MANAGEMENT OF HYPERGLYCEMIA IN PATIENTS ADMITTED WITH ACS IN A SOUTH EAST HOSPITAL

A Retrospective Audit By:

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INTRODUCTION

- Hyperglycemia is a frequent condition in patients with acute coronary syndromes (ACS). Hyperglycemia during ACS is caused by an inflammatory and adrenergic response to ischemic stress, when catecholamines are released and glycogenolysis induced.
- In the last few years, several observational studies demonstrated that hyperglycemia in ACS is a powerful predictor of survival, increasing the risk of immediate and long-term complications in patients both with and without previously known diabetes mellitus.
- Glucose management strategies in ACS may improve outcomes in patients with hyperglycemia, perhaps by reducing inflammatory and clotting mediators, by improving endothelial function and fibrinolysis and by reducing infarct size. Recent clinical trials of insulin in ACS have resulted in varying levels of benefit, but the clinical benefit of an aggressive treatment with insulin is yet unproved.
- The NICE guidelines which were updated in March 2018 were in favour of managing hyperglycaemia in patients admitted to hospital for an acute coronary syndrome by keeping blood glucose levels below 11.0 mmol/litre while avoiding hypoglycaemia.

AIM

- The aim of this audit was to see the impact that a similar previous audit conducted in 2011 has had over the management of hyperglycemia in patients admitted with an ACS and to assess any improvement or deterioration in patient care in this regard.
- In the earlier audit, 50% of patients admitted to the Coronary Care Unit had a variable rate glucose infusion commenced and of these only 20% were known diabetics. None of these patients were referred to the diabetic team after 48hours of variable insulin infusion for consideration of long-term insulin therapy.
- Only 13 patients were referred to their primary care physician for post discharge glucose tolerance test and possible life style modification measures.

AUDIT METHODOLOGY:

- A baseline audit was designed to investigate how patients admitted with an ACS have their blood glucose (BM) levels managed in a hospital in South East England. Data was collected over a 5 month period from April to August 2019. Search criteria, inclusion and exclusion criteria were used. The patients included were identified through a search of electronic patient records.

- Inclusion criteria were as follows: Patients who were symptomatic with chest pain and had ECG changes and raised Troponin levels and who were diagnosed as having a definite ACS, subsequently admitted to the Coronary Care Unit and who were Type 1 or Type 2 diabetics or were found to have an elevated blood glucose level of >11.1 were included in the study.

- Exclusion Criteria: Patients without chest pain and whose raised Troponin levels were thought to be related to arrythmias or sepsis, despite being diabetic were excluded from the audit.

RESULTS

- From 86 patients who were admitted to the Coronary Care Unit at QEQM Margate, 30 were selected. These were the ones who had a previous history of either Type 1 or Type 2 Diabetes or who had evidence of stress hyperglycemia on admission.

- 21 were male (70%) and 9 (30%) female.

- The mean age was 74.1 years with a standard deviation of 12.9, with the youngest patient being 35 and the oldest 94.

RESULTS

- Of those 30 patients, 3 didn't have any previous diagnosis of Diabetes, 4 had Type 1 Diabetes and 23 had Type 2 Diabetes. Of the 27 patients who were known to have diabetes prior, 12 were on oral medications, 8 weren't on any medications at all and were just on diet control and 7 were on insulin.

Classification	Number
Type 1	4
Type 2	23
Stress Hyperglycemia or Previously Undiagnosed	3

RESULTS CONTINUED

- Of the 30 patients, 5 did NOT have their blood glucose checked on admission.
- Of the 25 patients who had their blood glucose levels checked, 11 had a BM of > 11.1. NONE of those patients were started on a VRIII on admission.
- Of the remaining 14 patients, 3 were inappropriately commenced on a VRIII.
- Only 10 of the 30 patients had a Hba1c checked on admission or within the last 6 months of their admission. The mean Hba1c in this group was 65.3

RESULTS CONTINUED

Blood Glucose Level (BM)	No of patients	VRIII commenced?
>11.1	11	NONE
<11.1	14	3

CONCLUSIONS:

- 1. More men than women tend to suffer from ACSs
- 2. Blood glucose level is poorly monitored and recorded in the diabetic population being admitted with an ACS.
- 3. VRIII isn't being properly commenced as required and recommended.
- 4. Hba1c levels aren't being requested as often as they should
- 5. None of the patients admitted with an ACS were appropriately commenced on a VRIII in this audit. This is a marked decline in standard practice as compared to the 50% of patients who were on a VRIII protocol as observed in the previous audit.

SUGGESTIONS:

- 1. Introduction of a poster in the Emergency Department and Coronary Care Unit illustrating the management of hyperglycemia of patients being admitted with an ACS

- 2. Re-auditing data by the end of the year to see whether change has been implemented.

THANK YOU FOR YOUR KIND ATTENTION!!!

- Any questions or constructive criticism?