Cold Meds Course of Action: Pharmacist Recommendations for a Pediatric Population

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Abstract
Background: In January 2016, the Perrigo Company recalled two flavors of their generic cough medicine because of incorrect markings on the included dosing cups. The error had the potential to cause an overdose in children taking the medication. These medicines are marketed and sold in pharmacies for the treatment of children despite warnings against their use. Efforts to educate our local pharmacist of these recommendations may prove beneficial.

Introduction
Recently, nine retail stores recalled two flavors of generic cough medicine made by the Perrigo Company which were sold nationally under a variety of brand names. The recalled medicines were a children’s guaifenesin grape liquid (100mg/5ml) and a children’s guaifenesin DM cherry liquid (100mg of guaifenesin and 5mg dextromethorphan/5ml). The recall was the result of incorrect markings on the included dosing cups. This led to concerns that children would be overdosed on these medicines. Cold and cough medications for children continue to be marketed and sold despite a lack of evidence for their efficacy. In addition, these medications are not without side effects or risks.

Cold and cough medications in children less than four years of age. The recent recall, together with the lack of efficacy, potential side effects and warnings against the use of these medications in children less than four years of age, made us wonder if pharmacists were still promoting their use in children younger than four years of age.

Methods
To determine the advice given by local pharmacists to parents regarding the use of cold medications in children under four years, we visited twenty-nine Huntington, WV area pharmacies. At each of these pharmacies one of seven medical students entered the store and told the pharmacist, “I have two children, ages three years old and nine months old. Both children have nasal congestion, cough and a low grade fever. What medicine would you recommend for my children?”

Results
Five of the twenty-nine pharmacists visited recommended oral medication for our nine-month-old patient. The recommendations and cold medications in children under four years of age.

Table 1. The number of recommendations given by pharmacists at various pharmacies in and around Huntington, WV.

<table>
<thead>
<tr>
<th>Recommended Medication</th>
<th>Age</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>9 months</td>
</tr>
<tr>
<td>Antihistamine/ Decongestants</td>
<td>1</td>
</tr>
<tr>
<td>Expectorants</td>
<td>-</td>
</tr>
<tr>
<td>Homeopathic Medications</td>
<td>3</td>
</tr>
<tr>
<td>Cough Suppressant</td>
<td>-</td>
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<tr>
<td>Cough Suppressant/ Expectorant</td>
<td>-</td>
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<tr>
<td>Antihistamine</td>
<td>1</td>
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Table 1. The number of recommendations given by pharmacists at various pharmacies in and around Huntington, WV.
were as follows: one recommended an antihistamine, one recommended an antihistamine/decongestant combination, and three recommended homeopathic medications.

Pharmacists recommended oral medications more frequently in the three-year-old patient. Nineteen of twenty-nine pharmacists recommended an oral medication in the three-year-old patient. Antihistamines were the most frequently recommended with seven recommendations followed by antihistamine/decongestants (3), expectorants (3), homeopathic medications (3), cough suppressants (2) and cough suppressant/expectorant (1) as shown in Table 1.

Discussion

The common cold is a frequent illness in children. Children contract an average of six to eight colds a year in the first two years of life. Many parents are anxious to help relieve or improve their children’s symptoms and may seek the help of their pharmacist.

Our data shows that a number of pharmacists in our area recommend oral over the counter cough and cold medications to treat the symptoms of the common cold in children under four years of age. Medications were recommended to treat 17% of nine-month-olds and 66% of three-year-olds. These recommendations come despite the lack of efficacy and potential adverse effects of these medications in this age group.\(^1\)\(^4\)

In their review of over the counter cough and cold medications, Lowry and Leeder listed a number of adverse reactions and toxicities to the ingredients in over the counter medications used to treat the symptoms of a cold.\(^4\) Some of those included the following:

- **Antihistamines**: somnolence, nausea, vomiting, tachycardia. Overdose: may cause delirium, confusion, and coma.
- **Antihistamines (nonsedating)**: tachycardia, headache, somnolence.
- **Overdose**: tachycardia
- **Decongestants**: tachycardia, hypertension, insomnia, agitation.
- **Overdose**: tachycardia, hypertension, insomnia and agitation.
- **Antitussives**: Dextromethorphan-pupillary dilatation, elevated blood pressure.
- **Overdoses**: may cause stupor and respiratory depression.
- **Codeine**: dizziness, nausea, vomiting, somnolence.
- **Overdoses**: could cause apnea.
- **Expectorants**: nausea, vomiting. These side effects and toxicities could be eliminated by not having these medications in the home. Also, incorrect marking of the dosing cups and improper measuring of the medicines by parents would be eradicated as a risk for young children. Unintentional ingestions of over the counter cough medicines and therapeutic errors decreased by 33.4% and 46%, respectively after the FDA and industry initiatives were implemented.\(^3\) However, our data suggests that some of our local pharmacists are either unaware of or are not adhering to the FDA recommendations.

A limitation of our study is that we do not know how often parents of patients this age seek the advice of their pharmacist before administering these medications to their children. They may ask their health care provider or purchase these medications without the advice of any health care professionals. In addition, we did not ask health care providers in our area their recommendations to our proposed scenario.

The recent recall of these cough medicines for children provides us with an opportunity to revisit the recommendations against their use in young children. Educational efforts designed to reach pharmacists, families and perhaps health care providers may be helpful.

Acknowledgements

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References