

encapsulate

Welcome to 'encapsulate'

Welcome to the fourteenth edition of **encapsulate**. This issue looks at the medication safety concerns linked with borrowing and lending pharmacy stock; introduces nebivolol, a recently approved beta-blocker; and highlights medications associated with falls, a critical risk-prevention factor in this costly area of healthcare.

You can obtain further copies of **encapsulate** via our website - www.slade.net.au. Please forward any comments or suggested topics for our next issue to marketing@slade.net.au.

Medication Safety Incidents Arising from Borrowing and Lending Stock

Safety concerns arising when medications are borrowed and lent between wards were highlighted recently in a safety alert issued by the Institute for Safe Medication Practices (ISMP)ⁱ. Borrowing medications is used as a workaround by nursing staff to speed the process of administering medications when they are not present on the ward. Although it is effective in reducing the time until medications are administered, the process also increases the risk of medication errors occurring.

The ISMP notes a number of common types of medication errors associated with the practice of borrowing. These include nursing staff borrowing incorrect medications which are subsequently administered to patients, nursing staff administering medications to which patients were allergic which would have been detected had the medications been sourced from pharmacy, and administering borrowed medications to patients which result in serious drug interactions which would likewise have been detected by the pharmacist during the dispensing process.

To address the safety issues surrounding the practice of borrowing and lending medications, the ISMP makes a number of recommendations:

- Remedy the reasons for borrowing by learning the reasons why medications are borrowed

from unauthorised sources and addressing them in a collaborative manner. If dispensing times are perceived to be an issue, gain consensus from all involved as to acceptable dispensing times and set up measures to determine if a problem exists. Uncover and address misconceptions by nursing staff of the clinical significance of providing therapy within a certain time period when medications are commenced. If awaiting order clarification, pharmacists should communicate with nursing staff the reason for any delay.

- Ensure nursing staff and other practitioners understand the risks and consequences of borrowing medications and ensure that pharmacists understand the risks and consequences of delayed supply. Report incidents where supply is delayed to improve the medication supply system.
- Understand the reasons why a medication may be not available such as when a medication is administered but not signed for, the order is being reviewed for safety or clinical reasons or the order not being received by pharmacy.
- Eliminate unauthorised access to medications by discouraging the accumulation of excess stock and regularly removing discontinued, unused or expired medicines.

It is important that nursing staff, medical officers and pharmacists are aware of these issues so that medication safety can be improved in hospitals, thereby reducing the risk of incidents occurring.

Nebivolol

Nebivolol (Nebilet[®]) is a beta-blocker recently approved for use in Australia for the treatment of stable chronic heart failure as an adjunct to standard therapy in patients 70 years of age or older, and the treatment of essential hypertension in patients of all ages. It acts mainly as a receptor blocker at the beta-1 adrenergic receptor, but also has effects at the beta-2 receptor at higher doses, and has vasodilatory properties through effects on the nitric oxide pathway.^{ii,iii}

encapsulate

In the treatment of hypertension, 5mg of nebivolol has similar response rates to other beta blockers, calcium channel blockers and losartan, however it is reported to have response rates superior to that of ACE inhibitors.ⁱⁱⁱ

In clinical trials, the most common reported adverse events were aggravated cardiac failure, dizziness, bradycardia and hypotension. Spontaneously reported adverse events have included abnormal liver function, acute pulmonary oedema, acute renal failure, myocardial infarction, Raynaud's phenomenon, thrombocytopaenia and skin disorders. However because these events were reported voluntarily from a population of unknown size, it is not possible to determine their frequency or establish a causal relationship with nebivolol.^{ii,iii}

Nebivolol is metabolised partly by the CYP2D6 enzyme, meaning that drugs that inhibit CYP2D6 activity, such as fluoxetine, paroxetine, quinidine, thioridazine and cimetidine, can increase the concentration of nebivolol thereby increasing its antihypertensive effects. In addition, nebivolol is not recommended to be co-administered with verapamil, diltiazem, class I antiarrhythmic drugs, centrally acting antihypertensive drugs and other beta blockers.^{ii,iii}

Contraindications to the use of nebivolol include liver insufficiency or impairment, acute heart failure, cardiogenic shock, episodes of heart failure decompensation requiring IV inotropic therapy, sick sinus syndrome, second and third degree heart block without a pacemaker, history of bronchospasm, untreated phaeochromocytoma, metabolic acidosis, bradycardia, hypotension and severe peripheral circulatory disturbances.^{ii,iii}

Nebivolol is available in 1.25mg, 5mg and 10mg tablets and is available as a streamlined authority item on the PBS.ⁱⁱ For further information, please refer to the approved product information.

Medications Related to Falls

Preventing falls is an important aspect of care within hospitals that can contribute significantly to the clinical and cost outcomes of healthcare. Medications are one of a number of patient specific risk factors, which, when combined with other patient specific or environmental risk factors, can increase a patient's risk of falling.

Classes of medications commonly associated with falls include antihypertensives, diuretics, sedatives, antipsychotics, opioid analgesics, antiparkinsonian medications, anticonvulsants, antidepressants, nitrates and laxatives^{iv}.

It is important that nursing staff consider these medications when caring for patients at risk of falls, and implement strategies to address the underlying personal and environmental risk factors. For many of the agents, it is particularly important that extra care or supervision is provided when patients are newly commenced on the medications; have had doses of the medications recently increased, or when they are receiving particularly high doses.

For further advice on managing medications related to falls, please contact your pharmacy department.

i Institute for Safe Medication Practices. Shakespeare was on target – Don't be a borrower or a lender.
<http://www.ismp.org/Newsletters/acutecare/articles/20091119.asp>
[Accessed 29/3/10]

ii Approved Product Information. <http://www.mimsonline.com.au>
[Accessed 29/3/10]

iii Australian Prescriber: Newly Marketed Drugs.
http://www.australianprescriber.com/latest_drugs/nebivolol
[Accessed 29/3/10]

iv Woolcott JC et al. Meta-analysis of the Impact of 9 Medication Classes on Falls in Elderly Persons. Arch Intern Med 2009; 169: 1952-1960.