



PHARMACY BULLETIN

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INSIDE THIS ISSUE:

High Alert Medications	1
Rabies and Vaccine	2
Milk Thistle	3
Motion Sickness	4

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High Alert Medications

By Izaidah Alias

High-alert medications are drugs that bear a heightened risk of causing significant patient harm when they are used in error. Although mistakes may or may not be more common with these drugs, the consequences of an error are clearly more devastating to patients. Thus, several strategies are recommended to ensure safe handling of High Alert Medications.

First and foremost, all High Alert Medications should have “**HIGH ALERT MEDICATION**” labels on storage shelves, containers, product packages and loose vials or ampoules.

During procurement, **limit the drug strength available** in the formulary of each facility. **Avoid the frequent change of brand or colour.** If this is unavoidable,

awareness should be spread to all staffs involved.

For storage, **TALLman lettering** can be used to emphasize the differences in medication names. Prescribers must also be cautious in writing the **medication name in full** on prescription, instead of abbreviations.



Counterchecking system before dispensing is widely practiced in pharmacy to minimize the medication errors associated with handling of high alert medications. Similarly, counterchecking drugs before

administration by nurses also warrants medication safety for patients.

In ward, **references and dilution guide** should be made accessible for everyone. All diluted medications must be **labeled immediately** with the name and strength immediately upon dilution.

As most of the cytotoxic drugs are listed as high alert medications, special handling is required for their storage and reconstitution. These drugs must be placed in separation to any other drugs. Infusion sets for cytotoxic drug must also be clearly labeled after reconstitution.

Rabies and Vaccine



Rabies is a serious viral infection that targets the brain and nervous system. It spreads to human through saliva of infected animals.

“Rabies has fatality rate of up to 99% following the onset of signs.”

Who should get rabies vaccine ?

Rabies vaccine is recommended for people at high risk of rabies to protect them if they are exposed (such as veterinary staffs) or for those who are traveling to a part of the world known to have high levels of rabies and limited medical care. It is also given to anyone who may have been exposed to rabies to prevent the disease.

When to get rabies vaccine ?

In pre-exposure vaccination, a total of 3 doses of human diploid cell vaccine (HDCV) are given with one IM 1.0mL dose on Day 0, 7 and 21 or 28.

For post-exposure prophylaxis (PEP), the number of vaccine to be given is based on previous vaccination status and immunity status. For persons with immunosuppression, rabies PEP should be administered using all 5 doses of 1.0mL HDCV on Days 0, 3, 7, 14, and 28.

This recommendation was based on rabies

pathogenesis data, experimental animal work, clinical studies and epidemiologic surveillance.

Nevertheless, all post-exposure treatment should begin with immediate cleansing of the wound with soap and water. If available, a virucidal agent such as povidone-iodine solution and ethanol 70% should be used to irrigate the wound.

Warnings/Precautions

Rabies vaccine should not be used in persons with a confirmed diagnosis



of rabies. Use after onset of symptoms

may be detrimental too. However, post-exposure vaccination may begin regardless of the length of time from exposure, as long as clinical signs of rabies are not present. An immune complex reaction is possible from 2-21 days following vaccination. Symptoms may include arthralgia, arthritis, angioedema, fever, generalized urticarial, malaise, nausea and vomiting. Syncope has been reported and may be accompanied by transient visual disturbances, weakness or tonic-clonic movements.

Therefore, procedures should be in place to avoid injuries from falling and to restore cerebral perfusion if syncope occurs.

Milk Thistle

What is it?

Milk thistle or St Mary Thistle (*Silybummarianum*) is a plant where the seeds are used to liver diseases. It is a member of the asteraceae family, which also includes sunflowers and daisies. The active constituent of milk thistle is silymarin.

Dosage and formulation

Milk thistle is often standardized to contain 70–80% silymarin. Most clinical trials have used daily dosages of 420 to 480 mg silymarin, divided into two or three doses daily. Milk thistle is formulated into capsules, liquid extract and tincture. Besides that, a few studies show that complexation of silybin with phosphatidylcholine as a phytosome has enhanced bioavailability than regular standardized milk thistle.

Milk thistle in liver disease

A 2007 Cochrane review of 13 RCTs involving 915 participants found no statistically significant effect of milk thistle on mortality or complications

in patients with alcoholic and/or hepatitis B or C liver diseases.

The authors of a 2008 systematic review of 19 trials concluded that it is reasonable to employ the milk thistle constituent silymarin as a supportive element in the therapy of *Amanita phalloides* (mushroom) poisoning and (alcoholic and grade Child-Pugh A) liver cirrhosis.

Milk thistle and statins

Milk thistle does not appear to have much effect on most CYP450 isozymes, although there is evidence that suggest that it can inhibit CYP 2C9. Consequently, milk thistle may alter the effects of statins that are metabolised by CYP2C9, for example fluvastatin and rosuvastatin. In addition, milk thistle has been shown in vitro to be a potent inhibitor for enzymes responsible for glucuronidation and this may affect the metabolism of atorvastatin, lovastatin and pravastatin. However, more supporting clinical data are needed to determine dosage adjustment of statins in patients taking statin and milk thistle concomitantly. Until more is known, they

should be monitored for drug efficacy and adverse effects. Aminotransferases and creatine kinase concentrations should be monitored from time to time and patients should notify doctor if there is any sign of myalgia.



Milk Thistle thrives well even in poor soil. One plant can produce up to 6000 seeds.



Clinical Considerations

Milk thistle should be used with caution in patients with hypersensitivity to plants of the *Asteraceae/Compositae* family, for example aster, daisy and sunflowers since anaphylaxis has been reported.

Milk thistle can have oestrogenic effects. Therefore, it is important to avoid in patients with hormone-sensitive conditions, for example breast cancer, endometriosis and fibroids.

Pharmacy Staff Movement

New Staff:

Pirapavathy

Thannimalai

(Pen. Pegawai Farmasi U29)



Newer drugs available in our Formulary

1. Inj Alprostadil 500mcg/mL
2. T. Levothyroxine 25mcg
3. T. Sevelamer 800mg



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Please visit <http://www.mimsgateway.com/Malaysia/Overview.aspx>

Email: h.langkawi@kdh.moh.gov.my
Password: password1



By Eeow Zhi Hui

Motion Sickness

Motion sickness is an unpleasant condition that occurs when persons are subjected to motion or the perception of motion. It is a common problem in people traveling by car, train, airplanes and especially boats.

This condition can be debilitating in which most of the patients report on generalized feeling of unwellness, drowsiness, fatigue, irritability, decreased participation in group activities and may persist even after the motion stimuli has ended.

Generally, anyone can get motion sickness, but pregnant women, very young children and people with migraines usually are more vulnerable.

Hyoscine hydrobromide and **sedating antihistamines (pheniramine /**

prometazine) are used in motion sickness due to their central anticholinergic effect. As motion sickness induces gastric stasis, it slows drug absorption. Therefore, medications are more effective if given 30 minutes before boarding .

Australian Medicines Handbook recommends hyoscine hydrobromide dose to be 0.3mg for the first dose and to be repeated in 4-6 hours



when necessary. Alternatively, pheniramine can be prescribed at a dose of 22mg every 8 hourly.

However prometazine is not the preferred choice of drug in treating motion sickness as it can lower the seizure threshold in some patients. Nevertheless, it still can be prescribed at the dose of 25mg two hours before traveling.

Among all three recommended drugs, pheniramine is considered to be the safest drug for pregnant women. As promethazine is shown to be expressed in breast milk in some studies due to its lipophilicity, hence it should be used with caution. Monitor infants for adverse affect, is any.