Health and Social Care Board

Medicines Safety Matters

Newsletter for Primary Care Prescribers, Practice Staff & Community Pharmacists

Please share this important safety newsletter with staff

Vol 2 Issue 4 November 2012

Focus on Insulin

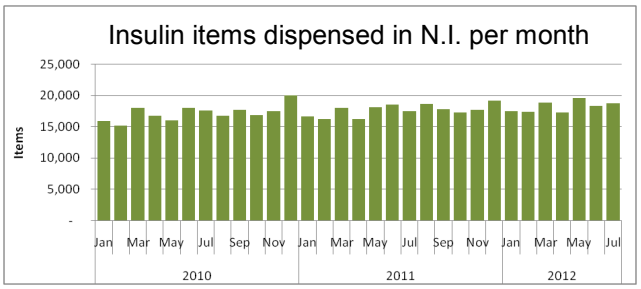
Between August 2003 and August 2009 the National Patient Safety Agency (NPSA) received 3,881 wrong dose incident reports involving insulin.

The NPSA alert "Safer Administration of Insulin" (2010) has highlighted the following areas of risk:

- Insulin doses must be measured and administered using an insulin syringe or insulin pen device. IV syringes must never be used
- The term "Units" must always be used
- Staff treating patients with insulin must have adequate supplies of insulin syringes and needles
- An insulin syringe must always be used to measure and prepare insulin for an intravenous infusion
- Training should be in place for all healthcare staff expected to prescribe, prepare and administer insulin
- Policies and procedures should be reviewed to ensure compliance with the above.

http://www.nrls.npsa.nhs.uk/resourcesentryid45=74287&p=5

The maladministration of insulin is also included in the list of "Never Events" NHS 2012/13. "Never Events" are defined as serious, largely preventable patient safety incidents that should not occur if the available preventative measures have been implemented by healthcare providers.



There are 15,000 to 20,000 insulin items prescribed and dispensed per month in primary care in Northern Ireland. With such a high volume of items, there is an increased risk of errors when prescribing, dispensing and administering insulin, so it is vital that all healthcare professionals involved in these areas are aware of the potential risks and take steps to minimise these.

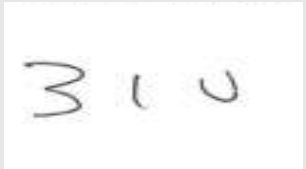
Use of abbreviations

A recent BMJ article[1] highlighted the risks in using insulin dose abbreviations:

6 units?
or
60 units?

3 international units?
or
31 units?

10 units?
or
100 units?



3 international units?
or
31 units?
or
310 units?

Use of abbreviations such as 'U' or 'IU' for 'units' has led to 10-times dose administration errors.

In a local hospital a patient received 40 units of insulin instead of the 4 units prescribed. This error was due to the nurse misreading the dose which was written as 4U.

Errors can occur when the letter 'U' is written next to the intended insulin dose as it can be read as an extra '0' and an overdose administered in error e.g. 10U is read as 100.
'IU' may also be confused for '10' or '0'. The dose must always be written as 'units' and abbreviations must not be used.

Learning points

Doses must always be written as 'units'

Abbreviations must not be used.

[1]BMJ 2010;341:c5269 http://www.bmj.com/content/341/bmj.c5269

Inappropriate use of non-insulin (IV) syringes

Errors have occurred where patients have received an incorrect dose when the wrong syringe type was used.

A patient received 60 units of Actrapid® insulin (100units/ml) when 0.6mls was measured using an IV syringe instead of the correct dose of 6 units.

Insulin syringes have their markings based on units not volume, and have a capacity of 1ml or less. Intravenous syringes are marked in volume graduations.

Adequate supplies of insulin syringes and needles should be made available to all staff treating patients with insulin. Staff should also be aware of how to obtain urgent supplies.

Learning points

- Always use an insulin syringe or insulin pen device to measure insulin doses
- Never use an IV syringe
- Staff should be able to identify the differences between IV and insulin syringes
- Using individually wrapped sterile insulin syringes and separate storage areas will reduce the risk of mis-selection.

Similar sounding insulin products

Since 2010 eleven adverse incidents have been reported to the HSCB where the wrong insulin has been dispensed, due to mix ups between products of similar sounding names. The most common errors have occurred with Humulin®/Humalog® and Actrapid®/ Novorapid®preparations.

Care must be taken when prescribing, dispensing and administering insulin that the correct product is chosen. Many insulin products have similar sounding names, strengths and packaging . It is important that the complete insulin name is used when prescribing or dispensing as product names can inadvertently be shortened e.g.. Humalog® Mix 25 has been incorrectly shortened to Humalog®

A check must always be carried out to ensure that the correct product and dose is chosen for the correct patient.

Learning Points

- Take care when prescribing, dispensing and administering insulin to ensure the correct insulin and device is chosen
- Prescribe by brand name to avoid confusion
- It is good practice for community pharmacies to have systems in place for double checking any insulin dispensed. It is also good practice to check with the patient what insulin they are using and to show them the pen/container and confirm that patient is expecting the product

Use of insulin devices

Adverse incidents have been reported where the strength of the insulin is correct but the wrong type of device has been selected:

In one case the patient was partially sighted and was trained to use an Autopen® pen that dispensed one unit of insulin per “click” of the pen. However on one occasion they received the correct insulin but in an Autopen® device that administered 2 units per “click”. They therefore received double the dose required.

In another case the wrong device was dispensed and the patient was unable to administer the dose required because the needles they had did not fit the pen.

Insulin pens can either be disposable and come pre-filled with an insulin cartridge, or pens which can be reused by replacing the cartridges which are pre-filled with insulin. These pens meter the required dose but training is required to ensure the devices are used safely. Mis-operation of insulin pens may result in omitted or delayed doses or an incorrect dose being administered. It is also important to ensure that the insulin pen is read the correct way round as 12 units can look like 21 units if the pen is held upside down.

Learning points

- Staff involved in the administration of insulin using insulin pens, or patients prescribed these devices should be trained and be competent in the use of the device
- Patients should not be changed to a new device until they have received adequate training
- At point of dispensing it is good practice to show the insulin and device to the patient to confirm that they are correct.

Communication and recording

Adverse incidents have been reported where the wrong type of insulin has been prescribed in primary care after a change was recommended by secondary care. It is vital that:

- Hospital letters or out-patient referrals are clear and are correctly transcribed into the patient record, any queries should be clarified with the hospital doctor prior to prescribing.
- Patients and carers are clear about the timing and doses of insulin that are prescribed
- Robust communication and recording systems must be in place and regularly reviewed to ensure doses are not duplicated or omitted.

Discussions with the patient are useful as they can often highlight a discrepancy and thus prevent an error occurring.

Learning point

It is important to have good policies and procedures for follow up of diabetic patients whether they are reviewed in primary care or at a diabetic clinic in secondary care.

Training

The NPSA alert "Safer Administration of Insulin" (2010) requires that a training programme should be put in place for all healthcare staff (including medical staff) expected to prescribe, prepare and administer insulin. Training resources are available from a number of sources e.g.

- http://www.diabetes.nhs.uk/safety/
  Safe Use of insulin
  Safe Use of Intravenous Insulin Infusions in Adults
  Safe Use of Non-Insulin Therapies for Diabetes
  Safe Management of Hypoglycaemia

- www.npci.org.uk
  National Prescribing Centre, various resources relating to diabetes, insulin and risk management

- www.nicpld.org
  NICPLD workbook on Evidence- based Management of Diabetes

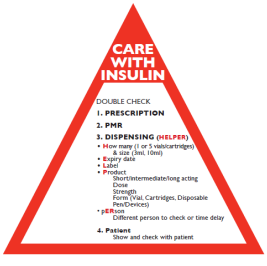
Pharmacy Fridges–Promoting the safe use of insulin

Good Practice Points:

- Community pharmacy fridges should be carefully stocked, not be overcrowded and should not contain inappropriate items such as food
- Similar looking or sounding products should be stored separately from each other or some form of a marker used to highlight these products, to reduce the chance of a selection error occurring
- Dispensed medicines waiting collection should be kept separate from stock
- Some pharmacies use clear plastic bags for dispensed insulin to facilitate a final check at point the of issue to the patient
- Fridge temperatures including the maximum and minimum temperatures should be monitored and recorded on a daily basis.

A sticker has been produced by HSCB for display on community pharmacy fridges. The message it contains incorporates the recommendations from the NPSA and the shared learning from insulin incidents that have occurred in community pharmacies across N.Ireland.

These stickers will be issued shortly to all community pharmacies in Northern Ireland, if you would like further supplies, please contact your local Medicines Governance Adviser (see back page).



Summary of good practice points for insulin safety

	Prescribers	Pharmacists	Nurses
Prescribing 	Ensure that insulin prescriptions are written clearly and free from abbreviations Take particular care with the word 'units' Prescribe by brand name Ensure the correct injecting devices are prescribed		
Dispensing 		Ensure products are labelled clearly with instructions free from abbreviations Take particular care with the word "units" If possible show the insulin and device dispensed to the patient prior to handing out (consider use of a clear plastic bag for insulin stored in the fridge prior to collection to facilitate this check)	
Administration 	If administering insulin to patients ensure an appropriate insulin syringe / device is used (including appropriate size) Follow guidance from NHS diabetes[2]: • Right insulin • Right dose • Right time • Right way		If administering insulin to patients ensure an appropriate insulin syringe/device is used (including appropriate size) Follow guidance from NHS diabetes[2]: • Right insulin • Right dose • Right time • Right way
Storage 		Ensure that similar sounding products are stored separately from each other to avoid a selection error	

[2] http://www.diabetes.nhs.uk/safety/safe_use_of_insulin_elearning_module/

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