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Capillary Glucose Monitoring in Haematology Inpatients on Glucocorticoids

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INTRODUCTION

Glucocorticoids are an important part of the treatment of a wide spectrum of haematological conditions such as Immune Thrombocytopenic Purpura (ITP), Autoimmune Haemolytic Anaemia (AIHA), Multiple Myeloma (MM) and lymphoma. However, there are several associated side effects including steroid induced hyperglycaemia and diabetes.

AIM

The aim of this audit was to evaluate whether our approach to hyperglycaemia monitoring in patients commenced on glucocorticoid therapy is consistent with standards set out by the Joint British Diabetes Society (JBDS).

METHOD

We prospectively analysed capillary blood glucose (CBG) monitoring in patients initiated on steroids for management of their haematological condition over a 2-month period. The data was collected by reviewing blood glucose monitoring charts and inpatient records. We assessed whether patients had adequate hyperglycaemia monitoring based on achievement of the following 3 criteria:

1. Initiation of capillary blood glucose (CBG) monitoring once daily before or after lunch or evening meal
2. Continued once daily blood glucose monitoring, if CBG is less than 12mmol/l.
3. If CBG greater than 12mmol/l, escalate CBG monitoring to 4 times a day(QDS)

We also evaluated whether adequate glucose control was maintained in both of the following patient groups:

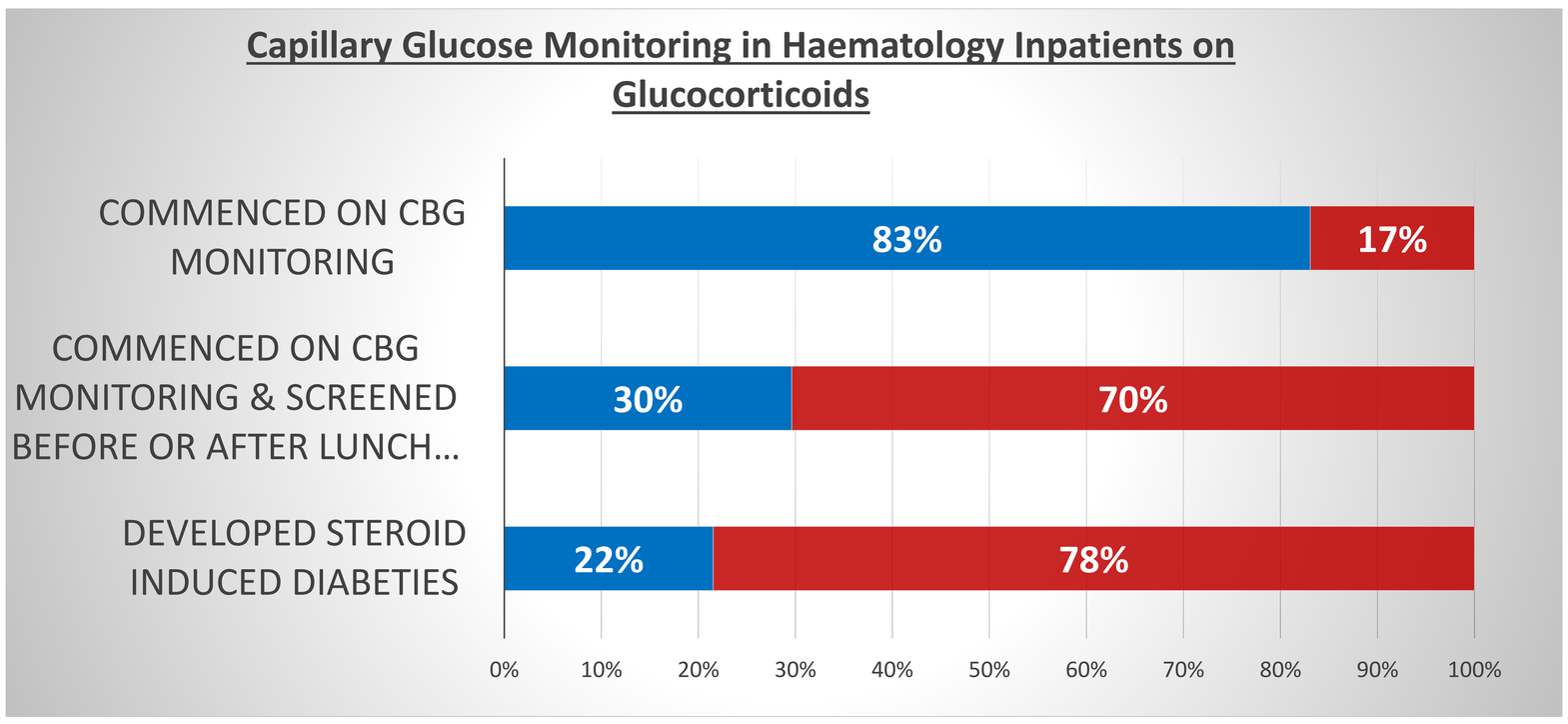
Patients with steroid induced hyperglycaemia (steroid driven rise in glucose in existing diabetic patients)

Patients with steroid induced diabetes (steroid driven rise in glucose in non-diabetic patients)

RESULTS

The JBDS guidelines indicate that adequate hyperglycaemia monitoring should occur in at 90% of patients whilst maintenance of adequate glucose control should be achieved in 75% of cases.

During the study period, a total of 65 patients were commenced on glucocorticoid therapy as part of management of their haematological condition. Fifty-four (83%) patients on steroids were commenced on CBG monitoring of which only 16 (30%) were screened before or after lunch or tea time. All other patients had random CBG readings taken. Eleven (69%) continued once daily CBG monitoring if CBG was less than 12mmol/l. Fourteen (22%) patients were found to have CBG readings above 12mmol/l and 6 (43%) of these patients were escalated to QDS monitoring. One patient was an existing diabetic and they maintained adequate glucose control of steroid induced hyperglycaemia after starting Gliclazide as recommended by the JDBS guidelines. There were 14 (22%) patients with no prior diagnosis of diabetes who developed steroid induced diabetes. Of these, only 5 (36%) had adequate glucose control after starting Gliclazide



CONCLUSIONS

In summary, this audit demonstrates that whilst 83% of patients are having some form of CBG monitoring after commencing steroid therapy, only a small proportion are undertaking this in line with current recommendations. The results also show that a significant proportion of patients with no previous history of diabetes went on to develop steroid induced diabetes highlighting the importance of monitoring CBGs. It is possible that if the recommended CBG monitoring criteria were adhered to more stringently, there may have been more cases of steroid induced diabetes detected. Furthermore, the audit showed adequate glucose control was only achieved in approximately one third of these patients. This audit demonstrates the need for an increased awareness of current standards in CBG monitoring for patients receiving steroids for haematological indications.

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REFERENCES

Joint British Diabetes Societies for inpatient care Management of Hyperglycemia and Steroid (Glucocorticoid) Therapy.