

Safeguard Against Errors with Long-Acting Oral Narcotics

ISMP Canada has received 22 reports of medication errors demonstrating confusion between the long-acting formulations of oral narcotics and the regular release formulations for the same drug. The products involved were hydromorphone, morphine, and oxycodone. This bulletin highlights three examples and provides some suggested safeguards to prevent errors and reduce the risk for harm.

A hospital's surgical short stay unit includes oxycodone 10 mg (Oxy-IR[®]) in the narcotic stock inventory. The pharmacy department inadvertently supplied the nursing unit with long-acting oxycodone 10mg (OxyContin[®]). Nurses working on the unit were unfamiliar with the different dosage formulations and administered the long-acting product to several patients before the error was discovered. None of the patients were harmed as a result of the error.

A 68 year-old cancer patient's pain was well controlled with oral hydromorphone 12 mg scheduled every 4 hours, with additional prn doses for breakthrough pain. In an effort to improve convenience for the patient, the hydromorphone order was changed to the long-acting formulation: Hydromorph Contin[®] 36 mg po q12h. It was noted, however, that pain control was not as effective and the order was changed back to the original regimen: **hydromorphone 12 mg po q4h**, with prn doses for breakthrough pain. Pharmacy entered this order incorrectly as **Hydromorph Contin[®] 12 mg po q4h**. A pharmacy-generated medication administration record (MAR) reflected the incorrect drug entry. Nurses working during the next two days identified the incorrect drug on the MAR and manually corrected the entry to read hydromorphone. However, on the third day, the discrepancy was not noticed and three doses of the Hydromorph Contin[®] were administered within a 10-hour time period. Although the patient's clinical outcome was not affected, the medication error was disclosed to the patient's family. It was the patient's family wish that the error information be shared to alert hospital staff. The attending physician decided to report the error to ISMP Canada so that learning could be shared with additional Canadian hospitals.

The following event published in our February 2002 issue of the ISMP Canada Safety Bulletin is worth

repeating. A patient was ordered long-acting oxycodone, **OxyContin[®] 20 mg po q8h**. The order, although entered by pharmacy as q8h, was transcribed by clerical staff to the nursing MAR as OxyContin[®] 20 mg po **q3h**. The nurse checking the MAR entry did not identify the error. Because the medication was a floorstock item in the hospital, the difference in order interpretation by nursing and pharmacy was not apparent. Several doses of OxyContin[®] were given and the patient became unresponsive. Naloxone was administered to reverse the opiate effects.

Included in the error reports submitted to ISMP Canada were the following **contributing factors**, as identified by hospital analyses and review processes:

- Labelling of pharmacy re-packaged products did not emphasize the distinction between the regular release and the long-acting oral narcotics;
- Lack of awareness of the significance of long-acting narcotic formulations and their usual dosing regimens;
- Similarity in names between short-acting and long-acting preparations;
- Pharmacy computer order entry allowing for inappropriate dosing intervals for long-acting medications;
- Lack of effective communication between nursing and pharmacy when discrepancies occur between the medication administration record and pharmacy order interpretation; and
- Name descriptions in the Compendium of Pharmaceuticals and Specialties (CPS) do not include the formulation description such as "extended release" next to the brand name or generic name listed at the top of the monograph. (ISMP Canada is working with the Canadian Pharmacists Association to review options for improving the presentation of information when product line extensions include regular release and extended release products in the CPS).

System safeguards that can help prevent similar errors include:

- Ensure that labelling of long-acting preparations clearly identifies "CONTROLLED RELEASE" or "EXTENDED RELEASE" in uppercase or large type size. Since narcotics are often stored as floor-stock in many hospitals, the label on the product is a critical opportunity to alert nursing staff. Several hospitals reporting errors with oral

narcotics indicated that they have made improvements to the labelling. For example, one of the hospitals uses brightly coloured “LONG-ACTING” auxiliary labels for all long-acting oral narcotics.

- Use selective uppercase lettering and large type in the description field of the drug name in computer order entry systems, e.g., to emphasize “CONTROLLED RELEASE”, and thereby provide an alert during the order entry process.
- Include both the generic name and brand name when writing orders and labelling re-packaged products to help differentiate between the regular release and extended release products.
- Build the default dosing frequency for long-acting drugs in the order entry application. In most systems order sets with pre-defined frequencies can be built into the pharmacy order entry system. Alternatively, the default dosing frequency for long-acting narcotics can be set

(e.g., q12h), or a warning message that provides the recommended dosing interval can appear on the order screen.

- Educate staff about the potential for confusion between immediate and extended release products and the differences in dosing regimens. One of the reporting hospitals created a chart of formulary narcotics and the recommended dosing intervals. The chart is placed on the medication administration record holder.
- Review the mechanisms in place to identify and resolve discrepancies between pharmacy order interpretation and nursing order interpretation.
- Monitor the patient frequently, including the overnight hours. Assess respiratory rate and depth (quality) prior to stimulating the patient. Observe for changes in level of patient consciousness.

LOOK-ALIKE PRODUCT ALERT



Bacteriostatic Sodium Chloride 0.9% (Abbott)
30 mL
Actual Size: 3.5 cm x 7 cm



Magnesium Sulfate 500 mg/mL (PPC)
10 mL
Actual Size: 3.25 cm x 6 cm

A hospital has reported a ‘near-miss’ where magnesium sulfate was almost administered instead of sodium chloride 0.9% as a flush solution. As shown above, both vials have identical orange-coloured plastic tops and similar hard plastic containers.

Options to prevent substitution errors with these products include:

- (1) Select vendors so that the products stocked by the hospital are not similar;
- (2) Eliminate vials of magnesium sulfate from patient care areas where possible (e.g., dispense through a CIVA program); and
- (3) Avoid using multi-dose bacteriostatic sodium chloride 0.9% for the purpose of a saline flush. Consider instead, the use of sodium chloride 0.9% injection in single-use vials or single-use syringes.

ISMP Canada is a national voluntary medication incident and ‘near miss’ reporting program founded for the purpose of sharing the learning experiences from medication errors. Implementation of preventative strategies and system safeguards to decrease the risk for error-induced injury and thereby promote medication safety in healthcare is our collaborative goal.

To report a medication error to ISMP Canada: (i) visit our website www.ismp-canada.org or (ii) email us at info@ismp-canada.org or (iii) phone us at 416-480-4099. ISMP Canada guarantees confidentiality and security of information received. ISMP Canada respects the wishes of the reporter as to the level of detail to be included in our publications.