Changing diabetes®

An audit of diabetes prescription rounds: The problems defined

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There are numerous incidents of prescribing errors reported, specifically involving insulin (National Patient Safety Agency [NPSA], 2010). At the Conquest Hospital, St Leonards-on-Sea in 2012, the National Diabetes Inpatient Audit (NaDIA) reported 57.6% of people with diabetes experienced at least one medication error. Of the people receiving insulin, 21.2% experienced at least one (prescription or management) error. The purpose of the current exercise was to audit prescribing practice in order to highlight any issues in the management of diabetes that takes place in the hospital.

Aims and objectives

The aims of the audit were:

- To identify prescription issues relating to diabetes, both oral glucose lowering therapy and insulin (both subcutaneous and intravenous);
- To identify management issues relating to diabetes;
- To use identified prescription and management issues in developing education and training materials for doctors and nurses.

Time frames and basic information

The audit commenced in March, 2013 and completed in June, 2013. A re-audit was conducted alongside NaDIA in September, 2013 in order to provide a snapshot of any improvement from previous practice.

The audit was conducted every Tuesday afternoon and the hospital was divided into two cohorts per week due to time constraints, equivalent to ward review every other week. The Intensive Care Unit and High Dependency Unit were excluded as they use electronic prescriptions. The Maternity Unit and A&E were also excluded. All other adult inpatients with diabetes were included in the audit. There was a total of 218 prescription charts reviewed, 165 from medical units and 53 from surgical units. There were 11 people with diabetes on intravenous insulin infusion.

Results

Prescription issues noted were:

- Wrong timing of the prescription.
- Wrong/incomplete insulin name.
- Sulphonylurea used whilst on intravenous insulin infusion.
- Biphasic insulin with repaglinide.
- No dose prescribed.
- No units written.
- Basal analogue at bedtime plus biphasic insulin analogue three times a day.
- Superimposing changes to insulin doses and neither signing nor dating changes.
- Abbreviation of units.
- Insulin prescribed in milligrams.

Management issues noted were:

- No changes to doses or treatment with patterns of hypoglycaemia or hyperglycaemia.
- Sulphonylurea continued in renal impairment and hypoglycaemia.
- Omission of insulin in the event of hypoglycaemia.
- Wrong timing of medication administration.
- Metformin continued in patterns with poor renal function.

Intravenous insulin issues recorded include incorrect intravenous fluid substrate used, potassium chloride not added when it should have been, incorrect rate of intravenous fluid and inappropriate use of intravenous insulin infusion.

What happened next?

After the data were analysed, it was decided that there was a significant knowledge gap among the prescribers in the hospital and that training should be provided. Training presentations were drafted and agreed and these were presented during pharmacy induction for new doctors, which included a session on diabetes prescribing. The diabetes inpatient specialist nurse also delivered a 1-hour session to the Foundation Year 1 and Year 2 doctors, and has been asked to deliver sessions for the medical team in the Emergency Department and Acute Admissions Unit.

The team also developed "diabetes information swatches" for doctors, and one will also be developed for nurses. These swatches act as a guide for doctors in the management of diabetes in the acute setting and include dose adjustment, use of intravenous insulin,

Table 1. Prescription issues recorded during NaDIA snapshot.

Issues	Total	Average (5 weeks of complete data for all wards)	NaDIA September (all wards audited)
Wrong time	9	1.8	0
Writing of prescription	18	3.6	0
Re-writing issues	9	1.8	1
Omission	5	1	1
Discontinuation	7	1.4	0
Abbreviation of units used (U)	4	0.8	0

NaDIA=National Diabetes Inpatient Audit; CBG=capillary blood glucose

Table 2. Management issues recorded during NaDIA snapshot.

Issues	Total	Average (of 5 weeks of complete data for all wards	NaDIA September (all wards audited)
Dose/treatment changed when CBG high	14	2.8	2
Dose/treatment changed with CBG low	12	2.4	0
Missed doses	11	2.2	1
Wrong timing	4	0.8	0
Dose/treatment changed in renal impairment	6	1.2	0

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different types of insulin, oral therapies, and prescription examples.

When the NaDIA was carried out locally, and after the training was delivered, the team also re-audited using the same proforma for the audit in order to have a snapshot of data and the outcomes were then compared. Prescription and management issues are shown in *Table 1* and *Table 2*.

Key findings

There was a significant reduction in management and prescribing issues noted in the snapshot re-audit. Furthermore, evaluation from the education and training provided for medical staff has been very positive. The availability of the diabetes information swatches has been very popular for the doctors as it acts as an *aide memoir*, not just in the acute management of diabetes for inpatients, but it also contains information about the most common oral therapies, insulin, intravenous insulin and prescribing advice.

Recommendations

There are plans to perform regular update sessions for the medical teams and nurses to further avoid prescription and management issues. Also, a 3-month re-audit (not just the NaDIA snapshot) to identify patterns of improvement has been agreed by the diabetes team and pharmacy department. Some prescribing issues will be addressed by the introduction of the subcutaneous and intravenous insulin prescription charts. ■

Health and Social Care Information Centre (2011) *National Diabetes Inpatient Audit* Available at: http://www.hscic.gov.uk/diabetesinpatientaudit (accessed 20.02.14)

National Patient Safety Agency (2010) *Rapid Response Report: Safer administration of insulin*. NPSA, London. Available at: http://bit.ly/16ncnuE (accessed 20.02.14)