Candesartan is associated with myalgia and is metabolised by the same cytochrome P450 isoenzyme 3A4 as Donepezil, which led us to suspect Donepezil of potentiating the adverse effect of Candesartan. However, at this stage, it remains a hypothesis.

Key points

- Donepezil needs to be used with care; and pain as an adverse effect needs to be considered.
- Further research into interactions between Candesartan and Donepezil and the role of cytochrome P450 isoenzyme 3A4 is warranted.

Conflicts of interest

None.

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None.

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It was not just a heatwave! Neuroleptic malignant-like syndrome in a patient with Parkinson's disease

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Abstract

Neuroleptic malignant-like syndrome (NMLS) is a rare but life threatening and important complication because of the withdrawal of long-term L-Dopa therapy in Parkinson's disease patients. In this case report, we review the pathophysiology, clinical features and treatment of this curable condition.

Keywords: *neuroleptic malignant-like syndrome, Parkinson's disease, apomorphine, elderly*

Case report

A 76-year-old woman with advanced idiopathic Parkinson's disease was admitted to hospital with aspiration pneumonia. She was treated with intravenous antibiotics and all regular medications including L-Dopa preparations were given through a nasogastric feeding tube at the correct doses and times. Later in the admission, she experienced florid dyskinesias and painful dystonias. Consequently, total daily L-Dopa was slowly reduced from 1,250 to 875 mg, and the dopamine agonist cabergoline introduced.

One hot summer's day, she deteriorated with acute confusion, high fever (41°C), labile blood pressure and marked generalised rigidity. Blood tests confirmed leucocytosis, elevated creatinine kinase (>2,000) and acute renal impairment because of rhabdomyolysis. She was diagnosed with neuroleptic malignant-like syndrome (NMLS) and was promptly given subcutaneous apomorphine for the first 24 h, followed by nasogastric L-Dopa. She recovered within 48 h with simultaneous aggressive cooling, intravenous hydration and antibiotics.

Discussion

NMLS and neuroleptic malignant syndrome (NMS) are clinically distinct entities. NMLS is a rare but life threatening and important complication of the cessation of L-Dopa therapy. It is seen in Parkinson's patients after relative or absolute L-Dopa withdrawal. Postulated pathophysiologic mechanisms include central dopamine receptor blockade, autonomic dysfunction and skeletal muscle hypermetabolism [1]. NMS, in contrast, is the idiosyncratic reaction to antipsychotic drugs.

This patient had deliberate although appropriate and cautiously slow L-Dopa dose reduction to manage the dyskinesias. Additional unpredictable but significant dose reductions were due to poor compliance during the acute illness before admission and inadvertent missed doses due to recurrent nasogastric tube dislocations whilst an inpatient. These factors superimposed on the other recognised triggers such as hot weather, intercurrent infection, stress and general debility that precipitated the episode of NMLS in this patient [2].

An accurate, early diagnosis of NMLS relies on a high index of clinical suspicion. The mainstay of treatment is prompt oral or nasogastric L-Dopa repletion. Apomorphine is an effective and practical alternative when oral medications cannot be administered [3, 4]. Patients should be given supportive care on a high-dependency unit with aggressive cooling, fluid and electrolyte repletion and intravenous antibiotics. Other drugs with clinical efficacy include bromocriptine, dantrolene, amantadine and pulsed steroids [5, 6].

Common complications of NMLS are rhabdomyolysis, renal failure, respiratory failure, sepsis, disseminated intravascular coagulation and seizures. Mortality is 10–30%. Poor prognostic markers include older age, high Hoehn and Yahr stage, higher akinesia score and the absence of wearing off phenomenon before developing NMLS [6].

This case highlights a rare but life-threatening and important complication of the withdrawal of L-Dopa therapy. It emphasises the absolute necessity for strict compliance with L-Dopa treatment at the correct doses and correct times in all Parkinson's disease patients, especially during acute illness and hospital admissions. Early recognition of NMLS relies on a high index of clinical suspicion. Prompt treatment with oral or nasogastric L-Dopa or subcutaneous apomorphine is life saving.

Key points

- NMLS is rare, life threatening and potentially curable.
- NMLS is seen in Parkinson's patients after relative or absolute L-Dopa depletion.
- Triggers for NMLS include poor L-Dopa compliance, poor oral intake or absorption, dose reduction, hot weather, inter-current infection, stress and general debility.
- An accurate, early diagnosis of NMLS relies on a high index of clinical suspicion.
- Prompt L-Dopa repletion or subcutaneous apomorphine and supportive therapy is curative.

Conflicts of interest

None known.

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