

Unusual compulsive behaviors primarily related to dopamine agonist therapy in Parkinson's disease and multiple system atrophy

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Abstract

Unusual compulsive behaviors (weighing, card and video game playing, fishing, gardening, intense interest in established hobbies, locking and unlocking doors, repetitive dressing and undressing) occurred in relation to dopamine agonist therapy (six patients) and levodopa therapy (one patient) in seven patients with parkinsonism (seven Parkinson's disease, one multiple system atrophy). These behaviors occurred in tandem with pathological gambling, hypersexuality, compulsive eating, compulsive shopping or punding in six of the seven cases. Obsessive thoughts were present in one patient, with no prior history of obsessive-compulsive disorder. The simultaneous occurrence of these phenomenologically distinct behaviors in this group of patients suggests that a broad spectrum of psychopathology may occur in this context and should be monitored for in routine neurological practice.

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1. Introduction

Patients with Parkinson's disease (PD) are at risk of developing a variety of pathological behaviors associated with dopaminergic drugs, most commonly dopamine agonists. Pathological gambling [1], shopping [2,3], hypersexuality [4] and compulsive eating [5] have been described, primarily in relation to dopamine agonist therapy. A phenomenologically distinct compulsive behavior known as punding (stereotyped, prolonged, purposeless motor behaviors often characterized by repetitive manipulation and sorting of small objects) has also been associated with dopaminergic therapy [6]. Punding was first described in abusers of amphetamines, and is thought to be due to dopaminergic excess [7].

In our routine clinical practice, we have observed that a broad range of compulsive behaviors may occur in relation to commonly prescribed dopamine agonists, and frequently

more than one behavior type occurs concurrently in the same patient. We report seven cases of unusual compulsive behaviors in parkinsonism (PD and multiple systems atrophy (MSA)), six of whom developed this behavior in relation to pramipexole or ropinirole therapy.

2. Methods

Between January 2005 and October 2006, we identified seven patients who developed unusual compulsive behaviors in the setting of dopaminergic therapy through our routine movement disorders practice at Mayo Clinic, Rochester. Data were collected from retrospective chart reviews. In all cases, the psychopathology was identified from the clinical history by the treating neurologist, and psychiatry also evaluated Patients 5 and 7.

3. Results

The mean age of disease onset was 51 years (range 40–60 years). The mean latency of onset of compulsive behavior from diagnosis of parkinsonism was 6.3 years. At the onset of compulsive behaviors, all had Hoehn and Yahr stage 2 PD except Patient 1 (stage 3) and Patient 6 (MSA). While

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Table 1

Patient diagnoses, medications for parkinsonism used and relationship to behavioral changes

Patient no.	Diagnosis	Maintenance daily levodopa dose (mg)	Maintenance daily dopamine agonist dose	Other dopaminergic drugs	Latency, levodopa to behavior (months)	Latency, dopamine agonist to behavior (months)	Latency, other drug to behavior (months)	Resolved on agonist cessation
1	PD	100	Pramipexole 2 mg	–	36	<24	–	n/a
2	PD	300	Pramipexole 4.5 mg	–	70	<18	–	Yes
3	PD	300	Ropinirole 24 mg	Selegiline 5 mg	48	<24	<24 (selegiline)	n/a
4	PD	600	Pramipexole 4.5 mg	Selegiline 5 mg	154	4	154 (selegiline)	Yes
5	PD	0	Ropinirole 21 mg	–	–	0 (once on 18 mg)	–	Yes
6	MSA	0	Pramipexole 4.5 mg	–	–	1	–	Yes
7	PD	800	0	–	48	–	–	–

Patients 1, 2, 3 and 7 had a history of depression (all in remission except Patient 7), none of the patients had a history of obsessive-compulsive disorder (OCD). Patient 7 had a diagnosis of PD-related dementia.

In total, six patients were taking a dopamine agonist (pramipexole 4; ropinirole 2), all at therapeutic doses (Table 1). In these patients, all compulsive behaviors developed simultaneously and within a mean of 11 months (range 1–24) after initiating a dopamine agonist. In the four cases where a dopamine agonist was used as an adjunct to levodopa, the mean duration of levodopa treatment before onset of compulsive behaviors was 76.8 months (range 36–154). Follow-up was available in two (Patients 2 and 4), with resolution of the behaviors after dopamine agonist cessation in both. Patients 5 and 6 received dopamine agonist monotherapy: both had resolution of the compulsive behaviors after drug cessation. Patient 7 received levodopa monotherapy. Some details of Patients 5 and 6 have been previously published elsewhere [4].

4. Case reports

All of the behaviors described in the following patients were novel for them with no prior history to suggest these tendencies.

4.1. Patient 1

A 65-year-old female with PD for 9 years developed compulsive eating, and also felt compelled to repetitively weigh herself at frequent intervals during the day and at night. She found her behavior both purposeless and repetitive. Obsessive thoughts were also a feature, as the patient ‘had to’ weigh herself three times each occasion she used the weighing scales.

4.2. Patient 2

A 67-year-old female with PD for 8 years played computer games and solitaire card games for hours on

end, often continuing to do so through the night. She did not enjoy the experience and found it purposeless, but did so as she felt she had ‘to be doing something’. She also developed compulsive eating and gambling.

4.3. Patient 3

A 48-year-old male with PD for 5 years, with little prior interest, developed an intense interest and fascination with fishing. His wife was concerned that he fished incessantly for days on end, and his interest did not abate despite never catching anything. This patient also developed compulsive shopping, spending large amounts of time and money in thrift stores.

4.4. Patient 4

A 53-year-old male with PD for 13 years became intensely interested in lawn care. He would use a machine to blow leaves for 6 h without rest, finding it difficult to disengage from the activity, as he found the repetitive behavior soothing. He also developed compulsive gambling.

4.5. Patient 5

The wife of a 52-year-old male with an 11-year history of PD complained that her husband now spent all of his time on his hobbies, to the detriment of their marriage. The patient made small stained glass windows, day and night. In addition, he would frequently stay awake arranging rocks into piles in their yard, intending to build a wall, but never doing so. He would start multiple projects but complete nothing. He was also noted to have become hypersexual, demanding sexual intercourse from his wife several times daily.

4.6. Patient 6

This 60-year-old male, with a history of alcohol abuse and ultimately diagnosed with MSA, relentlessly watched

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