AN AUDIT OF CAPILLARY BLOOD GLUCOSE (CBG) MONITORING IN ACUTE MEDICAL ADMISSIONS AT THE LEICESTER ROYAL INFIRMARY

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Aims
To determine if CBG was measured, documented and given due credence in acute medical admissions

Background
• There are a relatively limited number of common acute medical presentations encountered on a acute medical take
• The association between dysglycaemia and length of stay is well established in patients with diabetes and those without 1
• This association would suggest that a comprehensive admission would be incomplete without blood sugar measurement
• Anecdotally, within our medical unit, this is something that we found to be frequently overlooked and therefore conducted the following audit

Methodology
• Acute admissions to the three Acute Medical Units at the Leicester Royal Infirmary
• Data collected between October 2014 and January 2015 (and thus minimised ‘operator bias’)
Standard audited:
– ‘was the patient’s glucose or capillary blood glucose (CBG) recorded on the medical clerking proforma and was credence given to it’

Demographics
• 56 patients on 3 acute medical units
• Factors dictating data collection were
  • Patient having been clerked and senior reviewed
  • Medical and bedside notes being available
• 25 males and 31 females
• Average age 75.1 years (range 19-101)
• Results therefore not dependent on just a few junior doctors and their clinical acumen since we spread the audit over two junior doctor rotations

• Presentation which warranted CBG measurement at least once:
  – Falls
  – Abdominal pain
  – Overdose (intentional or accidental)
  – Shortness of breath
  – Lethargy/ generally unwell
  – Seizure/ unresponsive episodes
  – Diarrhoea & vomiting
  – Chest pain
  – Stroke
  – Sepsis/ any infection
• Patient known to have diabetes

Results
52/56 patients presented with conditions warranting CBG measurement at least once. The 4 that did not warrant CBG measurement presented with:
• Knee pain (exacerbation of osteoarthritis)
• Suspected DVT
• Safeguarding admission
• Cancer pain
All 4 had CBG measured at least once

18/52 (36%) of patients were known to have diabetes, with 11 (61%) of these patients having their CBG noted on the clerking proforma.

Of the remaining 34 patients not known to have diabetes, 15 (44%) had their CBG recorded on the clerking proforma

Credence was given to CBG in 26/52 (50%) of eligible patients notes by the junior doctor, but only in 2 of the senior (ST3+ or consultant) reviews.

Abnormal readings
• 9 CBG readings were >11.1 mmol/l
• 8/9 were in patients known to have diabetes
• 4/9 were documented on the clerking proforma
• A single patient not known to have diabetes was found to have a CBG over 11.1 mmol/l. This was not documented on the clerking proforma, and hence a new diagnosis of diabetes was potentially missed
  • As follow up analysis was not conducted, it is acknowledged that this result may reflect stress hyperglycaemia

Recommendations
• Completion of roll-out of ThinkGlucose to AMU nursing staff
• Development of a portfolio of educational resources for junior doctors
• Re-audit following implementation of resources
• Patients with a CBG >11.1 should have a HbA1C to aide differentiation between stress hyperglycaemia and newly diagnosed diabetes and to inform on previous control if already known to have diabetes.