

Guidelines for Blood Glucose Control in Critically Ill Patients.

Reference No:

Introduction

Available evidence suggests that hyperglycaemia is associated with adverse outcome in a number of patient groups, for example post myocardial infarction, cardiac surgery and cerebral vascular accident. In addition it has been realised by the 'Surviving Sepsis Campaign' that maintaining normoglycaemia in critically ill patients as part of a 'Sepsis Care Bundle' can help reduce morbidity and mortality in critically ill septic patients.

Aim and Scope

To facilitate safe and effective glucose control in level 2 / level 3 patients, aiming for blood glucose less than 10 mmol/l.

Abbreviations used:

ICU – Intensive Care Unit

Blood Glucose Monitoring

The use of the blood gas analyser or 'Ascensia' blood glucose monitoring device are acceptable methods of monitoring the patients' blood glucose level and will direct manipulation of the glucose control regime within the clinical area.

Insulin preparation for prescription

Actrapid Insulin 30iu made up to 30mls with 0.9% sodium chloride, to provide an infusion concentration of 1iu/ ml, which will be delivered at the required rate to maintain the patients blood glucose level \leq 10.0 mmol/l.

The prescription of the glucose control insulin regime will be documented on the drug prescription chart as 'refer to glucose control regime' and a laminated reference copy maintained within the bedside documentation.

Glucose Control for Mechanically Ventilated Patients

1) Check Blood Glucose on Admission. If Blood Glucose \leq 3 mmol/l, administer 50 mls of 20% dextrose (12.5g) and recheck blood glucose immediately. Repeat if blood glucose $<$ 3mmol.

2) Continue to check blood glucose level hourly whilst patient is receiving sliding scale insulin therapy. Enteral feeding SHOULD NOT be interrupted for rest periods. If established enteral feeding or TPN is interrupted for ANY reason e.g. for inter or intra hospital transfer the insulin infusion MUST be stopped and the blood glucose level checked hourly.

3) Consideration should be given to concomitant monitoring of Potassium during insulin infusion. A Potassium-containing fluid may need to be prescribed if hypokalaemia ensues.

4) On ICU discharge the ICU Glucose Control Regime should ordinarily be discontinued, however, where glucose control has been 'difficult' to achieve this should be discussed with the parent medical team and arrangements made to control blood glucose as per current ward practice. Ensure the 20-hour enteral feeding regime is re-established / prescribed prior to transfer to the ward.

Uncontrolled when printed

5) Starting insulin regime as pre-printed on ICU drug chart. This may need to be amended if blood glucose is not adequately controlled.

Blood Glucose (mmol/l)	Insulin regime (ml/hr)
less than 3.0	Give dextrose
3.1-8.3	0
8.4-11.0	2
11.1-17.0	3
>17.0	4

References

NICE SUGAR study investigators. Intensive versus Conventional Glucose Control in Critically Ill Patients. N Engl J Med 2009; 360:1283-1297

Documentation Control

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