MEDICAL PHARMACIES TABLET

MEDICAL PHARMACIES CLINICALLY SIGNIFICANT SINCE 1957

Drug information and news for health care providers

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QT PROLONGATION .... MINIMIZING THE RISKS

The QT interval, part of the heart's electrical cycle, is the time it takes for the depolarization and repolarization of the left and right ventricles. It is dependent on the heart rate. A faster heart rate results in a shorter QT interval. The QTc interval refers to the QT interval corrected for the heart rate. A healthy heart's QTc interval is less than 440 milliseconds.

A person with a long or prolonged QT interval may be at risk for ventricular arrhythmias including Torsades de Pointes (TdP) as well as sudden death. TdP usually terminates spontaneously but in rare instances it may degenerate into ventricular fibrillation and cardiac arrest. An electrocardiogram (ECG) can identify a person with a long QT syndrome. "Symptoms of TdP can include palpitations, dizziness, syncope, nausea, chest pain and shortness of breath".

Patient Risk Factors: Most people who are susceptible to TdP have at least one risk factor. Patients with multiple risk factors have a higher risk of TdP. The following factors place patients at highest risk: a history of TdP or known congenital long QT syndrome, female sex, age greater than 65, a history of heart disease, taking concomitant drugs that prolong the QT interval and electrolyte disturbances (hypokalemia, low magnesium, low calcium). Other contributing factors include altered nutrition (e.g. eating disorders, starvation diets, alcoholism), bradycardia, cerebrovascular disease, intracranial trauma, diabetes, hypertension, hypoglycemia, hypothermia, hypothyroidism, obesity, pituitary insufficiency, renal or hepatic dysfunction, physical and/or emotional stress. **MPT**

Drugs Associated with QT Prolongation: Not all drugs that prolong the QT interval contribute equally to increase the risk of TdP. High risk **(HR)** drugs prolong the QT interval and increase the risk of TdP when used as directed in labelling. QT prolongation with drugs in the "possible risk" **(PR)** category is supported by evidence "but there is insufficient evidence that they, when used as directed in labelling, have a risk of causing TdP". Conditional risk **(CR)** drugs "prolong the QT interval and have a risk of TdP but only under certain known conditions (e.g. excessive dose, drug interactions, etc.)". Some drugs known to prolong the QT interval are as follows (stratified according to risk and therapeutic categories):

Antiarrhythmics	**(HR)** amiodarone, dofetilide, flecainide, quinidine, sotalol; **(PR)** adenosine, dronedarone, propafenone
Antidepressants	**(HR)** citalopram; **(PR)** escitalopram, maprotiline, venlafaxine; **(CR)** amitriptyline, clomipramine, desipramine, doxepin, fluoxetine, imipramine, nortriptyline, paroxetine, protriptyline, sertraline, trazodone, trimipramine
Anticancer drugs	**(PR)** tamoxifen
Antiemetics	**(HR)** domperidone; **(PR)** dolasetron, granisetron, ondansetron
Antihistamines	**(PR)** loratadine; **(CR)** diphenhydramine
Antiinfectives	**(HR)** chloroquine, clarithromycin, erythromycin, moxifloxacin; **(PR)** azithromycin, levofloxacin, mefloquine, ofloxacin, quinine, voriconazole; **(CR)** trimethoprim-sulfamethoxazole
Antipsychotics	**(HR)** chlorpromazine, haloperidol, pimozide, thioridazine; **(PR)** clozapine, lithium, paliperidone, quetiapine, risperidone, ziprasidone
Cardiovascular	**(HR)** flecainide, probucol; **(PR)** indapamide, ranolazine, vardenafil
Gastrointestinal	**(HR)** droperidol; **(PR)** famotidine, octreotide
Immunosuppressants	**(PR)** fingolimod, tacrolimus
Migraine agents	**(PR)** naratriptan, rizatriptan, sumatriptan, zolmitriptan
Miscellaneous	**(HR)** methadone; **(PR)** alfuzosin, amantadine, atazanavir, chloral hydrate, epinephrine, oxytocin, salmeterol, tacrolimus, tizanidine; **(CR)** galantamine, ritonavir, solfenacin

Co-administration of drugs that may prolong the QT interval may increase the risk of TdP. Avoid if possible. Minimize risk by not exceeding the recommended dose and monitor (i.e. ECG, symptoms). *(N.B. This is not a complete list. (Ref: AZERT.org))*

DRUG NEWS

2012/2013 Flu Vaccine Update

This season's flu vaccine contains A/California 7/2009(H1N1)-antigen which is the same strain as last year's vaccine. The A and B strains differ from the previous year. The current vaccine also contains A/Victoria/361/2011(H3N2)-like strain and B/Wisconsin/1/2010-like strain (B Yamagata lineage).

As in previous years the vaccines should be stored in the refrigerator. Fluviral® (GSK) and Vaxigrip® (Sanofi Pasteur) multi-dose vials should be discarded 28 days after opening. Patients allergic to neomycin may be given Fluviral. Both Vaxigrip and Agriful® contain neomycin. The dose is 0.5 ml intra-muscularly for people aged 6 months and older.

Asmanex® Twisthaler (mometasone furoate) 200 & 400 mcg dry powder inhaler (Merck Canada)

(not currently a benefit of ODB)

Asmanex Twisthaler is a corticosteroid for inhalation for the prophylactic management of steroid-responsive bronchial asthma. It's approved for use in patients 12 years and older. Asmanex is not indicated for the relief of acute asthma. As with other corticosteroids, it should not be stopped abruptly, but tapered gradually. Asmanex contains lactose and should not be used in hypersensitive patients.

Recommended dosing: The usual dose is 400 mcg once daily in the morning. For patients with severe asthma requiring oral corticosteroids, the dose may be increased to 400 mcg twice daily. Oral doses of corticosteroids should be tapered gradually and slowly according to the patient's response. Close monitoring for signs of unstable asthma and adrenal insufficiency is recommended. Once a gradual reduction of the steroid dose is complete, Asmanex should be titrated to the lowest effective dose. Patients unable to completely stop an oral corticosteroid may require a small oral dose in addition to inhaled Asmanex. Symptoms may improve within 24 hours after starting Asmanex, but maximum benefit may take 1 to 2 weeks or longer.

The maintenance dose of Asmanex is 200 mcg to 400 mcg once daily in the morning. Some patients may achieve better control with a dose of 200 mcg twice daily.

Administration, Availability & Storage:

- While holding the inhaler upright by the coloured base, the cap is twisted counter-clockwise and removed. This action loads the inhaler with the dose. The counter on the coloured base should line up with the pointer on the body of the inhaler device. The inhaler should be held upright until ready to administer.
- The patient should breathe out fully then bring the device to the mouth (in a horizontal position) firmly closing their lips around the mouthpiece. The powder should be inhaled with a fast deep breath. Patients may not taste, smell or feel the dose.
- Following inhalation the device should be removed from the mouth and the patient's breath should be held for about 10 seconds or as long as comfortable.
- A dry cloth or tissue should be used to wipe the mouthpiece. The cap is replaced by rotating it clockwise while gently pressing down. A clicking sound signals that the cap is fully closed. The arrow on the cap should be aligned with the counter window.
- Patients should never breathe into or wash the inhaler device. Once the inhaler is empty, the counter will read "00" and the cap will lock.
- Following dosing, rinsing of the mouth with water is recommended. The rinse water should not be swallowed.

The 200 mcg and 400 mcg strengths are each available in 30 and 60 metered doses packaged in a protective foil pouch. The product should not be used beyond 2 months after removal from the foil pouch. Asmanex should be stored in a dry place from 15° to 30° C. **DN**

(Refer to the product monographs for complete information)

Editor; Nancy Addington, R.Ph., B.Sc.Phm
Medical Pharmacy
References on Request

Congratulations to Medical Pharmacies' Clinical and Quality Professional Lead, Clinical Consultant Pharmacist, **Sue Burns** the **2012 recipient** of the prestigious **Teva Canada Award of Excellence in Senior Care Pharmacy**.

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