

A PROSPECTIVE ANALYSIS OF INPATIENT HYPOGLYCAEMIC EVENTS AT AN ACUTE CARE HOSPITAL

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BACKGROUND

Hypoglycaemic Events (HEs) are defined as 'Blood Glucose Levels (BGLs) below 4 mmol/L or where there are symptoms of hypoglycaemia at levels above 4mmol/L.' HEs are common in hospitalised patients and are associated with poor outcomes; increased length of stay, falls, mortality, and readmissions in patients with diabetes mellitus (DM). A previous audit identified a high level of HE within the hospital and highlighted the need for further investigation into how these events can be avoided or better managed.



AIMS

- To identify the incidence of, and factors contributing to HEs in adults in an acute hospital
- To assess adherence of management of HEs to the site's hypoglycaemia management guideline (HMG)
- To identify targets for staff education to improve management DM

A 'HypoKit' is a specifically designed kit for the management of hypoglycaemia. The HMG states to administer 15g of quickly absorbed carbohydrate (glucose gel or unsweetened orange juice), followed by 15g of slowly absorbed carbohydrate (6 Jatz® biscuits).

METHODS

Audit forms were attached to HypoKits routinely distributed to all inpatient wards of the hospital. Nurses documented patient identification number, date and time of HE, and which items were used from the kit on the audit form.

Completed audit forms were placed in a 'return to pharmacy' tray and were collected daily. Inclusion criteria: Diagnosis of DM, >24 hour stay, HE not related to deliberate overdose.

Pharmacy reviewed eligible patients' clinical records for demographics, features and possible causes of the HE, and adherence to the HMG.

RESULTS

70

HE were identified in 32 patients, over a 24 week period. 69% of patients experienced multiple HEs.

4%

of patients had a repeat BGL within 10 minutes of administration of a HypoKit (as per Step 4 of HMG). The average time to repeat BGL was 67.4 minutes.

47%

of patients who were still in a hypoglycaemic state after retesting did not receive further treatment.

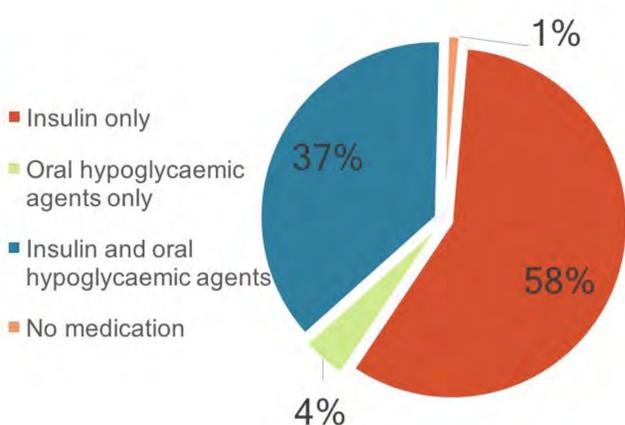
50%

of patients with T2DM identified in the audit had a severe HE in comparison with 33.3% of patients with T1DM.

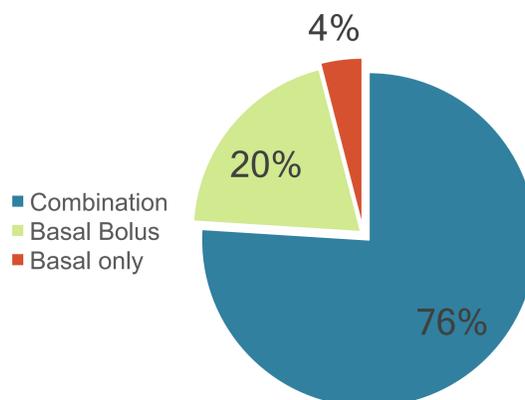
53%

of HEs were not reported to a medical officer for a subsequent review of insulin dosing.

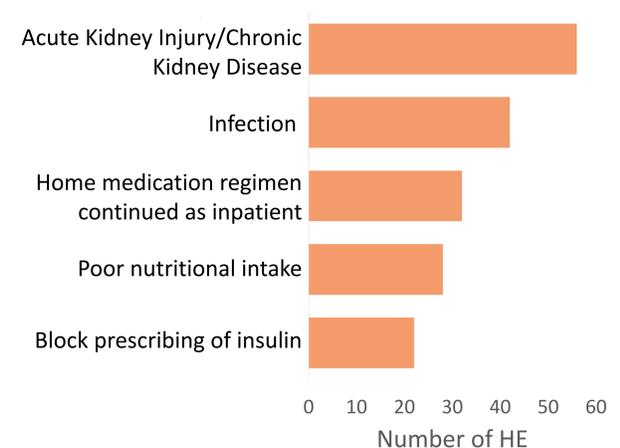
MEDICATION REGIMEN



INSULIN REGIMEN



POSSIBLE CAUSES OF HE



CONCLUSION

Poor adherence to the hospital's HMG has led to a review of the policy and procedures with enhancements including: the implementation of a new BGL monitoring chart and insulin prescribing form; reformatting of the guideline to improve usability, and addition of the need to inform a medical officer as a mandatory step for managing HEs. This audit also demonstrated a need for further staff education to identify patients at risk of HEs. This education has been provided by Pharmacy and the Diabetes Education service concurrently with the implementation of the new forms. Increased staff awareness of the high incidence of severe hypoglycaemia in T2DM, and the importance of a medical review post HE would potentially reduce the number of HE and improve patient outcomes. Staff education and evaluation of these changes will be ongoing.



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