

Laura J Wu, MD, PhD, Constance T Ward, MSN, RN, Suzanne Moore, BA,
Jyhong Gabriel Hou, MD, PhD, Naomi Nelson, PhD, RN, Linda Fincher,
BSN, RN, Farah Atassi, MD, MPH and Eugene C Lai, MD, PhD.

**Parkinson's Disease Research, Education and Clinical Center
(PADRECC), Michael E. DeBakey Veterans Affairs Medical Center
Baylor College of Medicine, Houston, Texas**

Objective:

In this study, we review the medical care and the medication schedule compliance in hospitalized patients with Parkinson's disease (PD).

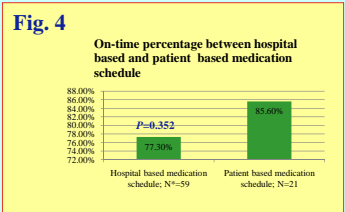
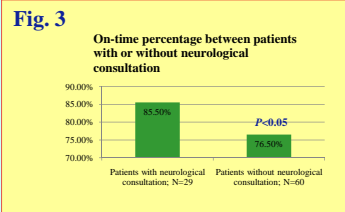
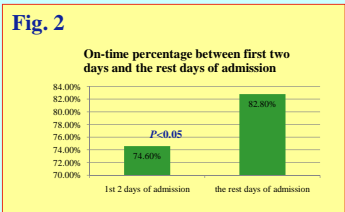
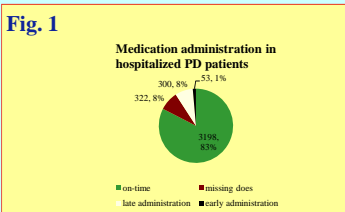
Background:

In PD patients, dosing and timing of all Parkinson's medications should be individualized. Particular attention should be focused on maintaining a strict medication schedule. Failure to administer medications on time may have undesirable impact on these patients and decrease the quality of patient care. In addition, there are many contraindicated medications that should not be prescribed to PD patients or combined with Parkinson's medications.

Design/Methods:

The electronic medical records of 100 patients with parkinsonism and hospitalized at the Michael E. DeBakey VA Medical Center from fiscal years 2002 to 2004 were reviewed. Patients with uncertain diagnosis or with admission duration shorter than 48 hours were excluded from the study. Mann-Whitney test was used to test the on-time percentage between different groups.

Table 1 Patient demographic	
Age	76.17 ± 7.6 years (range: 51.4-90.7)
Gender	Men: 96.6 % (N=86) Women: 3.4 % (N=3)
Race	White: 77.5% (N=69) Black: 19.1% (N=17) Hispanic: 3.4% (N=3)
Hospital stay	8.21± 5.40 days (range: 2-21)
Daily doses of PD medications	5.26±0.11 (range: 1-19; medium: 4.0±3.0)
Reasons for admission	Infection: 23.6% (N=21) Vascular diseases : 12.4% (N=11) Change in mental status: 11.2% (N=10) Gastrointestinal diseases: 7.9% (N=7) Malignancy: 7.9% (N=7) Orthopedic conditions: 6.7% (N=6) Metabolic disorders: 6.7% (N=6) Others: 23.6% (N=21)



Results:

1. A total of 89 patients were eligible to be analyzed in this study. Patient demographics were shown in Table 1.
2. A total of 3873 doses of Parkinson's medications were prescribed. 675 (17.4%) incorrect medication administrations were found. 322 were for missing doses. 300 were for giving medications late by more than 30 minutes. 53 were for giving medications too early by 30 minutes (Fig 1). Only six (6.7%) patients received their medication completely on time during their entire hospitalization time.
3. The on-time percentage for the first two days of admission was significantly lower versus the on-time percentage for all subsequent days (74.6 % vs. 82.8%; $p<0.05$; Fig 2).
4. The percentage of taking medications on time was higher in patients who had neurological consultations compared to patients without consultations (85.5 % vs. 76.5%; $p<0.05$; Fig 3).
5. The percentage of taking medications on time (85.6%) was higher in patients who had a patients-based medication schedule when compared to patients who had a hospital -based medication schedule (77.3%) . However, there was no statistically significant difference between these two groups (Fig 4).
6. Nineteen (21.3 %) patients were prescribed medications that could potentially worsen parkinsonian symptoms such as antipsychotics, antiemetics and antidepressants.

Conclusions:

The most frequent incorrect medication administration in hospitalized PD patients was missing doses followed by late administration. The incidence of incorrect medication administration was higher in the first two days of hospitalization. The percentage of patients taking medication on-time was higher in those who was seen by a neurologist and in those who were allowed to follow a more flexible medication schedule. More than one-fifth of hospitalized PD patients were prescribed with medications that might worsen their symptoms.