



MEDICATION ADMINISTRATION IN THE MANAGEMENT OF PARKINSON DISEASE

A Position Paper Prepared by the Michigan Parkinson Foundation
Professional Advisory Board: May 2013

Persons with Parkinson disease (PD) consistently do not get their medications appropriately while hospitalized or in long term care facilities. Long-standing difficulties experienced center around the timing of medication administration and receiving drugs which interact with PD medications. The Professional Advisory Board of the Michigan Parkinson Foundation has studied this issue and joins several national and international Parkinson's disease organizations in recommending the development of programs and procedures to address care in these settings.

Thus far, the focus of programs to address these issues has targeted education of people with PD and their families to advocate for themselves when entering hospitals or long-term care facilities. This form of advocacy may assist in averting problems but does not address the root causes, which can add unnecessary stress to vulnerable individuals and families by forcing them to advocate for their own care. The Professional Advisory Board recommends that institutional level care should consider the following:

1. Insure that the Parkinson medications are ordered with the timing of administration consistent with the regimen previously designed for each patient.
2. Insure that procedures are in place to insure that medications are administered within a critical period of time (typically, a 30-minute window) for optimal effectiveness.
3. Insure that drug known to interact with anti-Parkinsonian medications be avoided (or at least minimally used).

Background

Parkinson's disease is a chronic and often progressive neurological disorder with no known cure. However, appropriate management through carefully selected and timed medications, as well as the inclusion of exercise and rehabilitative therapies, can help to control most motor features such as tremor, slowness of movement, and rigidity of limbs and trunk. Medication, rehabilitative therapy and exercise can significantly improve the quality of life of most PD patients.

Medications are usually individualized and for many patients, timing of administration is critical. This is especially true for levodopa, the mainstay of Parkinson's disease treatment. Levodopa has a short duration of action (sometimes less than 3 hours per dose). Periodic changes in the

treatment regimen are sometimes necessary. For some individuals with PD, a change in the regimen (i.e., changing the medication, timing, or medication interactions) can seriously interfere with the effectiveness of symptom management. Optimal scheduling of the specific regimen varies from person to person. For many people, it is psychologically distressing to be under-medicated even for relatively short period of time. This problem can be avoided by giving medications on time, which often involves anticipating the wearing off of a dose by giving the next dose even before Parkinsonian symptoms are experienced. There are also problems with potential side effect symptoms of administering sequential doses too close together. In addition, drug interactions with medications sometimes prescribed in hospital and long term care settings have the potential of worsening PD symptoms, such as hallucinations. Thus, the medication regimen must be carefully chosen and administered.

The National Parkinson Foundation recently conducted a survey of their centers and found that 75% of hospitalized PD patients fail to receive their PD medications appropriately, and as a result, their care and management was often compromised (Okun, 2010., Chou, et. al, 2007; Simonson, et. al., 2007). These studies documented that errors in “timely” medication administration in hospital settings can lead to discomfort as well as sub-optimal clinical outcomes.

Internationally, several organizations have addressed the issue of medication timing in hospitals and long-term care facilities. Parkinson’s disease associations in the United Kingdom, Canada, and New Zealand have developed programs called “Get It On Time” to educate persons with PD to advocate for themselves. The country-wide Canadian campaign utilizes creative methods to encourage physician and staff education about appropriate medication management, including posters, medication “cards,” pamphlets, stickers, folders and surveys (Snelgrove, B., 2012). The National Parkinson Foundation has initiated a program called “Aware in Care,” to tailor this program to the US (Awareincare.org), which includes a kit for people with PD to take with them to hospitals.

The Parkinson Center at Oregon Health & Sciences University developed a form, “Critical Information for Caring for the Parkinson Patient,” (OHSU Parkinson Center, 2007) which the MPF Professional Advisory Board reviewed and approved for distribution in Michigan. Prior to admission to a hospital or long term care facility, this group recommended that both the neurologist and patient complete the detailed form. The document provides rationale to enable healthcare staff caring for the PD patient in the hospital or long-term care facility to fully understand how to optimize care with medications. For example:

“I must be given my medication(s) promptly at the times specified...
The timing of my medication is very important to help minimize my symptoms and ‘off’ times.
For example: Sinemet often should be taken 30 minutes prior to or one hour after meals, because a meal sometimes delays the levodopa from reaching the brain.”

Note: For some individuals , the quantity of protein in a meal (or the meal itself) can partially compete with absorption of levodopa (the active ingredient of Sinemet) in its G.I. uptake. While this may not be important for all patients, it should be explored as a means for optimizing responsiveness to levodopa, especially in patients with dose-by-dose variability in medication effect. This is another example of variability in medication effects.

It is well-recognized that timing of medication within healthcare institutions can be problematic. Laura Stokowski, RN, writing for *Medscape* (2012), reported that the Institute for Safe Medication Practices examined a large survey of 17,500 hospital nurses, and found that enforcing the “30-minute rule” (a general rule for medication administration to allow for some leeway in which medications can be administered) for all medications tended to be “impossible and largely unnecessary.” Center for Medicare/Medicaid Services recognized the difficulty in enforcing the “30-minute rule” and has modified its guidance on timely medication administration to take into consideration special needs. According to Stokowski (2012), CMS now requires that:

Hospitals establish total windows of time that do not exceed the following:

- Scheduled medications, identified under the healthcare institution’s policies and procedures, as time-critical must be administered within thirty minutes before or after their scheduled dosing time, for a total window of 1 hour.)
- Medications prescribed more frequently than daily but no more frequently than every 4 hours may be administered within 1 hour before or after the scheduled dosing time, for a total window that does not exceed 2 hours.
- Medications prescribed for daily, weekly or monthly administration may be within 2 hours before or after the scheduled dosing time, for a total window that does not exceed 4 hours.

Thus far, medications to treat Parkinson disease have not been identified as falling under time-critical schedules. At this point in time (2013), several neurologists on the Michigan Parkinson Foundation Professional Advisory Board have worked with the Pharmacy and Therapeutics Committees in their hospitals to incorporate the 30-minute rule with patients diagnosed with Parkinson’s disease. Feedback is anticipated in the near future.

Conclusions

Managing medication regimens to optimally treat Parkinson’s disease during hospitalization or in a long term care setting can be challenging. The inability of an individual to be able to have his/her carefully-manipulated regimen followed while in these settings complicates management and interferes with optimal quality of life in coping with this disorder. The Professional Advisory Board of the Michigan Parkinson Foundation encourages the development of policies and procedures to optimize the ability of a person with Parkinson’ disease to receive consistent care in order to maximize recovery from illness and achievement of optimal health.

Recommendations

Specific actions that are recommended include:

1. Medication regimens need to be consistent with that prescribed by the patient’s neurologist or attending physician.
2. The prescription for Parkinson’s disease medications by attending physicians should include specific times of administration to be followed by healthcare staff
3. Medication administration policies should be incorporated that maximize timely administration of Parkinson disease medications, such as use of the 30-minute “window.” Rational default times should be considered for PD medications, such as levodopa. As an example, procedures could be

considered for PD meds to default to 8-12-4-8 unless specifically ordered by the physician.

4. Methods by which non-formulary Parkinson's disease medications be made available to hospitalized patients should be incorporated, including modified self-administration.
5. Policies/procedures involving self-administration of medications, such as with presence of family or advocate, should be considered.
6. Pharmacy review procedures should include methods to minimize the potential for drug interactions. Potential problem areas include use of some anti-psychotics, anti-nausea, or pain medications.
7. Arrangements should be made for consultation between an anesthesiologist and neurologist in planning for surgery, because pain medications may have interactions with Parkinson's disease medications causing confusion, hallucinations, or agitation.

The Michigan Parkinson Foundation encourages health institutions to utilize and develop programs to educate healthcare staff on the specifics of managing Parkinson disease and will be taking the following steps:

1. Utilize funding from Raymond B. Bauer, MD Research Award to study patient care issues in hospitals and long term care facilities for a specified time.
2. Develop and use sustainable educational materials and programs centering on these issues.
3. Develop collaborative efforts with health organizations and institutions to educate and develop procedures promoting optimal care for people with Parkinson's disease.

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