

On-Demand Clinical News

Clinical Corner: A Comparison of Selected Cough Syrups by Drug Class and Cost

Cody Midlam, PharmD, CGP

There are many commercially available formulations of cough syrups available, and many contain different ingredients found in similar drug classes. A brief listing of some of the most common cough syrup preparations are listed below along with the drug classes of their ingredients and average retail prices.

Hydromet® contains Hydrocodone (opioid) 5mg and Homatropine 1.5mg (anticholinergic). The brand name Hycodan® is no longer manufactured, but can be found as Hydromet®. Average retail price is \$87.44 for 473mL bottle or ~\$0.92/ 5mL dose.

Cheratussin AC contains Guaifenesin 100mg (expectorant) and Codeine 10mg (opioid)/ 5mL. Robitussin AC is no longer available as a trade name, but can be found as Cheratussin AC. Average retail price \$7.05 for a 120mL bottle or ~\$0.29/ 5mL dose.

Promethazine cough syrup contains Codeine 10mg (opioid) and Promethazine (Phenergan) 6.25mg (antihistamine)/ 5mL. Average retail price is \$32.75 for 473mL ~\$0.35/ 5mL dose

Tussionex® contains Hydrocodone 10mg (opioid), Chlorpheniramine 4mg (antihistamine)/ 5mL. Average retail price is \$307.84 for a 473mL bottle or ~\$3.24/ 5mL dose. **Please note: This medication is a non-preferred cough syrup and typically requires your hospice clinical manager's approval due to higher cost**

The average retail prices listed above have been found online at www.drugstore.com; accessed March 17, 2013. Average wholesale price and specific hospice contracts may result in higher or lower cost estimates.

References:

Lexi-Comp Online™. Lexi-Drugs Online™, Hudson, Ohio: Lexi-Comp, Inc.: March 17, 2013

Updated Drug Disposal Guidelines (2013)

Gerry McKeegan, RPh.

The new federal prescription drug disposal guidelines recommend mixing unwanted drugs with unpalatable substances (ie: kitty litter, used coffee grounds) and placing in a non-descript container before discarding in the trash, unless the prescribing information specifically states the drug is to be flushed down the toilet or sink.


The current federal prescription drug disposal guidelines state specifically that the following drugs should be flushed down the toilet instead of being disposed of in the trash (as described above): Abstral®, (sublingual Fentanyl), Actiq® (oral transmucosal Fentanyl), Avinza® (ER Morphine), Daytrana® (transdermal Methylphenidate patch), Demerol® (tablets and oral solution Meperidine), Diastat® (rectal gel Diazepam), Dilaudid® (tablets and oral liquid Hydromorphone), Duragesic® (ER Fentanyl patch), Embeda® (ER Morphine /Naltrexone), Exalgo® (ER Hydromorphone), Fentora® (buccal Fentanyl), Kadian® (ER Morphine), Methadone (tablets and oral solution), Morphine (IR tablets and oral solution), MS Contin® (ER Morphine), Nucynta® (ER Tapentadol), Onsolis® (buccal Fentanyl), Opana® (IR and ER Oxycodone), Oxecta® (IR Oxycodone), Oxycodone (IR capsules, and oral solution), Oxycontin® (ER Oxycodone), Percocet® (Acetaminophen/Oxycodone), Percodan® (Aspirin/ Oxycodone), Xyrem® (oral solution Sodium Oxybate). The FDA has determined this is the most appropriate route of disposal for these drugs to ensure the least risk to safety, reducing the danger of unintentional use or overdose and illegal abuse.

Additional reminders: Before throwing out a medicine container, such as a pill bottle, remember to scratch out all information on the prescription label to make it unreadable. You may also contact your county or city government's household trash and recycling service to see if there is a medication take-back program in your area.

For additional information on drug disposal, contact the FDA: 1-888-INFO-FDA (1-888-463-6332).

References:

Disposal of Unused Medicines: What You Should Know. <http://www.fda.gov/drugs/resourcesforyou/consumers/buyingusingmedicinesafely/ensuringsafeuseofmedicine/afedisposalofmedicines/ucm186187.htm>



Sulfa Allergy Cross-Sensitivity... Can a patient with sulfa allergy take morphine sulfate?

Joelle Potts, PharmD, CGP

Occasionally, we are asked whether patients with a sulfa allergy can safely take morphine sulfate, or another medication that has “sulfate” as part of its generic name.

Patients with a sulfa allergy are typically allergic to sulfonamides (a.k.a. sulfa drugs), and there are three classes of sulfa drugs based on their chemical structure: sulfonfylarylamines, nonsulfonfylarylamines, and sulfonamide moiety-containing drugs. Examples of each of these categories are as follows:

- **Sulfonfylarylamines:** Includes sulfa antibiotics such as sulfamethoxazole (in Bactrim) and protease inhibitors such as darunavir (Prezista®).
- **Nonsulfonfylarylamines:** Includes carbonic anhydrase inhibitors such as acetazolamide (Diamox®); COX-2 inhibitors such as celecoxib (Celebrex®); loop diuretics such as furosemide (Lasix®) and torsemide (Demadex®); sulfonfylureas such as glipizide (Glucotrol®) and glyburide (DiaBeta® and others); thiazides and related compounds such as hydrochlorothiazide and metolazone (Zaroxolyn®); and miscellaneous other agents including tamsulosin (Flomax®).
- **Sulfonamide moiety-containing drugs:** Includes 5-HT agonists such as sumatriptan (Imitrex®); and miscellaneous other agents including topiramate (Topamax®).

Oftentimes, patients with an allergy to sulfa antibiotics (in the sulfonfylarylamine category) do not need to avoid medications in the nonsulfonfylarylamine or sulfonamide moiety-containing drug categories, as evidence suggests that allergic cross-sensitivity between the different classes of sulfonamides is unlikely. However, it is very important to evaluate the risk of cross-sensitivity on a drug-by-drug basis, as some drugs in the other categories are contraindicated in patients with a sulfonamide allergy (e.g. celecoxib and hydrochlorothiazide), while others carry different degrees of warnings and/or precautions, often based the severity of the past reaction to the sulfonamide (e.g. furosemide).

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First and Second Generation Antipsychotics— a Focus on Zyprexa® (Olanzapine)

Cody Midlam, PharmD, CGP

There are many articles and meta-trials discussing the lack of differences between first generation (e.g. representative example, haloperidol) antipsychotics and second generation antipsychotics (e.g. atypicals - representative examples, risperidone, quetiapine, olanzapine) and between the second generations themselves. In summary, for the purposes of end-of-life care utilization (i.e. agitation) and the role of antipsychotics in the hospice population, there are no significant differences in the effectiveness of olanzapine over other, more cost effective, second generation (or first generation) antipsychotics. Preferred antipsychotics include haloperidol from typical class and quetiapine or risperidone from atypical class.

Individual patient’s characteristics should always be considered, however, as hospice clinical pharmacists, we have found that when significant differences exist between the effectiveness of one second generation over another, in the hospice population, that this is generally indicative of an underlying mental health disorder that has pre-existed for some time and then, discontinuation or switching would not be appropriate. It is also important to note that hospice coverage of the controlling medication would also not be appropriate due to the long history of the condition. The extremely rare case would be in the event of bipolar disorder, or schizophrenia (or other significant mental disorder) that developed directly due to deterioration of the brain, in a condition such as dementia. The incidence of such a clinical event is possible, but again, it is quite rare.

It is important to keep in mind, there are no commercially available antipsychotic medications FDA labeled as being indicated for the treatment of dementia-related psychosis. Also, all antipsychotic medications include an FDA Black Box Warning: *Elderly patients with dementia-related psychosis*

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It is always recommended to obtain as much detail as possible about the nature of the patient's past reaction, including specific symptoms experienced and their severity. This aids in determining whether a particular medication in one of these categories should be avoided altogether or just monitored very carefully.

Regarding the question of a sulfa allergy and taking medications such as morphine sulfate.... Sulfates sulfur, and sulfites are not sulfonamides, and are not chemically related to sulfonamides, and therefore do not cross-react, so a patient with a sulfa allergy is not prevented from taking morphine sulfate due to a sulfa allergy.

Source:
Pharmacist's Letter Detail document #260601: Sulfa Drugs and the Sulfa-Allergic Patient, June 2010, volume 26.

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with antipsychotics are at an increased risk of death compared to placebo. Most deaths appeared to be either cardiovascular (eg, heart failure, sudden death) or infectious (eg, pneumonia) in nature.

Costs of selected strengths of medications mentioned in this article:

- Olanzapine 5 mg (30 tablets): \$396.04
- Quetiapine 50 mg (100 tablets): \$656.66
- Risperidone 2 mg (60 tablets): \$456.37
- Haloperidol 2 mg (100 tablets): \$50.56

Equivalent doses are approximately: Haldol[®] (haloperidol) 2 mg = Risperdal[®] (risperidone) 2 mg = Seroquel[®] (quetiapine) 75mg = Zyprexa[®] (olanzapine) 5mg.

Source:
Lexi-Comp Online. Lexi-Drugs Online, Hudson, Ohio: Lexi-Comp, Inc.; March 17, 2013
Lexi-Comp Online. Antipsychotic Agents, Hudson, Ohio: Lexi-Comp, Inc.; March 17, 2013

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