CASE REPORT

Hiccoughs—an unusual dyskinetic side-effect of L-Dopa

DANIEL R. COLLINS, PETER WANKLYN

Centre for the Health of Older People, The General Infirmary at Leeds, Great George Street, Leeds LS1 3EX, UK

Address correspondence to: D. R. Collins. Fax: (+44) 113 392 6557. Email: collinsr@ulth.northy.nhs.uk

Introduction

We report a case of persistent hiccoughs occurring with L-Dopa, a previously unreported dyskinetic side effect, which resolved on reducing the dose.

An 80 year-old gentleman with a background history of Parkinson's disease, dementia and stroke was admitted after a fall with increased confusion. Medications on admission included digoxin 0.125 mgs o.d., venlafaxine 37.5 mgs b.d., aspirin 75 mgs o.d. and co-careldopa 12.5/50 b.d. Routine full blood count, urea and electrolytes, thyroid function, B12 and folate were normal, C-reactive protein was elevated at 93 mg/L, and a mid-stream urine confirmed a coliform growth >100 000 ml−1 (sensitive to ciprofloxacin) with a white cell count >50 per high power field. Electrocardiogram showed controlled atrial fibrillation at 60 min−1 and a chest X-ray was normal. He was commenced on oral ciprofloxacin 500 mgs b.d. for 5 days.

He remained confused and agitated with an abbreviated mental test score of 3/10. Computerized tomography confirmed the presence of an established right frontal infarct but was otherwise normal. Because of marked behavioural disturbance he was commenced on risperidone 0.5 mg b.d. but showed marked sensitivity to same with increased rigidity and bradykinesia. This was withdrawn after 24 hours and his agitation managed with lorazepam 0.5 mgs on a p.r.n. basis. A week later he had improved and his agitation had resolved.

Bradykinesia however, continued to impair his rehabilitation and his dose of co-careldopa was cautiously increased to 25/100 b.d. Two days later he developed hiccoughs which persisted for a week. Repeat urea, electrolytes and liver function tests were normal. A repeat ECG revealed no ischaemic change, a chest X-ray showed no signs of infection and there was no sub-diaphragmatic collection evident on ultrasound of abdomen. The dose of co-careldopa was reduced to his original dose and the hiccoughing promptly settled.

Discussion

Hiccough (singultus) is a spasmodic, involuntary contraction of the inspiratory muscles with associated delayed and abrupt closure of the glottis causing an unusual sound [1]. It is usually a transient annoyance but occasionally may be intractable and a sign of serious underlying abdominal or neurological disease. It is frequently reported as a side effect of drug therapy, with benzodiazepines and corticosteroids the drug classes most often mentioned, although insufficient evidence exists to implicate any one agent in its aetiology [2].

The pathophysiology of hiccoughing is still poorly understood and a variety of stimuli seem capable of stimulating the reflex arc, but the location of the hiccough centre and neurochemical mechanisms involved are still unknown. The efficacy of anti-dopaminergic agents such as chlorpromazine [3], haloperidol [4] and metoclopramide [5] in treating hiccoughs suggests an important role for dopamine in the reflex pathway, although the dopamine antagonist perphenazine has also been reported as a cause [6]. Reports of hiccoughs as a complication of posteroventral pallidotomy used to treat Parkinson's disease [7] and the anti-parkinsonian agent amantadine as an effective treatment of intractable hiccoughs [8], also suggest that dopaminergic pathways are important in the reflex.

To our knowledge this is the first reported case of hiccoughs as an apparent dyskinetic side-effect of L-Dopa therapy in Parkinson's disease. There was no other obvious cause for the persistent hiccoughing, though another benzodiazepine, midazolam has variously been associated with both causation [9] and cure [10] of hiccoughs. There are features of this case however, to suggest that this gentlemans' Parkinsonian state could also have a vascular or Lewy body aetiology.
and that this reaction to L-Dopa could therefore be somewhat atypical.

**Key points**
- Changes in prescriptions should always be considered as a cause of ‘new symptoms’ in an elderly person.
- Dopaminergic drugs can cause hiccoughs and Parkinsonian patients may be more susceptible to this as a form of dyskinesia of L-Dopa therapy.

**References**