Healthcare Innovations
How practice has changed

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Hypoglycaemia Following Treatment of Hyperkalaemia with Intravenous Insulin

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Purpose:

Intravenous insulin is commonly used for the treatment of hyperkalaemia in the Emergency and Trauma Centre but carries a risk of causing hypoglycaemia. Despite this being a well understood phenomenon, hypoglycaemia is common with international data suggesting that it occurs in up to a fifth of patients treated for hyperkalaemia[1]. A retrospective audit was conducted to review the local rate of hypoglycaemia in the Emergency and Trauma Centre.

Methods:

Retrospective audit of adult patients admitted to the ETC from Jan 19' − June 20' who were found to be hyperkalaemic (≥6.0mmolL-1)

Data collection

- Insulin/ glucose prescribed
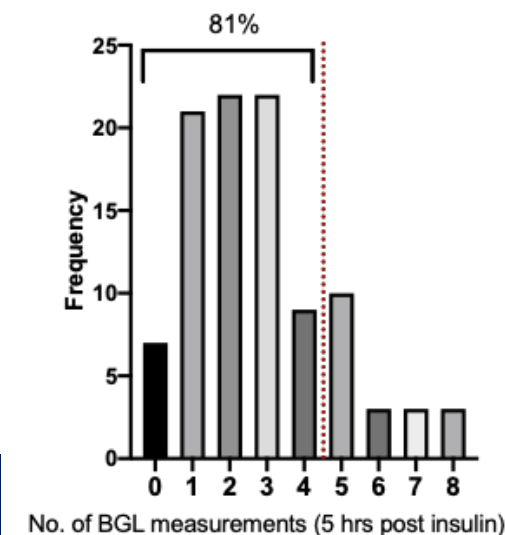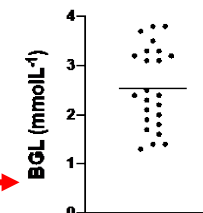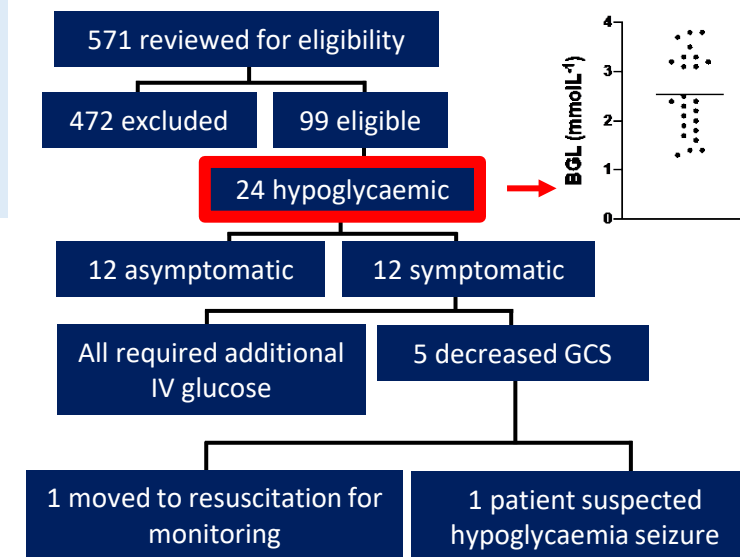- Blood glucose levels
- Presence of ESRF, T1DM, T2DM

Exclusion Criteria

- Haemolysed samples
- Patients who did not receive insulin
- Patients with DKA

Reviewed for hypoglycaemia (≤3.9mmolL-1) 5 hours post insulin

Charts reviewed for hypoglycaemia morbidity

Results:

571 reviewed for eligibility

472 excluded | 99 eligible

24 hypoglycaemic

12 asymptomatic | 12 symptomatic

All required additional IV glucose | 5 decreased GCS

1 moved to resuscitation for monitoring | 1 patient suspected hypoglycaemia seizure

Conclusion:

Prescribing for hyperkalaemia was largely concordant (~96%) with the state-wide guideline. Despite this, hypoglycaemia was observed in 24% of patients with half requiring intervention. The severity of hypoglycaemia can be, in part, explained by inadequate blood glucose monitoring with 81% of patients receiving less than hourly blood glucose levels. It is crucial that clinicians monitor blood glucose levels hourly for at least 5 hours post intravenous insulin when given for hyperkalaemia.

1. Harel Z, Kamel K. Optimal Dose and Method of Administration of Intravenous Insulin in the Management of Emergency Hyperkalemia: A Systematic Review. PLOS ONE. 2016;11(5):1-12.