A differential for lack of spontaneous movement: a case of akinesia from on-off phenomenon in Parkinson's Disease being confused with catatonia

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Learning Objectives

- Develop a wide differential for patients with Parkinson's Disease exhibiting akinesia
- Understand different treatment options for akinesia, based on etiology

Background

- Parkinson's Disease (PD) is a neurologic disease characterized by slowed movement, rigidity, and tremor.
- Akinesia has also been reported in PD. It is defined as the inability to perform a clinically perceivable movement (Ramakrishnan, 2022).
- The differential diagnosis of akinesia in PD is broad, including both psychiatric and neurologic etiologies (Northoff, 2002). This report presents a case of an elderly male with PD presenting with akinesia and mutism.

Patient Information

A 78-year-old male veteran with history of PD on carbidopa/levodopa and psychiatric history of post-traumatic stress disorder and major depressive disorder presented to the emergency room for failure to thrive. Psychiatry was re-consulted for concern of catatonia after a rapid-response where patient was unresponsive.

Past Psychiatric History	Current Psychiatric Medications
• PTSD, Depression. Parkinson's Disease • No history of self-harm • No history of psychiatric hospitalizations • While in military , exposed to agent orange	• Carbidopa/Levodopa: 25 mg/100 mg PO QID @ 6 am, 10 am, 2pm, and 8pm • Citalopram 40 mg daily • Pimavanserin 34 mg daily

Timeline

*BFCRS: Bush-Francis Catatonia Rating Scale

6/21/22: Initial Consult
- **Consult placed for safety evaluation. Found no concerns.**

6/30/22: Unresponsive Episode
- Code stroke called when patient became unresponsive
- NIH stroke scale was 26
- CT/CTA showed no evidence of hemorrhage.
- Ativan 2 mg given with some improvement of mental status

7/03/22: Rule out medical causes
- Neurology ruled out stroke and seizure
- EEG was unrevealing
- Primary team ruled out infectious etiology

7/04/22: Concern for Catatonia
- Reconsulted for concern of catatonia.
- BFCRS* was 8 for immobility, mutism, staring, and withdrawal.
- Following lorazepam challenge, BFCRS scale was 4 for mutism (improved), staring, and withdrawal.
- Due to concern for catatonia, started on lorazepam 1 mg PO daily

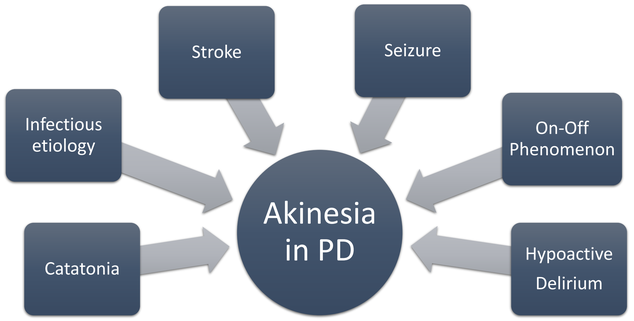
7/06/22: Widened Differential
- Patient scored a BFCRS of 4 for waxy flexibility, automatic disobedience, grasp reflex, and autonomic abnormality.
- Less concern for catatonia due to clinical overlap with PD symptoms.

7/07/22: "On-Off Phenomenon"
- Psychiatry paged for unresponsiveness in the afternoon right before afternoon carbidopa/levodopa dose was due. Patient arousable to sternal rub. On BFCRS, patient scored for mutism.

7/11/22: Discharge Plan
- No further episodes of unresponsiveness and not scoring on BFCRS.
- Discharged with lorazepam taper.
- Neurology recommended long-acting carbidopa/levodopa with follow-up

On chart review of first rapid response, the event occurred between 5 and 6 PM, with last dose of carbidopa/levodopa at 2PM.

Differential Diagnosis



Catatonia	• Behavioral syndrome marked by an inability to move normally despite full physical capacity to do so. The syndrome occurs in the context of many psychiatric and general medical disorders (Fink,2009).
On-Off phenomenon	• A switch between mobility and immobility in levodopa-treated patients, which occurs as an end-of-dose or "wearing off" worsening of motor function or, much less commonly, as sudden and unpredictable motor fluctuations (Bhidayasiri,2012) .
Hypoactive Delirium	• Can include motor retardation, apathy, slowing of speech, withdrawal, and patients appearing sedated. Can occur in the context of a variety of general medical disorders.

Discussion

- This case highlights the complexity of akinesia in PD.
- There are multiple etiologies for akinesia, each requiring different treatment.
- While catatonia may be rare in PD, it is important to consider given its potential severity (Ramesh, 2019).
- When assessing a patient, it is important to assess clinical examination, imaging, labs, medications, and time course of symptoms in relation to medication administration.
- In this case, what appeared to be a positive response to a lorazepam challenge was more likely clinical improvement due to dopaminergic medication, with lorazepam being simply coincident in time.
- Below are some of the treatments listed for each etiology
  - Catatonia: Benzodiazepines and/or electroconvulsive therapy
  - On-off Phenomenon: Adjusting carbidopa/levodopa dose and timing
  - Hypoactive Delirium: Treating underlying medical cause
  - Seizure: May treat with anti-epileptic drugs
  - Stroke: tPa within timeframe and/or anti-platelet agents

Conclusion

This case illustrates an example differential a consultation-liaison psychiatrist could consider when addressing akinesia in PD, including contemplation of both catatonia and on-off phenomenon of dopaminergic medications. Each of these conditions can be debilitating and requires treatment specific to the diagnosis.

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