

The Pharmacy Bulletin



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A regular update of Pharmacy Policy and Drug Information
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Pharmacy Hours: Mon-Fri 0800-1700
Sat-Sun 0800-

Nubain® (Nalbuphine) Discontinued in Canada

Nubain will no longer be marketed in Canada or the US and will not be available via the Special Access Program. Bristol Myers Squibb has opted to discontinue Nubain due to low demand. The Pharmacy department currently has a small supply of the drug, but once current stocks are depleted, it will no longer be available.

Wardstock Adjustments

Please be aware that Pharmacy is currently reviewing the quantities of medications that are available as wardstock on nursing units and that these may be adjusted depending on usage. Drugs which are used for emergency purposes will remain unaffected.

Narcotic Administration Records

In an effort to keep a correct and accurate balance of narcotics remaining, when recording administration of part vials, record the remainder as the decimal portion left in the vial.

For example, assume you have 8 vials of morphine 10mg/ml on hand. You administer a 2mg dose and hold the remainder for use later. Record the balance remaining on hand as

7.8 vials. The next dose is 3mg, so the balance becomes

7.5 vials. If you then discard the remainder of the vial, record the discard (have it co-signed) and the balance then becomes 7 vials.

According to Pharmacy and Nursing policies, all pertinent information must be completed on Narcotic Ward Administration Records. This includes:

- Date and time of administration. These are very important for determining time of next dose.

- Patient's full name - please ensure it is the correct patient or you could cause a patient to get an overdose or be refused pain relief based on the mistaken belief they have had a dose.

-Dose: please ensure the correct dose is recorded. For single entity products, record dose in milligrams or micrograms (as appropriate). For combination products, record the number of tablets. For example **Atasol 30 should be recorded as 1 tab or 2 tabs, not 30mg or 60mg**

- Nurse's signature: this is a legal requirement on this documentation.

- Checked by: we use this column for co-signature on any discards. Again, the co-signature is a legal requirement.

- Doctor: ordering physician's name is to be recorded here.

- Balance: **The correct balance must be maintained at all times.** (see note above for recording part-vials) As you deduct each dose, check against the actual balance on hand and any discrepancy must be reported immediately to the RN in charge or Pharmacy.

Please insure that when transferring information from a full administration record to a new administration sheet that the original serial number (found in the lower right-hand corner) is recorded on the new administration sheet. Also, the completed administration sheets should be returned



to Pharmacy as soon as possible when narcotics are to be returned or requested. As these ward administration records are received, they are checked for the above items and any missing information will be investigated. It is very difficult to track down information several weeks or months after the incident, and **the person failing to record information will be responsible for making corrections.**

Ezetimibe (Ezetrol®): A New Cholesterol Absorption Inhibitor

By Pam Durnford, Pharmacy Student

Ezetimibe is the first agent in a novel class of lipid-lowering compounds recently approved by the FDA in Oct. 2002 and then by Health Canada in May 2003. It is manufactured by Merck Frosst/Schering Pharma. Ezetimibe, or Ezetrol® as it is marketed in Canada, is classified as a selective cholesterol absorption inhibitor.

Ezetimibe works by localizing at the brush border of the small intestine, where it selectively inhibits the absorption of both dietary and biliary cholesterol. This lowered absorption decreases delivery of intestinal cholesterol to the liver, thus decreasing hepatic cholesterol stores. The liver increases expression of hepatic LDL receptors to compensate for lower stores, which results in more cholesterol being removed from the blood. Blood lipid levels thus decrease, as the liver removes lipids from circulation. This mechanism is unique to this new class of compounds, and is complimentary in action to the HMG-CoA reductase inhibitors ("statins"), which inhibit synthesis of new cholesterol in the liver.

Ezetimibe is approved to lower cholesterol in

several indications. It is indicated as monotherapy adjunctive with lifestyle changes such as diet and exercise, and in combination with statin drugs for primary hypercholesterolemia. It treats both heterozygous and homozygous familial hypercholesterolemia in combination with statins. It is also an adjunctive treatment in homozygous sitosterolemia (phytolsterolemia).

Ezetimibe is contraindicated in anyone with a known hypersensitivity, an unexplained or moderate to severe liver enzyme (LFT) elevation, active liver disease, severe hepatic impairment, and women who are pregnant or breastfeeding.

Before ezetimibe administration, it is important to establish and maintain lifestyle modifications such as diet and exercise. The dose of ezetimibe is 10 mg daily for all indications. It can be taken any time of day, with or without food, and may be taken at the same time as a prescribed statin. Ezetimibe has no effect on the liver's CYP450 enzyme system, thus avoids drug interactions with many common drugs. There are no significant interactions with statins, or many other tested drugs. Some drug interactions include:

- Cholestyramine: Decreased ezetimibe concentration by ~55%. Ezetimibe should be administered ≥ 2 hours before or ≥ 4 hrs after a resin.
- Fibrates: Concomitant use increased the concentration of ezetimibe by 1.5-1.7 fold. Clinical relevance unknown. Not currently recommended until further studies performed to assess safety and efficacy.
- Cyclosporine: May substantially increase ezetimibe levels. Caution and careful monitoring required.



Adverse reactions associated with ezetimibe are generally mild and similar to placebo in clinical trials. It has very low potential for systemic toxicity. Clinical trials found the most common side effects, regardless of cause, which were similar to placebo to include: fatigue, abdominal pain, diarrhea, viral infection, muscle and joint pain, coughing, chest pain, dizziness, headache, and upper respiratory tract infection. Other effects may include LFT elevations which were similar to placebo and generally asymptomatic, and elevated creatinine phosphokinase (CPK), indicating myopathy or rhabdomyolysis, also similar to placebo.

Pharmacological Treatment of Insomnia

by Gillian Kelland, Pharmacy Student

Insomnia is the most prevalent sleep complaint in the general population, affecting anywhere from 9% to 15% of adults on a chronic basis. Insomnia has been classified into three types: 1) initial insomnia – difficulty falling asleep 2) middle insomnia – trouble staying asleep 3) terminal insomnia – early morning awakenings. Insomnia may be situational (lasting < 3 days), episodic (lasting 3 days to 3 weeks), or chronic (lasting > 3 weeks).

Treatment of insomnia can involve both nonpharmacologic and pharmacologic means. There are several non-drug approaches that should be initiated before drug therapy is considered.

Practicing proper sleep hygiene is an important first step in overcoming insomnia. Such practices include getting up the same time each day, avoiding stimulant drugs (i.e. caffeine) from late afternoon onwards, avoiding daytime napping, regular physical exercise and maintaining a comfortable sleeping environment. Relaxation exercises have

also been found useful in combating insomnia.

With regard to drug therapy for insomnia, short courses (2 to 4 weeks) of hypnotics have been found useful when combined with proper sleep hygiene. For the most part, drug therapy should only be considered for short-term insomnia that has resulted in impairment in daytime functioning. Treatment of chronic insomnia with hypnotics is controversial but is often used as a temporary measure while underlying medical and psychiatric disorders are being excluded. Currently, the most commonly used medications to treat insomnia are benzodiazepines, zopiclone, and zaleplon.

Short and intermediate acting benzodiazepines are generally considered first line in the treatment of insomnia. Temazepam and oxazepam, in particular, are often prescribed for this purpose. Benzodiazepines have been found to be quite effective in initiating and maintaining sleep, however they also have several adverse effects, which limit their use. Tolerance to benzodiazepines can develop within 1 to 3 weeks. This will often result in an increase in dosage requirement. Dependence is also a potential adverse effect as is the withdrawal syndrome that accompanies discontinuation often resulting in rebound insomnia. The longer acting benzodiazepines will often cause a hangover effect the next day, resulting in confusion and daytime somnolence. The elderly, in particular, are at an elevated risk of experiencing these cognitive effects putting them at increased risk of falls.

Zopiclone acts on the same receptors as benzodiazepines and studies have shown that hypnotic properties of zopiclone are either equal or superior to those of the benzodiazepines. The major advantage of zopiclone is its side effect

profile. Tolerance to the hypnotic effects of zopiclone tends to be delayed and rebound insomnia may be reduced compared to benzodiazepines, possibly resulting in reduced addiction potential. As well, it seems zopiclone has less effect on memory and cognitive function compared to benzodiazepines.

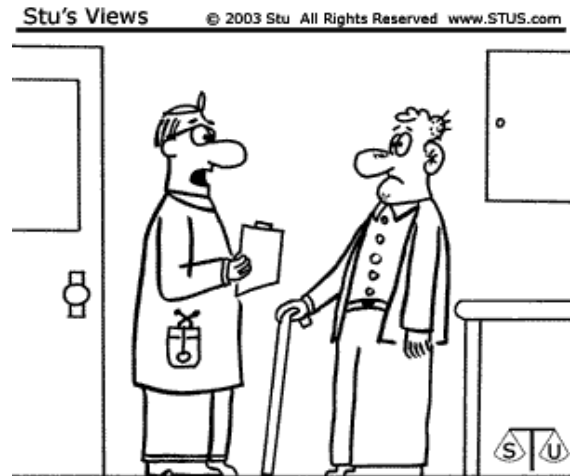
Zaleplon differs from the previously mentioned drugs by its significantly rapid onset of action and short duration of action. Zaleplon is mostly used in managing sleep-onset insomnia. Zaleplon will not reduce the number of awakenings or lengthen sleep duration. For the most part, zaleplon appears to be well tolerated and free of significant residual or discontinuation side effects.

Although benzodiazepines remain to be the most commonly prescribed drugs to manage insomnia, zopiclone and zaleplon are slowly gaining in popularity. Once the appropriate medication is chosen, individualization of therapy is required in order to improve both quantity and quality of sleep as well as to minimize potential adverse effects of therapy.

Staffing Changes

The Pharmacy department would like to welcome our new pharmacist, Mr. George Skeard.

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"I'm stumped.
We'll have to wait for
the autopsy."