497

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MIRABEGRON IS A SAFE AND EFFECTIVE TREATMENT FOR PARKINSON'S DISEASE PATIENTS WITH STORAGE SYMPTOMS REFRACTORY TO ANTIMUSCARINICS

Hypothesis / aims of study

One of the common non-motor symptoms of Parkinson's disease (PD) is urinary dysfunction, which is caused by the disruption of dopaminergic pathways. (1) Lower urinary tract symptoms (LUTs) are estimated in 27–70% of PD patients (2). The main challenge urologists have with these patients is that antimuscarinics, the cornerstone treatment of storage symptoms, worsen other non-motor symptoms (such as constipation and dry mouth) and patient's cognitive function. For these reasons other specialists involved in the care of PD patients stop antimuscarinics and patients' LUTS do not resolve. We want to evaluate the efficacy and safety of mirabegron 50 mg in PD patients with storage symptoms refractory to antimuscarinics (due to lack of efficacy or adverse effects) to offer another alternative to these patients.

Study design, materials and methods

This is a single-center retrospective study that includes PD patients who visited the outpatient clinic between December 2014 and September 2015. 36 patients refractory to antimuscarinics because of lack of effect, lack of tolerability (constipation, dry mouth, cognitive alteration) or combination, received mirabegron 50 mg once daily alone or added to antimuscarinics. The primary outcome was to evaluate the subjective improvement in urinary symptoms, which was defined as cure (no storage symptoms), improved (storage symptoms still present but less bothersome), and failure (no improvement of symptoms). Secondary outcomes were adverse effects and safety regarding associated comorbidities and medications.

Results

Patient's clinical characteristics are shown in Table 1. The mean age was 75.2 ± 6.1 years with a mean of 2.46 ± 1.74 comorbidities, of which 47% was hypertension. There most common symptoms were urgency (U) (60%) and urge incontinence (UI) (60%). Only 1 patient had low bladder compliance.

The reasons for non-response to antimuscarinics are shown in figure 1.

There was no significant difference between cure, improvement or failure in the patients that received combo vs mirabegron alone (table 2)

10% of the patients took beta-blockers, 10% aspirin and 3% warfarin, with no adverse cardiac effect after mirabegron. There were no acute urinary retention episodes, arrhythmias, hypertensive crisis or drug intoxication in the patients.

Interpretation of results

Mirabegron shows an improvement or cure of previous refractory storage symptoms in 85% of patients. It can be use in patients who cannot tolerate antimuscarinics especially secondary to adverse events. PD patients generally have more than one medical comorbidities and take many medications. 47% of our patients had controlled hypertension while receiving mirabegron and none presented a cardiac event or complication. 1 patient that received combination therapy presented urinary retention.

Concluding message

Mirabegron is a safe and efficient pharmacological treatment that should be implemented in PD patients to avoid unnnecesary adverse effects.

Table 1. Baseline characteristics for all patients (N = 36)

Variable	Total
Age (years), mean ± SD	75.2 ± 6.1
Sex, N (%)	
Female	19 (52.8)
Male	17 (47.2)
Time with PD, years, median (IQR)	3.5 (2-5)
Number of antimuscarinics previously used, median (IQR)	2 (1-2.75)
Number of other comorbidities medications, Mean ± SD	5.03 ± 2.16
URODYNAMIC FINDINGS (N = 29)	
MCC (cc), median (IQR)	269 (163-356)
Bladder contractility at filling phase, n (%)	
Normal	4 (13.8)
Phasic IDC	2 (6.9)
Terminal IDC	23 (79.3)
Bladder contractility at voiding phase, n (%)	

• Normal	27 (93.1)
• Underactive bladder	1 (3.4)
• Neurogenic acontractile detrusor	1 (3.4)
PVR volume (cc), median (IQR)	27.5 (10 – 45)
Qmax (cc/s), median (IQR)	6.7 (4.4-11.5)
Max Pdet (cmH_2O) , median (IQR)	34 (24 – 38)

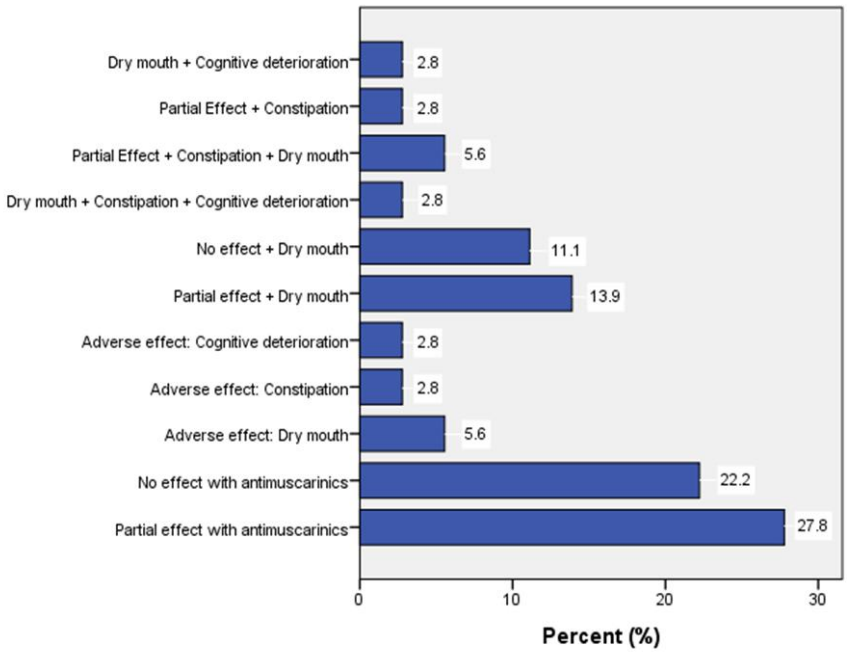
IDC = Involuntary detrusor contraction, MCC = Maximum cystometric capacity, Pdet = detrusor pressure, PD = Parkinson's disease, PVR = Post void residual, Qmax = Maximum flow

Table 2. Comparison of mirabegron alone and in combination in the improvement of urinary symptoms (N =34)[a]

Partial - Non responders	Mirabegron alone (N = 9)	Mirabegron + antimuscarinic (N = 25)	P value
Cure	5	13	0.85
Improvement	4	11	0.98
No improvement	0	1	0.54

a: 2 patients lost to follow-up
Chi-square test

Figure 1. Reasons to start mirabegron 50 mg in patients with Parkinson's Disease and overactive bladder



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