

Parkinson's Management During Hospitalisation:

A 3-year multi-centre retrospective audit of medication errors

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Background

Admission to hospital introduces risks for people with Parkinson's disease in maintaining continuity of highly individualized medication regimens. This is of particular concern as omitted medications and irregular dosing can cause an immediate increase in an individual's symptoms as well as other adverse outcomes such as swallowing difficulties, aspiration pneumonia, frozen gait and even potentially fatal neuroleptic malignant type syndrome.

Objectives

To determine the occurrence and identify factors that contribute to Parkinson's medication errors in Australian hospitals.

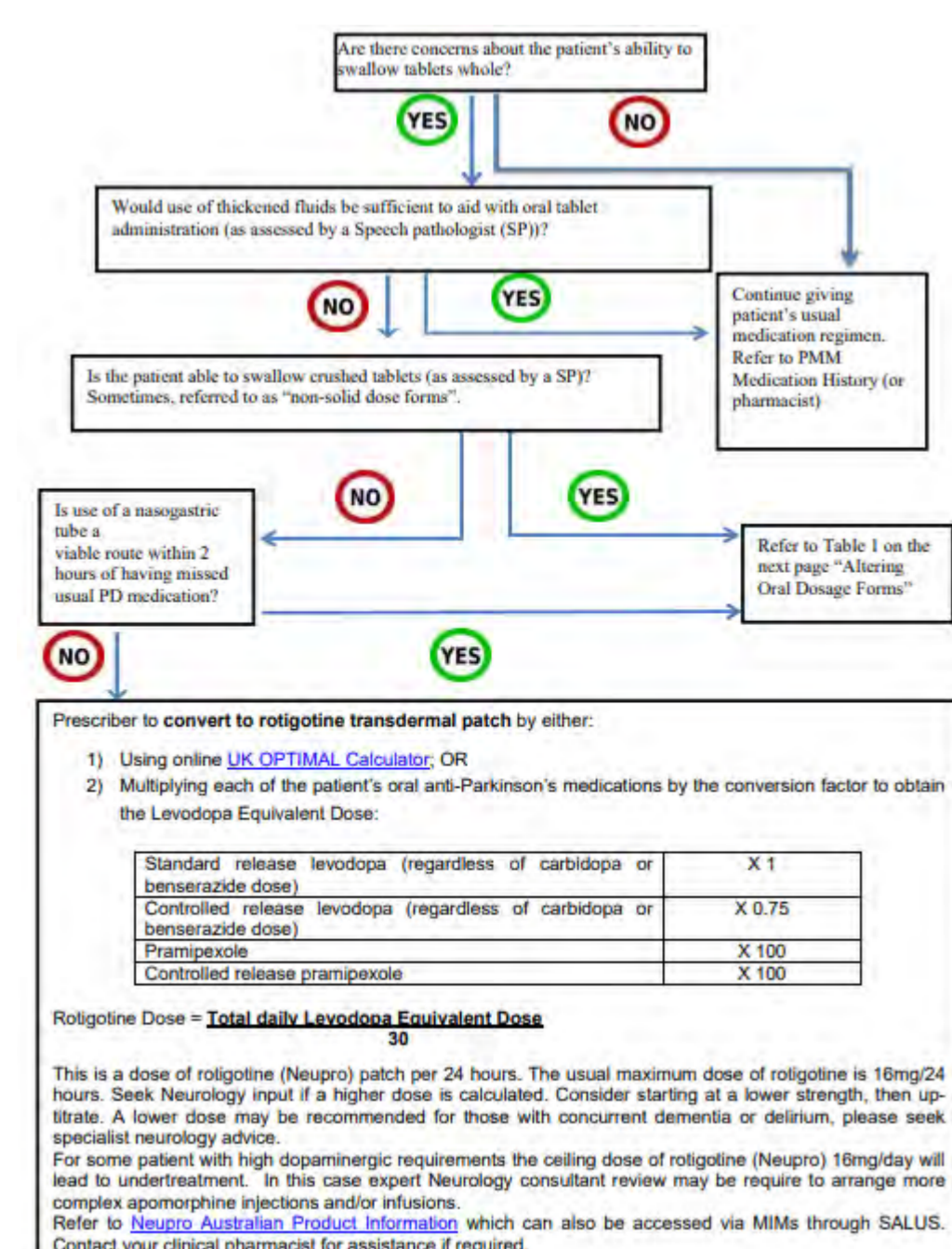
Methods

A retrospective discharge diagnosis code search identified all admissions for people with Parkinson's disease to three tertiary metropolitan hospitals in South Australia, over a 3-year period. Of the 405 case notes reviewed 351 admissions met our inclusion criteria.

Study cohort

Patient Characteristics	Study Group (n = 351)
Age in years, median (range)	79 (36–98)
Male, n (%)	1. (62)
Length of stay in days, median (range)	6 (1–71)
Previous residence listed as Nursing Home, n (%)	104 (30)
Pharmacist led medication history completed	
Yes, n (%)	266 (76)
Completed more than 24 hours after admission, n (%)	152 (43)
LED ^a of treatment regimen in mg, median (range)	663 mg (75–3800)
Modified swallow status or nil by mouth during admission, n (%)	101 (29)

^aLED = Levodopa Equivalent Dosage.



Type and Frequency of errors Charting and Administration

Type of incident	Prescribing errors	
	n	%
Incorrect dosage	25	14.5
Incorrect timing	103	59.5
Omission error	26	15
Wrong medication	4	2.3
Wrong formulation	8	4.6
Wrong strength	7	4

Total number of medications prescribed was n = 568, of those n = 173 had prescribing errors.

Type of incident	Administration errors	
	n	%
Omission error	1125	55.9
Dosed early	93	4.6
Delayed dose	763	37.9
Wrong order	32	1.6

Total number of administration errors n = 2,013.

Results

Medication prescribing (30.5%) and administration (85%) errors during admission were extremely common, with the most frequent errors related to administration of levodopa preparations (83%).

The greatest factors to influence the risk of medication errors were:

- 1) higher levodopa equivalent dosage,
- 2) patients with a modified swallowing status or nil by mouth order during admission,
- 3) patients who did not have a pharmacy led medication history within 24 hours of admission

These patients had a significantly higher risk and rate of Parkinson's related medication errors during hospitalisation.

Discussion

This study identified 3 major independent factors that increased the risk of errors during medication management for people with Parkinson's disease during hospitalization.

Targeting these areas for preventative interventions have the greatest chance of producing a clinically meaningful impact on the number of hospital medication errors occurring in the Parkinson's population.