

A clinical audit on the management of inpatient hyperglycaemia in diabetic patients at Scarborough Hospital

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Introduction

Patients with diabetes are three times more prone to hospitalisation, and numerous data indicate that hyperglycaemia in patients with or without a history of diabetes is associated with an increased risk of complications and mortality. Hence the management of inpatient hyperglycaemia is not only important for achieving euglycaemia, but also has a significant role in improving patient outcomes and patient care.

Aims and standards

The objectives of this audit were to evaluate the compliance of inpatient management of hyperglycaemia in diabetes patients at Scarborough Hospital with the York and Scarborough Teaching Hospitals NHS Foundation Trust (YTH) guidelines and to know the extent of adherence to diabetes specialist nurses' (DSNs') advice. The audit standards were based on the YTH protocols for management of inpatient hyperglycaemia, YTH protocol for blood ketone testing for diabetic adults and the YTH best practice guidance for the use of stat doses of rapid-acting insulin for the treatment of hyperglycaemia in adult patients with diabetes.

Methodology

A prospective study was done from mid-August to mid-September 2020 and information was collected from electronic health records and patient notes of diabetic patients with hyperglycaemia who had an inpatient stay of 3 days or more. The total number of patients was 30, with 27 patients having type 2 diabetes and the other three patients having type 1 diabetes. Data were recorded and analysed in MS Excel.

Results

In patients with type 1 diabetes the median age was 30 and in patients with type 2 the median age was 78. Sixty per cent of patients in this audit were male. Blood glucose readings after admission were above 16 mmol/L in about 70% of type 1 and in 52% of type 2 diabetics. All the type 1 patients and 22% of type

2 patients were tested for blood ketones. Seventy per cent of type 2 diabetics and 67% of type 1 diabetics had their blood ketone measured according to the YTH protocol. In type 2 diabetics who needed blood ketone monitoring but were not tested, half of them were missed, and in the other half testing was not in line with YTH protocol. Overall compliance with the YTH ketone testing protocol was 70%. In type 2 diabetics, in 15% oral hypoglycaemic drugs were increased, in 45% insulin was increased by 10% and in 26% a stat dose of rapid-acting insulin was given. But in almost 40% of those treated with a stat dose of insulin, blood glucose was not checked after 2 hours. The DSN advice was followed in 70% of the cases.

Conclusion

Even though compliance with the YTH protocol in blood ketone testing and the DSN advice were good, failure to test ketones in type 2 diabetics who were unwell and who had a blood glucose above 16 mmol/L could have serious consequences. Blood glucose is to be checked after 1 or 2 hours depending on the type of stat dose of insulin and leaving blood glucose unchecked could result in fatal complications. ■

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