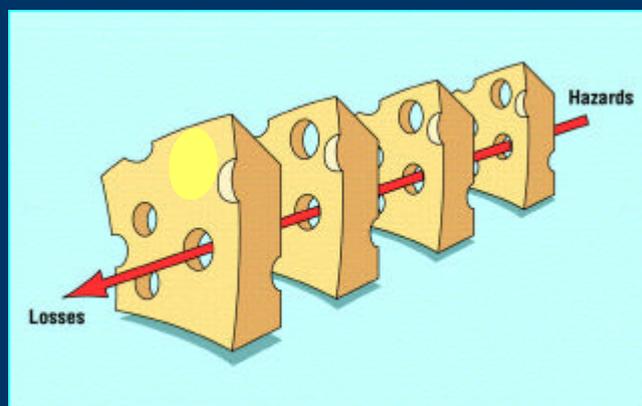


Medication Safety Today



Issue 14

The Northern Ireland Medicines Governance Team Newsletter

February 2006

Three steps to ...

Vancomycin, clarithromycin and a number of other intravenous medicines are prepared by reconstituting dry powder to make a concentrated solution, which **must** then be further diluted before being administered as an infusion. Medication incidents have been reported where the concentrated solution has been administered 'neat' as a short bolus, rather than as the dilute infusion.

These incidents can have serious consequences for patients for example:

- Vancomycin administered undiluted over a short period of time can result in severe hypotension (including shock and cardiac arrest), wheezing, dyspnoea, urticaria, pruritis, flushing of the upper body ('red man' syndrome), pain and muscle spasm of back and chest.
- Clarithromycin administered undiluted over a short period of time can result in pain, phlebitis and cardiac arrhythmias.

To avoid these incidents, always follow the steps below when preparing and administering these medicines.

		Vancomycin	Clarithromycin
Step 1 	Reconstitute dry powder	Add 10ml water for injection to each 500mg vial	Add 10ml water for injection to 500mg vial
Step 2 	Further dilution	Dilute reconstituted powder with sodium chloride 0.9% or glucose 5%, to a concentration of up to 5mg/ml* e.g. for 500mg dose - add to 100ml for 1g dose - add to 250ml	Dilute reconstituted powder with sodium chloride 0.9% or glucose 5% to a concentration of 2mg/ml. i.e. Add 500mg dose to 250ml
Step 3 	Administer by intravenous infusion	Infuse over at least 60 minutes. For doses over 500mg - not greater than 10mg/minute	Infuse over 60 minutes

* For fluid restricted patients, see BNF Appendix 6.

Always check how a medicine should be prepared and administered. Use the package insert, the Summary of Product Characteristics, Appendix 6 of the BNF or contact Medicines Information.



Calculations



1. A 63kg man requires atenolol via IV infusion. The dose is 150micrograms/kg. The infusion will be given in sodium chloride 0.9% over 20mins. Atenolol injection is available as 5mg in 10ml ampoule. How many mls of atenolol are required to make up the infusion?
2. A 66kg adult requires enoxaparin 1.5mg/kg for treatment of a DVT. What dose do they require?
3. A patient requires risperidone 500 micrograms. They are to receive the oral liquid which is labelled 1mg/ml. How many mls are required?
4. A patient is to receive OxyNorm[®] injection 7.5mg over 24 hours by subcutaneous infusion. The product is available as 10mg/ml, 2ml ampoules. How many mls are required to make up the infusion?

Answers overleaf.

Update on Revaxis[®] and Repevax[®]

Back in November 2004, Medication Safety Today highlighted the similarity in packaging and names between two different vaccines, Revaxis[®] and Repevax[®]. In 2005, the National Patient Safety Agency also issued a patient safety alert about the risk of confusion between these two products.

As a result the manufacturer has changed the packaging of Revaxis[®] to make it more distinct from Repevax[®]. However the names of the two vaccines remain very similar. In addition the outer cartons for bulk packages of the two vaccines are both plain white cardboard.

Safety Tips

-  Continue to take care when receiving, issuing, prescribing and administering these two vaccines.
-  Be aware of the risk of confusion.
-  Where possible display alert notices in storage locations.

The abbreviation saga continues...

The use of unapproved abbreviations continues to feature in reported medication incidents. Some of these examples include:

60

Problem: This has been used for hourly. Where the 'o' is written larger than intended, it appears as though a zero is added. Thus 6 hourly has been read as 60, causing confusion or administration at the wrong rate.

0-0-1

Problem: This has been used to indicate 'one at night'. This can cause wrong dosing or omitted doses to occur.

SSRI

Problem: This has been used to indicate sliding scale regular insulin or selective-serotonin reuptake inhibitor, leading to misinterpretation.

ow

Problem: The use of 'ow' to indicate 'once weekly' can lead to the wrong frequency if it is misread as 'on', sometimes used to indicate 'every night'.

BDE

Problem: This has been used to indicate bendroflumethiazide or benzodiazepine therapy, leading to misinterpretation.

ASA

Problem: This has been used to indicate aspirin or 5-aminosalicylic acid and could lead to the wrong medicine being administered.

Safety Tips

- ✔ Safe medication practice does not support the use of unapproved abbreviations.
- ✔ Do not abbreviate medicine names.
- ✔ Directions for medicines should preferably be in English. If Latin abbreviations are used, only those listed on the inside back cover of the BNF are acceptable.
- ✔ Continue to report and provide examples of abbreviations that contribute to medication incidents.

If you have any comments on this newsletter, please contact Sharon O'Donnell, Medicines Governance Pharmacist on ext 2600 at Belfast City Hospital or by e-mail at Sharon.odonnell@bch.n-i.nhs.uk.

The Medicines Governance Team website and previous newsletters can be viewed at www.dhsspsni.gov.uk/index/pas/pas-governance.htm

Answers

(1) 18.9ml (2) 100mg (3) 0.5ml (4) 0.75ml

What's the K⁺ontent?



The potassium content of medicines is often overlooked and this may contribute to increased plasma potassium levels. High potassium containing products often require dose reduction or avoidance in conditions such as renal impairment or hyperkalaemia. Some examples of potassium containing medicines include:

Preparation	Potassium Content
Fybogel Mebeverine [®]	7 mmol / sachet
Regulan [®]	6.4 mmol / sachet
Movicol [®]	5.4 mmol / sachet
Phosphate-Sandoz [®]	3.1mmol / tablet
Addiphos [®]	30 mmol / 20ml

Compare these to Slow K[®] which contains 8mmol potassium per tablet.

Safety Tips

- ✔ Be aware of high potassium containing products.
- ✔ Review and consider alternatives if hyperkalaemia develops.
- ✔ Use with caution in patients with renal impairment.
- ✔ Salt substitutes (e.g. LoSalt[®]) contain significant amounts of potassium. Patients with renal failure should not use these.

Refer to CREST guidelines for the treatment of hyperkalaemia in adults for more information.

Pick and mix



Increasingly medicines are prescribed, dispensed and administered with the support of electronic software.

This has provided significant improvements in the legibility and readability of medicines names on prescriptions, orders, dispensing labels and administration records. However as with many developments designed to minimise risk, new and different risks may present themselves.

One risk is in the selection of the medicine name. Often this involves typing in the first few letters of the medicine. This brings up a 'drop-down menu' or 'pick-list' from which the medicine is selected. Below are some of the medication incidents that have been reported:

penicillamine	picked instead of	penicillin V
quinidine	picked instead of	quinine
sulfasalazine	picked instead of	sulfadiazine
pregabalin	picked instead of	Pregaday [®]
mercaptopurine	picked instead of	mercaptopurine

Medicines, which have similar names and similar strengths, make the risk of confusion even greater.

Always check you have selected the correct medicine and read the full medicine name.