Medication Incidents Reporting Programme Bulletin

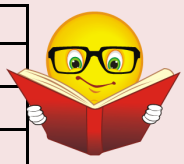
BULLETIN 24 JANUARY 2010

Safety Solutions on High Risk Medications

High risk medications are medications that have the highest risk of causing injury when misused. Errors with these products are not necessarily more common, but the consequences are clearly more devastating. In this regard, the Hospital Authority (HA) has complied a list of High Risk Medications based on the reported local incidents as well as a review of overseas recommendations and alerts. In order to allow sufficient time for hospitals to review and take appropriate actions, the Safety Solutions will be released according to the following schedule.

Link to: http://qsdportal/psrm/Website/PSRM%20Website/MSC_Guidelines.html

	Categories of medications	Schedule
1	Concentrated electrolytes	Oct 2009
2	Cytotoxic chemotherapy	Oct 2009
3	Vasopressors & inotropes	Nov 2009
4	Anticoagulants including heparin	Nov 2009
5	Drugs commonly associated with allergy	Dec 2009
6	Neuromuscular blocking agents	Jan 2010
7	Oral hypoglycaemics	Feb 2010
8	Insulins	Feb 2010
9	Narcotics/ opioids	Mar 2010

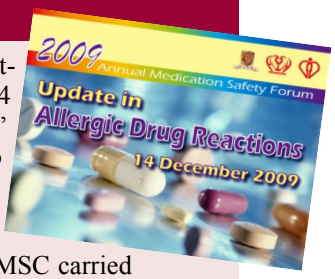


The Safety Solutions are system improvement strategies for minimizing risks in the use of high risk medications that supplement the Drug Administration Report 2005. Hospitals are recommended to take reference to the Safety Solutions and are encouraged to implement risk reduction programmes which are appropriate to the local settings.

In view of the recent incidents of Midazolam overdose that occurred locally as well as in the UK during IV sedation involving the usage of wrong strength, the Medication Safety Committee (MSC) will issue a memo soon for the new recommendation on Midazolam injection. This recommendation is included in the safety solutions under category 9.

There are currently 3 different Midazolam preparations available in HA, i.e. 1mg/mlx5ml, 5mg/mlx1ml and 5mg/mlx3ml. It is recommended that each ward should only keep one strength (5mg/ml) in either 1ml, 3ml or both according to their own needs. The 1mg/ml preparation is not to be kept in any units. Exemption is only applicable to area where double dilution is required such as neonatal area, but local DTC approval should be obtained.

Medication Safety Committee



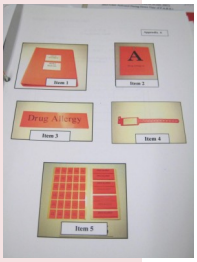
The 2009 Annual Medication Safety Forum co-organized by the Medication Safety Committee and the Prince of Wales Hospital Poison Treatment Centre was successfully held on 14 December 2009. The main theme of this year's forum was "Update in allergic drug reactions" covering clinical knowledge on allergic drug reactions, experience sharing and approaches to prevent drug allergy-related errors. Over 300 healthcare professionals from the HA hospitals, private hospitals and the Department of Health participated in the forum.

Hospital visits by MSC are being conducted on a quarterly basis. The MSC carried out the second and third hospital visits to NTWC and KWC on 16 Jul and 21 Sep 2009, respectively for post-implementation review of the issued guidelines. The goals of the hospital visit were to review the implementation of the policies and guidelines issued by the MSC and other medication safety-related issues, to collect feedbacks from hospitals and to share best practices across the HA.

During each hospital visit, a forum would be held at the hospital so that visiting team and frontline staff could share and feedback their views on medication safety-related issues.

Medication Safety Committee (cont'n)

On 16 Jul 09, the MSC team visited the medical & geriatric unit, surgical unit, pharmacy and the Oncology Day Centre of TMH in the morning and visited the psycho-geriatric unit, general psychiatric/ admission ward and pharmacy of CPH in the afternoon. On 21 Sep 09, the team visited the surgical unit, out-patient pharmacy, developmental disabilities unit and ICU of CMC in the morning and visited the department of rehabilitation & extended care, TB & chest unit, geriatric day hospital and pharmacy of WTSH in the afternoon.



During the two visits, the team observed many good practices and initiatives exhibited by the hospitals to enhance medication safety. At the same time, some opportunities for improvements were also identified and recommendations were made.

Some of the good practices observed during the visits to NTWC and KWC are highlighted as follows:

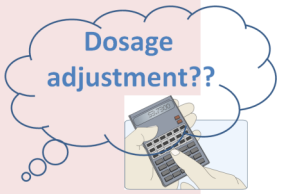
1. The presence of Drug Committee to enforce HA-wide recommendation and establish local policies.
2. Medication safety training incorporated in the orientation programme of housemen and medical officers.
3. Extensive system on drug allergy alert e.g. red drug allergy patient wrist band, red alert notice in patient's chart, red drug allergy warning on the wall behind patient's bed and drug allergy reference charts showing different groups of antibiotics and NSAIDs.
4. Standardized location and contents of the emergency trolley including e-kit with Twist Lok® throughout hospitals.

Case Sharing

Wrong dosage

Overdose of Enoxaparin was prescribed to a patient with renal impairment

A 68-year-old patient with moderate renal impairment collapsed and was admitted to hospital. On the first day of hospitalization, she was prescribed with Enoxaparin 60mg SC for DVT prophylaxis and one dose was given at that night. On the second day, a medical officer wrote down "for DVT prophylaxis (regular)" on her medical notes and prescribed Enoxaparin 60mg Q12H SC to her. At noon, the second dose of Enoxaparin was given to her and she was then sent to OT. She developed refractory bleeding soon after the operation and then resulted in shock, severe acidosis and renal failure. Massive transfusion of fluids and blood products and treated with repeated doses of vasopressors. On the third day, the patient continued to develop severe shock from on-going bleeding. She was in extremis when taken back to OT. She had refractory intra-operation bleeding and nearly arrested towards the end of the operation. Her condition was poor when transferred to ICU for higher care.



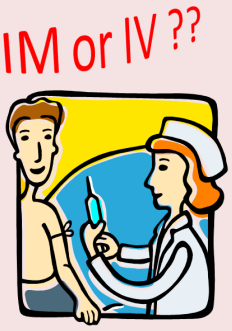
RECOMMENDATIONS

- ☑ Be aware that certain drugs require renal dosage adjustment for renally impaired patients.
- ☑ Verify dosage before administering drugs and consult supervisor or pharmacist for renal dosage recommendation.

Wrong route of administration

Adrenaline via intramuscular injection was mistakenly administered intravenously

A patient attended A&E department due to urticaria over the body for a few days. He was given IV chlorpheniramine (Piriton) and hydrocortisone but symptoms still persisted. The physician planned to prescribe Adrenaline (1:1000) 0.5ml IM but wrongly wrote down IV on the prescription, so IV adrenaline was given to him. After injection, the patient felt dizzy and ECG showed ST depression and elevation of Troponin I. Although he was alert and haemodynamically stable, he was subsequently transferred to CCU for higher level of care.



RECOMMENDATIONS

- ☑ Be cautious in prescribing and administering especially for high risk medications
- ☑ Consider adding warning labels on the cabinet storing high risk medications

Wrong Medication Dispensed

Gliclazide tablet was mistakenly dispensed to patient

A patient was admitted for Idiopathic Thrombocytopenic Purpura (ITP) and was discharged after six days of hospitalization. Prednisolone 20mg BD was prescribed to her upon discharge. However, one day after discharge, she was re-admitted to A&E department due to symptomatic hypoglycemia, with H'stix level of 0.7. She was with residual hypoglycemia despite dextrose infusion but she was stabilized after one day.

Patient's urine sample was sent for toxicology test and the result showed that presence of gliclazide in the sample. It was suspected that the identity of tablets prescribed last time was incorrect, therefore staff sent the concerned tablets for drug identification. It was confirmed that the tablets prescribed on last discharge were actually gliclazide instead of prednisolone.

RECOMMENDATIONS

- ☑ Use clear and distinct labeling for look-alike sound-alike (LASA) drugs
- ☑ Place LASA drugs apart in the pharmacy
- ☑ Check carefully for drug identity before dispensing, particularly for high risk medications
- ☑ Avoid distraction during drug checking process

The Number of Incidents by Severity (Jan – Jun 2009)	
Severity Index	**Jan - Jun 2009**
0	116
1	524
2	82
3	19
4	4
5	0
6	0

Top 3 Most Common *PRESCRIBING ERROR* (Jan – Jun 2009)

Position	In-patient	Out-patient
No. 1	Wrong Strength/ Dosage (24%)	Wrong Patient (40%)
No. 2	Wrong Patient (17%)	Wrong Strength/ Dosage (15%)
No. 3	Wrong Drug (15%)	Wrong Frequency (13%)

Top 3 Most Common *DISPENSING ERROR* (Jan – Jun 2009)

Position	In-patient	Out-patient
No. 1	Wrong Drug (52%)	Wrong Label Information (26%)
No. 2	Wrong Strength/ Dosage (17%)	Wrong Strength/ Dosage (21%)
No. 3	Wrong Label Information (11%)	Wrong Drug (19%)

Top 3 Most Common *ADMINISTRATION ERROR* (Jan – Jun 2009)

Position	In-patient	Out-patient
No. 1	Dose Omission (24%)	Wrong Dose (31%)
No. 2	Extra Dose (14%)	Wrong Drug (13%) Extra Dose (13%)
No. 3	Wrong Dose (11%)	Dose Omission (9%)

Summary of Incidents by Most Common Underlying Causes (Top 5) in Jan – Jun 2009

Underlying Causes			
In-patient	**Total 374**	**Out-patient**	**Total 156**
1. Failure to comply with policies or procedures	45%	1. Failure to comply with policies or procedures	44%
2. Failure in communication/misinterpretation of order	17%	2. Distraction	21%
3. Distraction	15%	3. Incorrect computer entry	16%
4. Similar drug name/appearance	7%	4. Failure in communication/misinterpretation of order	11%
5. Inadequate knowledge/skills	7%	5. Inadequate knowledge/skills	9%