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What's Inside…

FDA NEWS

The FDA has announced an ongoing safety review of the antiplatelet agent **Plavix** (clopidogrel). The review concerns reports that suggest concomitant use of proton pump inhibitors (PPIs) may reduce the effectiveness of Plavix. The therapeutic effects of Plavix depend upon transformation of the parent pro-drug into an active metabolite, and some research indicates that PPIs can inhibit the enzyme responsible for this conversion. At this time, there is no evidence that H2 blockers, such as **Zantac** and **Pepcid**, interfere with the action of Plavix. Pending further information, the FDA makes the following recommendations:

- **Patients should continue to take Plavix as directed**
- **Healthcare providers should re-evaluate the need for starting or continuing treatment with a PPI, including Prilosec OTC, in patients taking Plavix**
- **Patients taking Plavix should consult with their healthcare provider if they are currently taking or considering taking a PPI, including Prilosec OTC**

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New PPI Formulation: The FDA has approved Takeda Pharmaceuticals' **Kapidex** (dexlansoprazole) for the treatment of gastroesophageal reflux disease (GERD), and for healing and maintenance of healing of erosive esophaghitis (EE). Kapidex is the R-enantiomer of **Prevacid** (lansoprazole), formulated as a dual delayed-release capsule and available in 30 and 60 mg strengths. The unique release mechanism of Kapidex results in two distinct peak levels, the first occurring 1 to 2 hours after administration, the second within 4 to 5 hours. In clinical trials, the most commonly reported adverse effects included diarrhea, abdominal pain, and nausea. Kapidex should not be taken with **Reyataz** (atazanavir) as it may substantially reduce systemic concentrations of the protease inhibitor. Kapidex may interfere with the absorption of drugs with pH-dependent absorption, such as **ampicillin esters**, **digoxin**, **iron salts**, and **ketoconazole**. Patients taking **warfarin** with Kapidex may require monitoring for increases in INR and prothrombin time. The recommended dose for healing of EE is 60 mg daily for up to 8 weeks. The dose for maintenance of EE healing is 30 mg daily for up to 6 months. For treatment of GERD, 30 mg may be given daily for 4 weeks. For patients with moderate hepatic impairment (Child-Pugh Class B), 30 mg daily should be considered the maximum dose. Kapidex may be taken with or without food. Kapidex should be swallowed whole. Alternatively, Kapidex capsules can be opened, sprinkled on one tablespoon of applesauce, and swallowed immediately.

Topical Gel for Overactive Bladder: Watson Pharmaceuticals has received approval to market **Gelnique** (oxybutynin 10%), the first and only topical gel for the treatment of overactive bladder with symptoms of urge urinary incontinence, urgency, and frequency. Gelnique will be available in boxes of 30 sachets, each containing 1 gram (1.14 mL) of oxybutynin 100mg/gm gel. The most common adverse effects seen in trials were dry mouth and application site reactions. The contents of one sachet should be applied daily to dry, intact skin on the abdomen, upper arms/shoulders, or thighs. Application sites should be rotated, avoiding use of the same site on consecutive days.

New Gout Treatment: Takeda Pharmaceuticals has announced FDA approval of **Uloric** (febuxostat), the first new treatment option for gout in more than 40 years. Uloric is a xanthine oxidase inhibitor indicated for the chronic management of hyperuricemia in patients with gout. Adverse reactions in clinical trials included liver function abnormalities, nausea, arthralgia, and rash. Uloric is contraindicated in patients being treated with **azathioprine**, **mercaptopurine**, or **theophylline**. An increase in gout flares can occur during initiation of anti-hyperuricemic treatment. If a gout flare occurs during treatment, Uloric need not be discontinued. The recommended starting dose is 40 mg once daily. For patients who do not achieve a serum uric acid level less than 6 mg per dL after 2 weeks on 40 mg may be increased to 80 mg daily. Uloric may be given without regard to food or antacid use.

Study Shows Pharmacist Intervention Reduced Hospitalizations

A study conducted by researchers at Boston University's School of Medicine sought to determine if an intervention program could reduce rehospitalizations following hospital discharge, a common problem.[1] The study, published in the February 3rd issue of the *Annals of Internal Medicine*, randomized 749 hospitalized adults to receive either usual care or the intervention, designated as reengineered discharge (RED). The RED consisted of two parts: in-hospital and postdischarge. The in-hospital portion was carried out by nurse discharge advocates and included patient education, arranging follow-up appointments, and confirming medication plan. After discharge, participants in the intervention group were contacted by clinical pharmacists in order to reinforce the discharge plan, review all medications, and solve any medication-related problems. Pharmacists found that 65% of intervention participants had at least one medication problem and 53% required corrective action by the pharmacist. Overall, there was a 30% reduction in hospital utilization (including emergency department visits and hospital readmissions) in the intervention group as compared to the usual care group. This study adds to the mounting evidence that suggests that pharmacists can greatly improve patient outcomes.

MEDICAID UPDATE

Information Regarding the New York State Medicaid Program

Changes to the Preferred Drug Program (PDP)

Effective February 18, 2009, **Proventil HFA** will no longer be covered under the New York State Medicaid Preferred Drug Program. As of that date, **Ventolin HFA** will be the only preferred albuterol metered dose inhaler. **Maxair Autohaler** (pirbuterol) will continue to be covered. **Xopenex Nebulizer Solution** will also lose preferred status as of that date, leaving albuterol as the only beta agonist nebulizer solution covered on the PDP. New prescriptions for Proventil HFA or Xopenex Nebulizer Solution will require prior authorization as of February 18. Refills of prescription filled prior to that date will still be covered.

Automatic Blood Pressure Monitors Will Now Be Covered

Automatic blood pressure monitors will be covered by New York State Medicaid, with prior approval, starting January 1, 2009. Previously, only manual blood pressure monitors were covered (DME procedure code **A4660),** at a reimbursement rate of **$20.59** (no prior approval needed). The new procedure code will be **A4670** and the maximum reimbursement will be:

Semi automatic	**$31.00**
Fully automatic	**$65.00**

Semi automatic is defined as a monitor requiring hand cuff inflation. Fully automatic is defined as a monitor with push button operation. Coverage criteria for semi automatic monitors include hearing or visual impairment or inability to teach patient to use manual monitor due to low literacy skills or learning impairment. For fully automatic monitors, criteria includes meeting criteria for semi automatic monitors *and* the presence of arthritis or other motor disorders involving the upper extremities.

LAW REVIEW

Regulatory Issues Affecting Pharmacy in New York State

FDA Proposes Prescribing Restrictions on Opioid Drug Products

In early February, 2009, the Food and Drug Administration (FDA) announced that it had advised the manufacturers of 24 opioid drugs that their products will be required to have a Risk Evaluation and Mitigation Strategy (REMS) to ensure that the benefits of the drugs continue to outweigh the risks. The 24 products represent 6 individual agents: **Fentanyl, Hydromorphone, Methadone, Morphine, Oxycodone,** and **Oxymorphone**. A complete list of the affected products appears at the end of this article. The ability of the FDA to require a REMS is an outgrowth of the new powers granted the agency under a 2007 law known as FDAAA.

FDAAA: A Significant Addition to FDA Authority

On September 27, 2007, the Food and Drug Administration Amendments Act (FDAAA) was signed into law. A key component of the legislation is the authority granted the agency to require drug manufacturers to establish a REMS for those drug or biological products believed to pose a known or potential serious risk to health. A REMS can include a medication guide, patient package insert, a communication and implementation plan, and elements to assure safe use. According to FDAAA, elements to assure safe use include:

- **Specialized training and/or certification of prescribers**
- **Certification of pharmacies, practitioners and health care settings that dispense the drug**
- **Drug dispensed to patients only in certain health care settings**
- **Patients have documentation of safe use conditions (e.g., lab tests)**
- **Patients are subject to certain monitoring; or**
- **Patients are enrolled in a registry**

The FDA will hold a series of meetings this year with drug makers, health care professionals, and the general public, in order to formulate practical and effective solutions for the development of a REMS for the selected opioids listed below. The first meeting, with manufacturers of the affected agents, will be held on March 3.

Opioid Products That May Be Required to Have a REMS

GENERIC NAME	TRADE NAMES
Fentanyl Extended Release Transdermal System	Duragesic, generics
Hydromorphone Extended Release	Palladone (not currently marketed, but still approved)
Methadone	Dolophine, generics
Morphine Extended Release	Avinza, Kadian, MS Contin, Oramorph SR, generics
Oxycodone Extended Release	OxyContin, generics
Oxymorphone Extended Release	Opana

Feature Article..

AMERICAN HEART MONTH

February is American Heart Month, and offers pharmacists a good opportunity to review the facts and figures involved in cardiovascular disease and have a look at some innovative treatment options in development. Heart disease is the leading cause of death, among both men and women, in the United States. According to the American Heart Association, nearly 80 million Americans suffer from at least one form of cardiovascular disease. Once thought to be a disease mainly affecting men, the fact is that slightly more than 50% of heart attacks in the U.S. occur in women (based on Centers for Disease Control statistics). Fortunately, heart disease has long been a major focus of pharmaceutical research and many good treatment options are available for most patients.

GUIDELINES

Treatment guidelines for cardiovascular disease are under constant review and subject to change as new studies are reviewed. Below are some of the current numbers based on JNC 7 and the American Heart Association.

Blood Pressure:	***Systolic/Diastolic***
Normal	**<120 and <80**
Prehypertension:	**120-139 or 80-89**
Stage 1 Hypertension:	**140-159 or 90-99**
Stage 2 Hypertension:	**≥160 or ≥100**

Total Cholesterol:

Desirable: < 200 mg/dL

Borderline High: 200-239 mg/dL

High: 240 mg/dL or higher

LDL-C

Optimal: Less than 100 mg/dL

Optimal (diabetics): Less than 70 mg/dL

Near Optimal: 100-129 mg/dL

Borderline High: 130-159 mg/dL

High: 160-189 mg/dL

Very High: 190 mg/dL or higher

HDL-C

Optimal: 60 mg/dL or higher

Low: Less than 40 mg/dL

New Treatments for Cardiovascular Disease

Here are some of the most interesting new drugs for the treatment of cardiovascular disease:

Darapladib: GlaxoSmith-Kline is preparing to start Phase III clinical trials on this lipoprotein-associated phospholipase (Lp-PLA2) inhibitor. Lp-PLA2 is an enzyme found in coronary plaques which is associated with inflammation and which has been implicated in plaque rupture and subsequent heart attack and stroke.

Multaq (dronedarone) is a new Class III antiarrythmic by Sanofi-Aventis, being studied for use in patients with atrial fibrillation and flutter. Although previously rejected by the FDA in 2006, the drug application has been resubmitted and goes before an FDA advisory committee next month. Multaq is similar to **amiodarone**, but thus far has not shown the pulmonary and thyroid toxicity seen with amiodarone use.

Effient (prasugrel) is a new platelet inhibitor from Eli Lilly which works by the same mechanism as **Plavix** (clopidogrel). In a rare head-to-head comparison study called TRITON, Effient was proven superior to Plavix in reducing cardiovascular events, although it caused more bleeding episodes. Effient was approved for Acute Coronary Syndrome (ACS) in Europe on February 23 of this year and an FDA advisory panel recently voted 9 to 0 to approve the drug in the U.S. There is some controversy, however, over that vote, since a panel member critical of Effient's safety profile was "mistakenly" excluded, according to the FDA, after protests from the drug maker.

Mipomersen, a joint project of Isis Pharmaceuticals and Genzyme, is a "second generation" antisense agent that reduces the production of apolipoprotein B 100 (apoB-100). ApoB-100 is a protein important in the production and transport of LDL cholesterol. Mipomersen is currently in Phase III clinical trials for patients with familial hypercholesterolemia, a genetic disorder which leads to premature cardiovascular disease and cardiovascular-related death. Isis announced in January that it will soon begin studies in other high-risk patient populations.

When to Call 911: The Most Common Signs and Symptoms of a Heart Attack

1. **Chest Discomfort:** This is the hallmark symptom; most heart attacks will involve some form of chest discomfort, often described as a pressure, squeezing, or pain in the center of the chest, which may last for more than a few minutes or which may be intermittent.
2. **Pain or Discomfort in Other Areas:** Some patients will describe pain or discomfort in one or both arms, the back, neck, jaw, or stomach.
3. **Shortness of Breath**, which may occur with or without chest pain.
4. **Additional Signs** include cold sweat, nausea, vomiting, lightheadedness, irregular heartbeat, and extreme fatigue or weakness.

While both men and women commonly experience chest pain, woman are more likely to experience shortness of breath, nausea and vomiting, and back or jaw pain.

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ASK PRN...

What are the regulations regarding the name badges worn by pharmacists and pharmacy interns? Is there a mandated size, color, or font?

There are two specific references in New York State pharmacy law pertaining to badges worn by pharmacists and pharmacy interns. Part 29.2(a)(9) of the Rules of the Board of Regents states that unprofessional conduct includes *"failing to wear an identifying badge, which shall be conspicuously displayed and legible, indicating the practitioner's name and professional title…."* Section 6808-a of the Education Law, under the title "Identification of Pharmacists," reads as follows: *"Every pharmacist on duty shall be identified by a badge designed by the state board of pharmacy, which shall contain his name and title."* A call to the office of the board of pharmacy confirmed that there are no specific requirements in terms of size, color, or font. It is only required that the badge contain the name and profession (e.g., "pharmacist" or "pharmacy intern") of the practitioner, and that it be legible and conspicuously displayed.

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 first person to receive treatment with penicillin in the United States was Anne Sheafe Miller? Mrs. Miller, 33, was gravely ill in March,1942, suffering from streptococcal sepsis at the Yale-New haven Hospital. Fortunately for her, a fellow patient at the hospital was Dr. John F. Fulton, diagnosed with severe pulmonary coccidioidomycosis. Dr. Fulton happened to be friends Dr. Howard Florey, who first reported the use of penicillin in England the previous year. Dr. Fulton was able to use his considerable influence, from his hospital bed, to obtain enough of the precious antibiotic to treat Mrs. Miller, who made a complete recovery and lived to age 90. Unknown to Dr. Fulton, his physicians were also hoping to treat him with the penicillin he worked so hard to obtain, but sensitivity tests showed it would not be effective. Happily, Dr. Fulton also survived his infection.

PHARMACY FUN

As Shakespeare wrote, "a rose by any other name would smell as sweet." The same is true, apparently, for prescription drugs! This month's puzzle presents the reader with 5 drugs which had to have their names changed due to an unfortunate similarity to an already existing agent. We give you the current name, and ask you to come up with the original name *and* the name of the drug which it was similar to. The first reader to submit the correct answers to *puzzle@prnnewsletter.com* will receive a custom-printed *PRN* binder.

	Current Name	Original Name	Similar Drug Name
1.	**Prilosec**	_____	_____
2.	**Lovaza**	_____	_____
3.	**Altoprev**	_____	_____
4.	**Razadyne**	_____	_____
5.	**Inamnirone**	_____	_____

Answers to last month's **PHARMACY FUN**:
1. Flurazapam 2. Fluphenazine 3. Fluoxetine 4. Fluvastatin 5. Flurbiprofen 6. Fluoromethalone
7. Fluticasone 8. Fluconazole 9. Flumazenil 10. Fludrocortisone 11. Fluvoxamine 12. Fluorouracil

References:
1. Jack B W, et al. A reengineered hospital discharge program to decrease rehospitalizations. *Annals of Internal Medicine* 2009;150:178-187.