

Lessons learned from medication incidents related to direct oral anticoagulants

By Jim Kong, Nusrat Amin, and Certina Ho

Direct oral anticoagulants

Since their entry into the drug market, direct oral anticoagulants (DOACs), such as apixaban, rivaroxaban and dabigatran, have become the new trend in providing anticoagulation for patients without complicated dosing regimens and monitoring parameters that have been traditionally expected from other anticoagulants like warfarin. DOACs are indicated for various types of thromboembolic disorders, and are regularly used in the community settings due to their ease-of-dosing and convenience factors. However, unintentional misuse of DOACs may cause serious medication errors, putting patients at risk of unnecessary harm; and in severe cases, life-threatening conditions.

Medication incidents involving DOACs were extracted from the ISMP Canada Community Pharmacy Incident Reporting (CPhIR) program between January 2010 and April 2015. 145 incidents were retrieved; 109 of them met inclusion criteria and were included in this qualitative, multi-incident analysis. A total of four major themes were derived from this analysis.

Look-alike/sound-alike medications

Look-alike/Sound-alike medications refer to drug product names that have similarities phonetically and/or visually. Anti-thrombotic agents are considered as high-alert medications in patient care settings. In this multi-incident analysis, drug names such as Pradaxa® (Dabigatran) and Plavix® (Clopidogrel) were reported to be mixed up by healthcare providers. To prevent these medication incidents, healthcare practitioners are encouraged to include both brand and generic names on prescription orders. Tallman lettering is another method that can be considered in pharmacy inventory or patient care areas to help practitioners differentiate look-alike/sound-alike drug names.

Drug-drug interactions

This multi-incident analysis found that drug-drug interactions related to DOACs were prevalent, especially when patients were transferred from one healthcare setting to another. A key contributing factor to these drug-drug interactions was the lack of comprehensive medical and medication reviews when patients were discharged from hospitals to the community settings. This information gap in the transition of care may have placed the patient at risk for potential harm. Another possible contributing factor involved a lack of drug-drug interaction screening at the dispensing pharmacy. There were also potential failures to inactivate discontinued conventional anticoagulation therapy (e.g. warfarin) from the patient's medication profile, which then led to a duplication of drug therapy.

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Transition of care

A lack of systematic communication process or approach interfacing different healthcare institutions may put patients at risk of various types of medication incidents during transition of care. To address this issue, ISMP Canada recommends establishing an institutional-wide policy for healthcare professionals to conduct a Best Possible Medication History (BPMH) at each stage of patient care, such as admission, transfer, and discharge. A BPMH will facilitate an accurate and comprehensive medication history to be communicated among all healthcare providers within the patient's circle of care. This will also allow for transparency and seamless care where medication incidents, such as duplication of drug therapy or drug-drug interactions, can be prevented.

Intricacies in dosing and frequencies of DOACs

Traditionally, warfarin dosing regimens presented a complex schedule for patients to follow and healthcare professionals to monitor; and DOACs were meant to mitigate such complexities. Nonetheless, initiating a patient on DOACs or switching patients from warfarin to DOACs may still be challenging for healthcare professionals who are not familiar with the unique properties of DOACs. Several factors contributed to this category of medication incidents include practitioner's confusion between unique dosing regimens versus standard regimens of DOACs, and their lack of experience when switching from warfarin to DOACs. Standardized treatment or dosing protocols that succinctly outline how to use DOACs based on indication and patient parameters may be helpful to prevent these types of incidents.

Take-home message

DOACs are a relatively new class of anticoagulants that provide exceptional benefits to patients when used appropriately. Open communication and dialogue between patients and healthcare professionals should always be encouraged. Continuous professional development for prescribers and pharmacists on new approaches to medication therapy management and the practice of Best Possible Medication History at the transition points of care are critical for patient-centered care. A blame-free patient safety culture together with regular reporting and analysis of medication incidents will help address systematic vulnerabilities and further improve the safe use of DOACs in all healthcare settings. ■

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