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What's Inside…

FDA NEWS

Meridia Label Updated

The FDA has announced a change to the **contraindications** section of the labeling for the weight loss drug **Meridia** (sibutramine). The update is a result of the agency's review of data from the Sibutramine Cardiovascular Morbidity/Mortality Outcomes in Overweight or Obese Subjects at Risk of a Cardiovascular Event (SCOUT) study. The study compared the use of Meridia and standard care versus placebo and standard care in obese patients with cardiovascular disease or type 2 diabetes. The study indicated an increase in cardiovascular events in the Meridia group, but reached statistical significance only in those patients suffering from *both* cardiovascular disease and diabetes. The new label will list the following conditions as contraindications for Meridia use:

- **Coronary artery disease**
- **History of stroke or TIA**
- **Arrhythmias**
- **Congestive heart failure**
- **Peripheral artery disease**
- **Uncontrolled hypertension (e.g., > 145 / 90)**

……RX NEWS……RX NEWS……RX NEWS……RX NEWS……

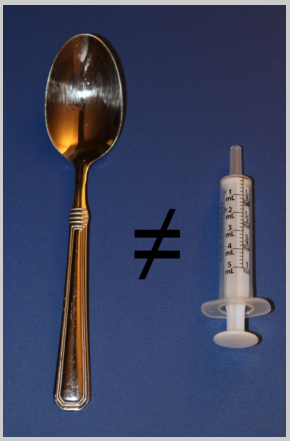
New MS Drug: Acorda Therapeutics, Inc. has received FDA approval to market **Ampyra** (dalfampridine) to improve walking in patients with multiple sclerosis (MS), the first drug approved for this indication. Ampyra, also know as 4-aminopyridine, is a potassium channel blocker, which may exert its effect by increasing conduction of action potentials in demyelinated axons. In clinical trials, response to Ampyra was gauged by increased walking speed, which was significantly greater in patients taking Ampyra versus those receiving placebo. The most common adverse effects reported were UTI, insomnia, dizziness, headache, nausea, and asthenia. Ampyra is contraindicated in patients with a history of seizure and in patients with moderate or severe renal impairment. Ampyra should not be taken with other forms of 4-aminopyridine, also known as 4-AP and fampridine. Based on animal data, Ampyra may cause fetal harm and has been rated Pregnancy Category C. In nursing mothers, a decision should be made to either discontinue the drug or discontinue breastfeeding. The recommended dose of Ampyra is 10 mg twice daily, approximately 12 hours apart, taken with or without food. Tablets should be taken whole; do not divide, crush, chew, or dissolve. Patients should not take double or extra doses if a dose is missed. At doses higher than 10 mg twice daily, an increased incidence of side effects, including seizures, was noted. Ampyra will be available in 10 mg extended release tablets, and is expected to reach pharmacy shelves in March, 2010.

Additional Tylenol Recall: As reported here last month, McNeil Consumer Healthcare has recalled all lots of **Tylenol Arthritis Pain with EZ-Open Cap** due to contamination of the containers with 2,4,6-tribromoanisol, a chemical which has led to reports of an unusual moldy, musty, or mildew-like odor. The use of products sold in these containers has been linked to gastrointestinal events, including nausea, stomach pain, vomiting, and diarrhea. The company has now expanded the recall to include certain lots of the following products: **Benadryl** (148 count only), **Children's Tylenol** meltaway tablets, **Junior Strength Motrin** caplets and chewable tablets, **Motrin**, **Rolaids**, **Simply Sleep** caplets, **St. Joseph Aspirin**, and **Regular, Arthritis, and Extra Strength Tylenol**. The affected lot numbers are available at ***www.mcneilproductrecall.com*** and consumers may contact McNeil about returning products at **1-800-222-6036**.

Executive Order 29 Extended Again: In October, 2009, Governor David Paterson signed Executive Order 29, which, among other provisions, allows for certified pharmacists to administer H1N1 and seasonal flu vaccines to individuals between the ages of 6 months and 18 years of age (pharmacist in New York are already authorized to administer influenza and pneumococcal vaccines to individuals 18 years of age and older). The emergency measure was set to expire in 30 days, but has been extended several times. The latest renewal of the order extends the authorization to **February 21, 2010**. The text of Executive Order 29, as well as billing information, is available at ***www.prnnewsletter.com***

When is a Teaspoonful Not a Teaspoonful?

As pharmacists have long known, a household teaspoonful of medicine is almost never equal to the standard definition a *teaspoonful dose*, which is 5 mL. Confirmation of this fact has arrived in the form of a recent study by researchers at Cornell University, published in the January 5, 2010 issue of the *Annals of Internal Medicine*.[1] Almost 200 university students were asked to measure a teaspoonful of cold medicine in several household spoons of varying size. The authors reported that when using a medium-sized spoon, the participants underdosed by 8.4% (4.58 vs. 5 mL), and, when using a larger spoon, overdosed by 11.6 % (5.58 mL vs. 5 mL). When interviewed, participants expressed confidence that they had poured the correct dose in both spoons. The moral of this story is clear: pharmacists should always recommend that patients and caregivers measure liquid dosage forms in properly calibrated dosing syringes, droppers, or measuring cups. This is the only way to ensure that the proper dose is delivered each time the medication is dispensed.



MEDICAID UPDATE

Information Regarding the New York State Medicaid Program

Preferred Drug Program Update

The New York State Department of Health has announced the following changes to the Preferred Drug Program (PDP): effective January 12, 2010, the following drugs will require prior authorization:

Non-Preferred Agents

Alzheimer's Agents:

Cognex
Razadyne
Razadyne ER

Anti-Fungals:

Grifulvin V

Anti-Virals— Oral

Famciclovir

Narcotics— Long Acting:

Embeda

Sulfasalazine Derivatives:

Asacol HD
Apriso
Azulfidine
Azulfidine Entab
Balsalazide
Colazal
Lialda

Thiazolidinediones:

Avandamet
Avandaryl
Avandia

Also effective January 12, 2010, the following agents will become covered agents under the PDP, and *will no longer require* prior authorization:

Preferred Agents

Beta-2 Adrenergic Agents— Inhaled Short Acting:

Proventil HFA

In addition to Proventil HFA, Medicaid will continue to cover the following preferred Beta-2 Adrenergic Short Acting Inhalers:

Maxair Autohaler
Ventolin HFA

LAW REVIEW

Regulatory Issues Affecting Pharmacy in New York State

Timeline of Key Federal Prescription Drug Laws

While the practice of pharmacy, like other health professions, is regulated primarily by the states, federal drug laws provide the basic legal structure under which pharmacies and pharmacists operate. For example, requirements for prescription drug labeling and dispensing are addressed in the Code of Federal Regulations (CFR). In addition, federal legislation has often been the means to correct abuses in the pharmaceutical industry. The following timeline contains some of the more important pieces of legislation involving the manufacture and dispensing of drugs in the United States.

1906 - The Pure Food and Drug Act: this law banned the distribution of adulterated or misbranded drugs. The act was, in part, a response to public outrage over exposés revealing unsanitary conditions in industry, such as those portrayed in Upton Sinclair's novel, *The Jungle*. Enforcement of the law was assigned to the Bureau of Chemistry, which was renamed **The Food and Drug Administration** in 1930.

1938 - The Food, Drug, and Cosmetic Act (FDCA): the backbone of U.S. drug law, this legislation was passed shortly after the Elixir Sulfanilamide disaster of 1937, in which 107 people died after ingesting a liquid form of the antibiotic Sulfanilamide. The manufacturer, S.E. Massengil, had used diethylene glycol, now known as antifreeze, as the vehicle. The Food, Drug, and Cosmetic Act required manufacturers to prove the safety of drug products before marketing. It also required labels to provide adequate directions for use.

1951 - The Durham-Humphrey Amendment: this addition to the FDCA, cosponsored by pharmacist Senator Hubert H. Humphrey, established two categories of drugs: prescription and nonprescription. Drugs which required prescription were to be labeled with the legend: *Caution: Federal law prohibits dispensing without a prescription*, hence the subsequent use of the term "legend drug."

1962 - The Kefauver-Harris Amendments: passed in reaction to the Thalidomide tragedy, in which thousands of European children were born with birth defects caused by the use of the sleeping pill Thalidomide by pregnant women. This amendment to the FDCA required that manufacturers prove both the safety and efficacy of drugs before marketing. The requirement for *Good Manufacturing Practices* was also established.

1970 - The Comprehensive Drug Abuse Prevention and Control Act: consolidated all the existing federal laws on narcotics and established the agency that later became known as the **Drug Enforcement Agency**. Title II of this legislation is known as the **Controlled Substance Act (CSA)**, which established the five categories of controlled substances, based on potential for abuse (Schedule I, II, III, IV, and V).

1984 - The Drug Price Competition and Patent Term Restoration Act: also known as the **Hatch-Waxman Act** after its sponsors, this amendment to the FDCA virtually created the generic drug market by allowing manufacturers of generics to gain FDA approval without having to repeat the costly research already done to prove safety and efficacy**.** By creating the Abbreviated New Drug Application (**ANDA**), the Act made widespread development of generics economically feasible.

1990 - The Omnibus Budget Reconciliation Act of 1990 (OBRA '90): OBRA '90 created a set of standards for pharmacists dispensing Medicare and Medicaid prescriptions. Most states, including New York, eventually incorporated these standards into state regulations affecting all prescriptions. Key elements included prospective drug utilization review (DUR), maintenance of accurate and up-to-date patient profiles, and the requirement that an offer to counsel the patient be provided when dispensing a prescription.

Feature Article..

REVIEW OF GLAUCOMA PHARMACOTHERAPY

January is National Glaucoma Awareness Month, sponsored by the non-profit Glaucoma Research Foundation. According to the foundation, some 4 million Americans have glaucoma, but only half of those know they have the disease. Glaucoma is the second leading cause of blindness worldwide, and the leading cause of blindness among African-Americans, who are 6 to 8 times more likely to develop the disease than are Caucasians. While there are many types of glaucoma, the two main forms are known as Open-Angle Glaucoma and Angle-Closure Glaucoma (also known as Narrow Angle Glaucoma). Below, we review these two types and the leading pharmacological treatments available.

Open-Angle Glaucoma

Incidence: Most common type of glaucoma
Symptoms: No early symptoms. Visual field loss as disease progresses
Treatment: Drug therapy is indicated. Surgery may be needed if intraocular pressure goals can not be met with drugs alone.

Angle-Closure Glaucoma

Incidence: Accounts for only 10% of cases
Symptoms: Ocular pain, decreased vision, colored halos, headaches, nausea, exacerbated by anticholinergics (e.g., Benadryl)
Treatment: Surgery is indicated. Drug therapy is initiated to prevent damage until surgery can be performed.

I. Alpha-2 Agonists (decrease aqueous humor production and increase aqueous humor outflow)

Drug (brand name, strengths available)	Usual Dose	Most Common Adverse Effects
Apraclonidine (Iopidine, 0.5%)	1 to 2 drops TID	Conjunctival hyperemia, ocular pruritis, dry mouth
Brimonidine (Alphagan, 0.1,.015, 2%)	1 drop TID	Dry mouth, conjunctival hyperemia, burning and stinging

II. Beta Blockers (decrease aqueous humor production)

Drug (brand name, strengths available)	Usual Dose	Most Common Adverse Effects
Betaxolol (Betoptic, 0.25, 0.5%)	1 to 2 drops BID	Transient ocular discomfort, *systemic*: bradycardia, bronchospasm
Levobunolol (Betagan, 0.25, 0.5%)	1 drop QD to BID	Transient ocular discomfort, *systemic*: bradycardia, bronchospasm
Metipranolol (OptiPranolol 0.3%)	1 drop BID	Transient ocular discomfort, *systemic*: bradycardia, bronchospasm
Timolol (Timoptic, 0.25, 0.5%)	1 drop BID	Transient ocular discomfort, *systemic*: bradycardia, bronchospasm
Timolol Gel (Timoptic XE, 0.25, 0.5%)	1 drop QD	Transient ocular discomfort, *systemic*: bradycardia, bronchospasm

III. Carbonic Anhydrase Inhibitors (decrease aqueous humor production)

Drug (brand name, strengths available)	Usual Dose	Most Common Adverse Effects
Brinzolamide (Azopt, 1%)	1 drop TID	Blurred vision, bitter, sour, or unusual taste
Dorzolamide (Trusopt, 2%)	1 drop TID	Transient ocular discomfort, bitter taste

IV. Cholinergic Agents (increase aqueous humor outflow)

Drug (brand name, strengths available)	Usual Dose	Most Common Adverse Effects
Carbachol (Isopto Carbachol, 1.5, 3%)	1 to 2 drops QD to TID	Blurred or dim vision, burning and stinging
Pilocarpine (Isopto Carpine, 0.5, 1, 2, 3, 4, 6%)	1 to 2 drops up to 6 times a day	Blurred or dim vision, burning and stinging

V. Prostaglandin Analogues (increase aqueous humor outflow)

Drug (brand name, strengths available)	Usual Dose	Most Common Adverse Effects
Bimatoprost (Lumigan, 0.03%)	1 drop QD in evening	Conjunctival hyperemia, growth of eyelashes, ocular pruritis
Latanoprost (Xalatan)	1 drop QD in evening	Blurred vision, burning and stinging, darkening of the iris
Travoprost (Travatan)	1 drop QD in evening	Conjunctival hyperemia, decreased visual acuity, eye discomfort

VI. Combinations

Drug (brand name, strengths available)	Usual Dose	Most Common Adverse Effects
Brimonidine/Timolol (Combigan)	1 drop q12h	Conjunctival hyperemia, *systemic*: bradycardia, bronchospasm
Dorzolamide/Timolol (Cosopt)	1 drop BID	Ocular burning, bitter taste, *systemic*: bradycardia, bronchospasm

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ASK PRN...

Patients sometimes ask for copies of their prescriptions after they have been filled. What are the rules on providing such copies?

Section 6810(2) of the Education Law (Article 137) states:

> **"A copy of a prescription for a controlled substance shall not be furnished to the patient but may be furnished to any licensed practitioner authorized to write such prescriptions. Copies of other prescriptions shall be furnished to the patient at his request, but such copies are issued for the informational purpose of the prescribers only, and shall be so worded."**

Remember to keep HIPPA regulations in mind whenever supplying copies of prescriptions; always verify the patient's identity, and in the case of prescribers, be sure that the patient is under the care of the requesting practitioner.

Our pharmacy has recently received several calls from the makers of Zanaflex (tizanidine) capsules, "reminding" pharmacists that their brand-name capsules are not bioequivalent to the generic tablets. Are they correct?

Yes and no! First of all, pharmacists practicing in New York certainly know that the two dosage forms are *not substitutable*, since they are not AB-rated (tizanidine tablets are AB-rated to Zanaflex tablets only, not capsules). As to bioequivalence, it is true that, when taken with food, the capsules and tablets are not equivalent. However, if taken in the fasting state, Zanaflex capsules and tablets *are bioequivalent*. Pharmacists should use this knowledge and their professional judgment when discussing therapeutic options with physicians prescribing tizanidine.

GOT QUESTIONS? WE HAVE ANSWERS!
Send your questions to us at:
askprn@prnnewsletter.com

PRN welcomes your questions on any topics relating to the practice of pharmacy. All answers are researched by our staff and, when necessary, discussed with the appropriate regulatory agencies. The information provided is not intended as legal advice, nor is it a substitute for professional judgment in clinical practice.

DID YOU KNOW?

DID YOU KNOW that the basic, and most important, drug law of the United States was largely written and sponsored by a Senator from New York State? The *Federal Food, Drug, and Cosmetic Act of 1938*, passed after 107 deaths caused by adulterated Elixir Sulfanilamide, was championed by Senator Royal S. Copeland of New York, a physician who had also served as president of the New York Board of Health and dean of the New York Flower Hospital and Medical College. The reforms of the Food, Drug, and Cosmetic Act greatly increased the safety of the drug supply in the United States.

PHARMACY FUN

The month of January is the namesake of the Roman deity Janus, who, among other things, was the god of beginnings. In deference to the seminal nature of the month, and the god, we offer a puzzle about origins. Every breakthrough pharmaceutical is eventually followed by a plethora of "me-too" drugs, so much so that it is often hard to remember which one started it all. For each drug category listed below, can you name the original agent that inspired all the imitators? The first reader to submit the correct answers to *puzzle@prnnewsletter.com* will receive a custom-printed *PRN* binder.

1. **Beta Blockers**
2. **H-2 Blockers**
3. **ARBs**
4. **Anti-HIV agents**
5. **ACE Inhibitors**
6. **Thiazolidinediones ("Glitazones")**
7. **Proton Pump Inhibitors**
8. **SSRIs**

Answers to last month's **PHARMACY FUN**:
What the third student knew that the other two didn't was that there is one temperature, and only one temperature, which is exactly the same in both Celcius and Farenheit, and that temperature is **–40°**!

References:
1. Wansink, B, van Ittersum K. How spoons systematically bias dosing of liquid medicine. *Annals of Internal Medicine* 2010;152:66-67.