Medication Safety Today

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Hyperkalaemia – isn't this sorted?

Serious overdoses of insulin have occurred in the treatment of hyperkalaemia. Hyperkalaemia kits and treatment guidelines were implemented a number of years ago to reduce the risk of recurrence. With all the effort that has been made it is easy to become complacent about this risk.

Make sure that in adult wards and clinical areas:

- Hyperkalaemia kits (shown below) are available and easily accessible; do not lock them away in medicine cupboards.
- Use the kit every time you are treating hyperkalaemia in adults.
- If you know that somebody is being treated for hyperkalaemia, ensure the kit is being used and challenge anybody treating hyperkalaemia without the kit.
- New staff in your ward know where the kit and treatment guidance are located.
- GAIN 'Guidelines for the treatment of hyperkalaemia in adults' are available.
- GAIN 'Emergency management of hyperkalaemia in adults' posters are displayed.

http://www.gain-ni.org/Library/Guidelines/hyperkalaemia_guidelines.pdf

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@belfasttrust.hscni.net Further copies of this newsletter can be viewed at www.medicinesgovernanceteam.hscni.net or on your Trust intranet.

Rates are on the up!

At what rate, expressed in ml/hour, would you set the following continuous infusions?

1. Glyceryl trinitrate 10micrograms/min, available as 50mg in 50ml.
2. Insulin 4units/hr available as 50units in 50ml sodium chloride 0.9%.
3. Dopamine 300micrograms/min, available as 200mg in 50ml in glucose 5%.
4. Aminophylline 30mg/hr available as 250mg in 50ml glucose 5%.

Answers at the bottom of the page

Midazolam injection in Palliative Care

There are three strengths of midazolam injection and incidents have occurred where these have been confused. Much work has been done to implement the NPSA Rapid Response Report: *Reducing the risk of overdose with midazolam injection in adults*[1] and this has involved rationalising strengths.

Midazolam 1mg/ml is the standard concentration used in the majority of wards and use of higher strengths is restricted. The preferred strength for use in palliative care is 10mg/2ml. This more concentrated preparation enables palliative care patients to receive midazolam in:

- PRN doses of 2.5-5mg in a single subcutaneous injection.
- Larger doses over 24 hours in a subcutaneous syringe driver.
- 10mg doses for seizures or massive haemorrhage either subcutaneously or intramuscularly in a single injection.

Follow your hospital procedure for obtaining supplies of midazolam 10mg/2ml injection when required for palliative patients. Return this higher strength to Pharmacy when it is no longer required to minimise confusion with the 1mg/1ml strength.

1.http://www.nrls.npsa.nhs.uk/resources/?entryid45=59896&q=0%c2%ac midazolam%c2%ac

Answers (1) 0.6ml/hr (2) 4ml/hr (3) 4.5ml/hr (4) 6ml/hr

Too hot, too cold or just right?

It is not just Goldilocks that needs things to be at the right temperature. Medicines must be stored at the correct temperature to maintain their potency. Most medicines are stored at room temperature however some medicines require storage below a certain temperature, in the fridge or even in the freezer.

- When putting medicines away, check that the location matches the storage requirements of the medicine. The storage requirements should be printed on the packaging.
- For medicines that require storage in the fridge or freezer, ensure the temperature is monitored according to Trust policy, the temperature is recorded and any action taken if the temperature is outside the required range.
- If the temperature is outside of range, quarantine the stock and contact Pharmacy for advice on whether or not the medicines can be used. Establish if possible the length of time medicines would have been exposed to temperatures outside the required range.
- If the fridge or freezer is not directly wired in, clearly label plugs and sockets for fridges and freezers to reduce the risk of accidentally switching off.
- When removing a medicine from a fridge or freezer, confirm the medicine 'feels cold'. If not, check the temperature.
- Do not overstock fridges, so as to allow air circulation.

Lead, don't trail

For medicine doses

- ✓ always have a 'leading' zero in front of a decimal point, for example '0.5ml', otherwise '.5ml' may be misread as 5ml
- × don't put a 'trailing' zero after a decimal point as '5.0mg' may be misread as 50mg
- ✓ avoid using decimal points where possible, for example write 500 microgram instead of 0.5mg.

Book Club

The National Patient Safety Agency has published *Medical Error: What to do if Things go Wrong: a Guide for Junior Doctors*[1].

The guide is aimed at junior doctors, who are often considered to be in the best position to identify how things could work better on the ground. It outlines the key steps to follow if something does go wrong, including communication, documentation, reporting, learning and how to handle complaints. It includes case studies based on real-life situations and senior doctors discuss mistakes they have made and describe how they learnt from them.

1. http://www.nrls.npsa.nhs.uk/resources/?EntryId45=74246

Stop the clot

There is ever increasing awareness of the need to ensure appropriate venous thromboembolism (VTE) prophylaxis for adult patients admitted to hospital.

Medication incidents involving enoxaparin for this indication have been reported. These include;

- patients not assessed for thromboprophylaxis
- enoxaparin not prescribed for patients assessed as requiring thromboprophylaxis
- incorrect dose and frequency of enoxaparin prescribed due to confusion between different dosing schedules for prophylaxis and treatment
- overdose or underdose of enoxaparin prescribed due to patient's renal function and weight not being considered
- enoxaparin administered at the wrong time in relation to timing of surgery/lumber puncture/spinal/epidural.

Safety tips

- ✓ Ensure VTE risk assessment is completed.
- ✓ Ensure appropriate thromboprophylaxis is prescribed in accordance with risk assessment.
- ✓ Check patient's renal function and weight to confirm appropriate dose.
- ✓ Remember enoxaparin for thromboprophylaxis is a single daily dose.

Screen test

Electronically generated prescriptions and electronic prescribing systems are increasingly used in hospitals to improve medication safety. While these systems address many of the legibility issues that exist with handwritten prescriptions, medication incidents can still occur in selecting the correct medicine, dose, frequency, route and other prescription details. This can often be related to the design of how the information is presented on the screen.

'Design for patient safety: Guidelines for the safe on-screen display of medication information'[1] has been published with a series of recommendations to avoid medication errors related to how medication information is displayed on screen in electronic systems. Many of the issues highlighted are exactly the same as those seen with handwritten prescriptions, for example use of abbreviations and similar medicine names. To realise the full potential of electronic systems, it is important that they do not repeat the same mistakes made with handwritten prescriptions. This report is a useful checklist for anyone involved in introducing electronic systems for prescribing and as a tool to review and improve those systems already in use.

1. http://www.nrls.npsa.nhs.uk/resources/collections/design-for-patient-safety/?entryid45=66713