Two forms of methylprednisolone: one not for IV use

In the past 5 years, more than 50 mix-ups between methylprednisolone acetate (DEPO-MEDROL) and methylprednisolone sodium succinate (SOLU-MEDROL) have been reported to ISMP and others. While both forms of the product are used to treat inflammation, the doses may differ, and the acetate form should never be administered IV.

In one case, methylprednisolone sodium succinate 40 mg IV was prescribed generically for a 3-year-old child, but he was almost given methylprednisolone acetate IV instead. The nurse had accidentally selected the wrong drug from an automated dispensing cabinet (ADC). Methylprednisolone acetate 40 mg was the first form and strength of the drug that appeared on the ADC screen. The nurse selected this first entry instead of the correct drug, methylprednisolone sodium succinate. While entering the order into the pharmacy computer, a pharmacist noticed that the wrong drug had been taken from the cabinet and alerted the nurse before it was given.

Another 3-year-old child with a recent organ transplant did receive the wrong drug. In this case, a daily outpatient infusion of Solu-Medrol 140 mg had been prescribed for the child. The first dose was to be administered in the ED on a Saturday when the pharmacy was closed. A nursing supervisor accidentally brought a box to the ED containing four vials of Depo-Medrol, each 40 mg. The ED nurse checked a drug reference text and found that Solu-Medrol and Depo-Medrol both contained methylprednisolone. She wrongly assumed that both medications were equivalent brand name products for "methylprednisolone" and administered Depo-Medrol 140 mg in 50 mL of saline IV to the child over an hour. The child's mother uncovered the error the next day by noticing that the medication given the day before looked cloudy in comparison to the (correct) dose that day. Fortunately, the patient did not experience adverse effects. However, the drug's manufacturer, Pfizer,* has received reports of adverse reactions, some severe, due to IV administration of Depo-Medrol.

In these cases and others, the nurses never noticed the warning on the vial, "Not for IV use," as the print is very small and poorly visible (see photo). We had previously contacted Pfizer and FDA about this labeling problem. Another factor has been that nurses did not know that different chemical compounds of a drug can have vastly different pharmaceutical properties. Usually, there is no problem with ignoring the full chemical name of a drug because there is often just a single formulation. The medication administration record (MAR) or label might not even include the extender (e.g., hydrochloride not listed after tetracycline). But for some drugs, such as methylprednisolone acetate and sodium succinate, the difference can be clinically significant. Some mix-ups have also been caused by inadequate space in the drug name field on computer-generated MARs, which led to partial listings of methylprednisolone without all or part of acetate or sodium succinate. See check it out! to the right to help prevent these types of mix-ups.

*Pfizer has acquired Pharmacia & Upjohn.
Look for unexpected hazards with chemicals

Nurses play an essential role in identifying hazardous situations before accidents occur. Chemicals used during the care of patients are one source of hazards that may be overlooked, as the following event reveals.

A 3-year-old child attempted to drink a cup of phenol, but spilled it down the front of his face and chest, sustaining immediate pain and irritation to the lips, chin, chest, and abdomen. An ENT resident working in a hospital clinic had poured about 1 mL of phenol (89%) into a cup and placed it on the counter in an exam room where he was preparing to perform a myringotomy on the child’s mother. Phenol is used to anesthetize the tympanic membrane. The child was still able to grab the bowl and place it to his lips before spilling its contents over his mouth and chest. The involved areas were quickly flushed with water and the child was transferred to a local children’s hospital, where examination revealed erythema and whitish areas of sloughed-off dead tissue (eschar) on the oral mucosa of the lower lip, the chin, neck, anterior chest, and upper abdomen. The child also underwent an endoscopy and bronchoscopy to ensure there was no further harm to his airway and esophagus.

Prior to the accident, the hospital’s ENT clinic had been receiving phenol in bulk containers necessitating the pouring into an open cup for use. Since the event, the hospital pharmacy now supplies the clinic (and ED) with unit-dose phenol applicator kits (from Apdyne), which reduces the potential for unintended exposure to this harsh chemical. Additionally, children (unless being treated) are no longer allowed in treatment rooms.

Look around your treatment areas for potential hazards like this. Also, talk to your pharmacists (or lab/central supply staff) about reducing the risk of patient harm by supplying as many potential hazards like this. Also, talk to your pharmacists (or lab/central supply staff) about reducing the risk of patient harm by supplying as many chemicals as feasible in child-resistant containers or unit-dose applicators.

nicecatch

“Tuck” this one away. A nurse found an unlabeled, wrapped suppository in her patient’s medication cassette. Appropriately, she returned it to the pharmacy. As it turns out, it was the correct drug, TUCKS, a topical starch hemorrhoidal suppository, for her patient. This product is labeled such that only alternating suppositories are labeled with the name, address, and website of the manufacturer, Pfizer. Each box contains two strips of six suppositories. While each individual suppository is labeled with a lot number and an expiration date, only three in each strip are labeled with the product name (see photo). If dispensed individually as unit doses, three of the six suppositories will not be labeled with the product name. ISMP has contacted Pfizer about this problem, as well as another problem with their product.

Tucks suppositories used to be called ANUSOL. It was re-branded about a year ago. In the upper right corner of some boxes is a prominent statement, “Formerly Anusol.” Of course, Tucks has been a registered trademark associated with topical witch hazel products (pads, topical gel) for decades. Using this trademark for the Anusol line of products has caused confusion, especially in post-partum settings and outpatient settings where both product lines are commonly used.

If your patients typically use these suppositories, ask pharmacy to apply auxiliary labels to clearly note the drug name and route of administration. As this nurse did, if anything is unlabeled or unmarked, return it to the pharmacy for proper identification. If you use both the topical Tucks products and the suppositories, be sure to specify the active ingredients and route of administration on medication administration records. When appropriate, alert patients to the differences between the various products that now use Tucks as a trademark.

safetywire

Don’t foil a patient’s chance for success. There’s a good chance you’ve heard the story about a patient who received a prescription for rectal suppositories but inserted them, foil-wrapping and all, because no one said to remove the foil first. Similarly, patients might swallow still-wrapped oral unit-dose products. In the ambulatory setting, if you expect patients to unwrap unit dosages themselves and use the drug properly, patient education is extremely important. However, accidents have also happened to hospitalized patients, when patients were handed unit-dose packages without explicit instructions. If plastic unit-dose packages are swallowed, intestinal perforation can occur. In one such incident, a man was injured by the sharp corner of a plastic blister package that cut through all layers of the intestinal wall (Norstein J. et al. Intestinal perforation after ingestion of a blister-wrapped tablet. Lancet 1995; 346:1308). Always wait to unwrap medications at the bedside when you are ready to administer them.

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Thank you to those who made National Nurses Week special! (May 6-12)