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“ Medioglycaemia ”: A new concept in glycaemic control in intensive care (ICU) units?

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ABSTRACT

Introduction: Critically ill patients can experience stress-induced hyperglycaemia. Glycaemic control therapy (GCT) is administered to control patients ' blood glycaemic levels and reduce the incidence of infection, myocardial infarctions and organ failure. However, there are many factors influencing the effectiveness of glycaemic control for patients. This investigation aimed to review the method of Glycaemic Control Therapy (GCT) used in two hospital settings, to assess the effectiveness of glycaemic control on patients ' blood glycaemic levels and examine any barriers that may be in place. Method: A retnrospective audit was carried out on patients ' case notes in Intensive Care Units (ICU) within the East Midlands, UK. This method prevents the study outcomes being swayed because GCT has already taken place. To reduce selection bias the most recent available case notes were selected. All the patients who were admitted to these adult ICU ' s between March and April 2010 had their case notes examined, those who were administered GCT were included in the study, this involved 79 from Hospital A and 50 from Hospital B. The patients ' notes were retrospectively audited. Results: Different glycaemic control protocols were being implemented in each hospital, despite both belonging to the same ICU network. In most incidences, regardless of age, diabetes status or diagnosis, patients were administered the same sliding scale insulin (SSI). It was also found that GCT commenced for 41.9% (n = 52) of ICU patients (across both Hospitals) when glycaemic levels were below the established threshold of 10mmol/L. Additionally, a new glycaemic range has been discovered, where 88.3% (n = 113) of patients (across both Hospitals) receiving GCT were not controlled in hypoglycaemia, normoglycaemia or hyperglycaemia. They had mean blood glycaemic levels maintained between 5.6 - 9.9 mmol/L, now being described as medioglycaemia. Conclusions: The majority of patients receiving GCT were controlled in medioglycaemia and therefore a new comprehensive guideline needs to be developed incorporating this new range. Recommendations also need to be established to adapt the titration regimen to individual patients, to improve the effectiveness and safety of glycaemic control.

KEYWORDS

Glycaemic Control; Intensive Care (ICU) Units; Medioglycaemia; Tight Glycaemic Control

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