the elders (26.79% vs 12.5%) during treatment. The common AEs included dry mouth (n=5), abdominal distension (n=3) and dizziness (n=3). Nevertheless, the incidence of AEs when using mirabegron were acceptable low in two groups.

Table 1. Baseline characteristics

	Younger (20-60y/o)	Older (>80y/o)	P-value
N	56	40	
Age	50.55 $\pm$ 10.12	85.58 $\pm$ 3.76	<0.001*
Gender			
-Male	28(50%)	28(70%)	
-Female	28(50%)	12(30%)	
Comorbidity	30	59	
-BPH	15(30%)	23(59%)	0.009*
-DM	8(14.3%)	8(20%)	0.580
-COPD	1(1.8%)	2(5%)	0.569
-CAD	0	6(15%)	0.004*
-CVA	2(3.6%)	7(17.5%)	0.032*
-CKD	4(7.1%)	6(15%)	0.311
-PD	0	4(10%)	0.028*
-CHF	0	1(2.5%)	0.417
-HTN	0	2(5%)	0.171
IPSS V	5.22 $\pm$ 5.52	5.74 $\pm$ 6.11	0.90
IPSS S	6.40 $\pm$ 3.42	6.18 $\pm$ 3.10	0.291
IPSS T	11.62 $\pm$ 7.09	11.67 $\pm$ 7.44	0.536
QoL	3.76 $\pm$ 1.33	3.41 $\pm$ 1.50	0.140
Qmax	16.89 $\pm$ 9.44	7.75 $\pm$ 3.42	<0.0001*
Vol	239.45 $\pm$ 155.50	107.28 $\pm$ 63.97	0.003*
PVR	32.71 $\pm$ 44.66	70.36 $\pm$ 112.14	0.003*
OABSS	5.94 $\pm$ 3.49	6.23 $\pm$ 3.47	0.582
USS	1.85 $\pm$ 1.75	2.28 $\pm$ 1.88	0.106
PPBC	4.06 $\pm$ 1.39	3.18 $\pm$ 2.01	<0.000*
TPV	39.44 $\pm$ 18.95	52.31 $\pm$ 43.76	0.132
TZI	0.34 $\pm$ 0.13	0.40 $\pm$ 0.22	0.001*

\* Significant difference

Table 2. Treated 3 months

	Younger			Older		
	Baseline	3 mo	P-value	Baseline	3 mo	P-value
IPSS V	6.20 ± 7.19	4.80 ± 4.96	0.333	5.45 ± 4.68	3.64 ± 6.38	0.299
IPSS S	4.40 ± 2.80	5.00 ± 4.03	0.483	6.64 ± 3.64	5.64 ± 3.17	0.284
IPSS T	10.60 ± 8.86	9.80 ± 7.66	0.458	11.18 ± 6.11	9.27 ± 7.86	0.342
QoL	3.29 ± 1.38	2.43 ± 0.98	0.111	3.64 ± 1.69	2.09 ± 1.04	0.018*
Qmax	17.54 ± 9.64	18.30 ± 10.02	0.557	6.17 ± 6.55	9.83 ± 5.85	0.172
Vol	299.70 ± 233.04	305.20 ± 214.77	0.766	110.33 ± 55.75	152.00 ± 120.70	0.405
PVR	31.70 ± 36.01	37.40 ± 44.89	0.748	58.40 ± 75.34	56.20 ± 93.74	0.822
OABSS	4.63 ± 2.13	5.63 ± 3.16	0.286	6.82 ± 4.05	4.82 ± 2.79	0.073*
USS	2.00 ± 1.85	2.00 ± 1.93	1.000	1.91 ± 1.92	1.27 ± 1.85	0.341
PPBC	3.63 ± 1.51	2.00 ± 1.07	0.010*	3.09 ± 2.30	2.09 ± 1.70	0.102

\* Significant difference

Table 3. Mean change after 3 month from baseline

Delta (Baseline-3 month)	Younger	Older	p-value
IPSS V	-1.40 ± 4.33	-1.25 ± 5.61	0.249
IPSS S	0.60 ± 2.59	-0.50 ± 3.29	0.551
IPSS T	-0.80 ± 3.26	-0.92 ± 6.96	0.139
QoL	-0.10 ± 1.60	-1.25 ± 2.01	0.101
Qmax	0.76 ± 3.94	-0.25 ± 6.81	0.050*
Vol	5.50 ± 56.68	3.08 ± 102.63	0.043*
PVR	5.70 ± 54.31	-2.25 ± 27.17	0.126
OABSS	1.50 ± 2.42	-1.58 ± 3.48	0.424
USS	0.30 ± 1.83	-0.58 ± 2.02	0.628
PPBC	-0.60 ± 2.55	-0.83 ± 1.85	0.608

\* Significant difference

### **Interpretation of results**

The results showed that mirabegron 25 mg once daily improved the symptoms of OAB and quality of life in old patient with multiple comorbidities. The treatment efficacy were no difference between younger and older patients. The incidence of AEs showed no higher in older patients, although they had more underlying diseases.

### **Concluding message**

Mirabegron 25 mg once daily is a safe and effective drug to improve OAB symptoms and QoL in old patients with multiple comorbidities.

### **Disclosures**

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