When Duodopa Opens DAWS

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Objective

To describe a case of dopamine withdrawal syndrome (DAWS) in a patient with Parkinson's Disease (PD).

Background

A 54 year old female was diagnosed with PD in 2011. She was initially managed reasonably well, however in the last 18 months had required augmentation of her medications to manage her symptoms.

Her medication regime included 2 dopamine agonists, an apomorphine infusion and rotigotine patch. Due to experiencing side-effects such as compulsive eating and poor symptom control, it was decided the patient would be suitable for Duodopa (levodopa/carbidopa intestinal gel) therapy.

Admissions History

- 4 admissions in 4 months
- 1st admission – planned admission for initiation of Duodopa
- 2nd admission – 2 weeks later, presented to the emergency department with chest pain, after investigations, referred to GP to follow up with stress test
- 3rd admission – 7 weeks later, reduced oral intake, severe nausea which occurred gradually following insertion of PEJ for Duodopa administration. Subsequently Duodopa ceased as requested by patient
- 4th admission – 1 week later, presenting complaint (see below)

Presenting Complaint

Brought into hospital by ambulance with chest pain, described as crushing and band-like.

The patient explained she had been experiencing panic attacks, especially in traffic, and also experiencing vivid dreams and hallucinations.

Investigations ruled out cardiac involvement and the patient was admitted to the neurology ward.

The patient voiced that she felt her PD symptoms were not being adequately managed with around the clock 3rd hourly Madopar and was needing assistance with activities of daily living requiring her to leave her job, home, and live with her sister in a different city.

Differential diagnosis was DAWS due to abrupt cessation of her apomorphine infusion and rotigotine patch when Duodopa was commenced.

DAWS

Dopamine agonist withdrawal syndrome has been described as a severe, stereotyped cluster of physical and psychological symptoms that correlate with dopamine agonist withdrawal in a dose-dependent manner. DAWS may be experienced when dopamine agonists are tapered, or when ceased.[1] This is not isolated to PD patients only, it may be experienced by any patients prescribed dopamine agonists.

The prevalence of DAWS has been reported to be between 15-19% in PD patients who undergo taper or cessation of a dopamine agonist.[2]

Higher daily doses of dopamine agonists and presence of impulse control disorders have been confirmed by several studies to be significant risk factors for DAWS.[2]

Table 1. Clinical features of DAWS[1]

Psychiatric
Anxiety
Panic attacks
Depression
Dysphoria
Agoraphobia
Suicidal ideation
Insomnia
Irritability
Agitation
Confusion
Drug cravings
Autonomic/gastrointestinal
Diaphoresis
Fatigue
Flushing
Nausea
Orthostatic hypotension
Vomiting
Sensory
Generalized pain
Restless legs

Secondary Consequences of DAWS

Overall, patients tend to become less active and more dependent in their activities of daily living. [1] It can have a devastating effect, personally, socially, and occupationally. [1]

In this case, the patient was no longer able to work, experienced panic attacks, sleep disturbance and hallucinations, and could no longer live with her husband due to increased need for assistance.

Management of DAWS

In approximately half of PD patients with DAWS, the symptoms are self-limiting and full recovery achieved within days or weeks. [1] Other patients experience a protracted withdrawal syndrome that may lasts for months to years.[1]There are no specific treatments for DAWS. Levodopa and other dopaminergic medications are ineffective. The only way to alleviate withdrawal symptoms is to recommence the dopamine agonist. [1]

Outcomes

This patient was recommenced on a low dose of rotigotine patch, which was titrated up during the admission. She was also commenced on escitalopram and alprazolam to help manage her panic attacks.

The patient reported feeling much better once the rotigotine patch was recommenced. On discharge she was still experiencing panic attacks, however they were less frequent and less intense.

Follow-up

The patient was re-admitted 4 weeks later for recommencement of Duodopa as she was experiencing an increase of motor symptoms on her current medication regime.

The Duodopa infusion was tolerated much better with no complications, minimal nausea and an improvement in her motor symptoms.

6 months later, she has not experienced the side-effects previously encountered when first commenced on Duodopa, and the rotigotine patches are still required. She still is unable to return to work.

Practice Points for Pharmacists

Providing tailored education to PD patients, especially when commencing or ceasing therapies, will ease the transition for the patient and enable them to identify adverse effects earlier which they can discuss with their pharmacist or doctor.

Identifying those patients who may be at increased risk of developing adverse effects when commencing or ceasing therapies is also an important role for pharmacists.

References

1. Nirenberg, MJ. Dopamine agonist withdrawal syndrome: implications for patient care. Drugs and Aging. 2013;30:587-592
2. Yu, XX, Fernandez, HH. Dopamine agonist withdrawal syndrome: a comprehensive review. Journal of the Neurological Sciences. 2017;374:53-55

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