Drug tapering schedules may titrate up medication errors

By Amanda Chen and Certina Ho

"Drug tapering" is a common technique used in practice to gradually discontinue or reduce a therapeutic dose of a drug over a period of time. Its use is most applicable when preventing adverse withdrawal reactions with the sudden stop of certain medications. It also allows for early detection or return of condition/symptom(s) being treated. Conversely, the term "drug titration" refers to the incremental increase in dose to a level that provides desired therapeutic effects. Both tapering and titrating processes are warranted in a variety of clinical scenarios to help increase therapeutic tolerability and overall patient comfort. However, they are often complex in nature, involving multiple doses of medication(s), extensive directions of use and complex mathematical calculations. In addition, the lack of standardized tapering guidelines in current practice may explain the fact that a wide variety of unique tapering regimens are prescribed that do not follow a homogenous, consensus-based pattern. As such, it becomes rather challenging to assess the appropriateness of these medication orders with respect to efficacy, safety, and tolerability for the patient. All of these considerations illustrate the vulnerability of drug tapering to medication incidents that may occur at any stage of the medication-use process, be it at the prescribing, order entry, dispensing, administration, and/or patient monitoring level.

National medication incident reports collected from the Community Pharmacy Incident Reporting (CPhIR) program, which is operated by the Institute for Safe Medication Practices Canada (ISMP Canada) has revealed some interesting trends in medication incidents associated with the drug tapering process. Specifically, four major themes, all of which are potential contributing factors for drug-tapering errors, were identified after data analysis, as shown below and in Table 1.

Lack of Standardized Tapering Guidelines – Standardized, pre-printed order forms for drug tapering prescriptions should be considered in order to encourage complete and accurate communication of information between physician, pharmacist, and patient.

Inadequate Patient Counseling – Providing patients with a tapering schedule tool (i.e. personalized calendar or booklet) for their reference, may be beneficial to clarify confusing and extensive directions of use. This should be done in conjunction with adequate face-to-face counseling, education and follow-up.

Operational Limitations – A helpful feature of the pharmacy order entry queue would be an "extended labeling" function, where directions longer than the standard spacing restrictions would automatically populate into this new interface. The full directions would then be entered, printed, and affixed to the prescription vial. Similarly, during order entry, the pharmacy dispensing system could support an interface for "chained" or "linked" prescriptions, where the total drug tapering schedule is entered sequentially with start and stop dates automatically populating as directions, durations, and quantities are entered. Another benefit of this feature is that it only allows prescriptions to be filled in a sequential order, that is, prescription in the middle of the chain cannot be selected to be filled.

Complexity of Prescription – Independent double checks should be performed for each prescription during the order entry and dispensing process. More specifically, rules and policies in the pharmacy should be implemented to increase awareness and conscientiousness during the prescription preparation process. For example, calculations should be documented by both the order entry staff as well as the independent double-checker to enhance accuracy.

Drug tapering can be a very long and arduous process fraught with confusion, miscommunication and medication errors involving all levels of patient care that encompass roles led by physicians, pharmacists, nurses, caregivers and patients alike. Learning from medication incidents and identifying potential systems-based contributing factors and areas of vulnerability are imperative steps in paving way for future developments in quality improvement initiatives at the local, provincial and national levels.

THEMES	SUBTHEMES
Lack of Standardized Tapering Guidelines	• Prescribing error • Miscommunication
Inadequate Patient Counseling	• Cross-taper • Multi-medication compliance aids
Operational Limitations	• Labeling restrictions • Billing restrictions
Complexity of Prescription	• Calculation error • Transcribing error • Wrong selection of prescription to be filled • Prescription preparation error

Table 1 – Themes and Subthemes of Potential Contributing Factors for Drug-Tapering Errors

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