DIGAMI Regime

MANAGEMENT OF Blood sugars in Patients presenting with myocardial infarction

Eligible patients

- known Type 1 diabetic
- known Type 2 diabetic, whether on diet or tablets or insulin
- not-known-to-have-diabetes patients with admission blood glucose > 11 mmol/l *presenting with an acute myocardial infarction

* Blood glucose must be confirmed with laboratory measurement - do not rely on capillary test

Principles of the DIGAMI regime

- Withdrawal from oral agents during the acute episode
- Give intravenous dextrose to provide the myocardium with extra substrate
- Control the blood glucose with intravenous insulin for at least 24 hours
- Tight glycaemic control during and after acute myocardial infarction

Procedure

- Stop oral hypoglycaemic agents.
- Infuse 10% Dextrose intravenous at 15 ml/hour through a peripheral line and continue for at least 24 hours.
- Commence intravenous insulin infusion at 1 unit/hour (Humulin S or Human Actrapid, 50 units {contained in 0.5 ml}, made up to 50 ml using 0.9% sodium chloride in a 50 ml syringe). An insulin syringe must be used to measure the 50 units of Actrapid.
- Check blood glucose hourly using bedside capillary blood glucose meter.
- Aim for blood glucose of 4 – 7 mmol/l by adjusting the insulin infusion rate.
- Institute all normal post-infarct procedures and drug interventions using standard criteria (ACE inhibitor, oral beta blockers, statins, aspirin, etc).
- The serum potassium should be monitored closely. Potassium supplements may be necessary (given either orally or intravenously). The serum potassium should
Hypoglycaemia

- Hypoglycaemia is detrimental to the recovering myocardium by causing beta adrenergic stimulation and lack of metabolic substrate.
- Hypoglycaemia during admission may increase re-infarction rates.
- If blood sugars are dropping constantly, double dose of intravenous glucose.

Post acute episode management

- After at least 24 hours of glucose + insulin infusion, the patient should be transferred to a therapeutic regime likely to provide optimum glycaemic control.
  
  **Use:**
  - knowledge of the patient’s home blood glucose monitoring prior to infarction
  - knowledge of the HbA1c prior to infarction
  - HbA1c measured at the time of admission

  **Decide:**
  - If prior oral hypoglycaemic agents or Insulin regime seemed adequate, then continue
  - If prior oral hypoglycaemic agents regime was giving poor control, consider insulin
  - If prior insulin regime was giving poor control, consider basal/bolus insulin

- Remember: The stress of an infarct can cause pancreatic exhaustion and a patient previously well controlled on oral hypoglycaemic agents may require insulin post-infarct.

- Refer to the dietician and diabetes specialist nurse for support and ongoing education.

- Consider referral to one of the hospital diabetic clinics if the patient is not already known to the diabetes service.

- If in doubt, contact Dr Stephens, Dr. George, Diabetes team Registrar or the Diabetes Specialist Nurse.

The DIGAMI1 / DIGAMI2 Controversy

There is some concern about the role of intensive insulin treatment in those with well controlled blood glucose presenting with a myocardial infarction. THE DIGAMI 2 study designed to answer further questions regarding blood glucose control during and after a myocardial infarction was stopped early due to low recruitment, protocol violation and the inability to achieve separation in blood sugar control in the three arms. Most patients had better blood glucose control on admission the DIGAMI 1 study. The results showed a trend towards higher re-infarction in the intensive group (p=0.07). The numbers of hypoglycaemic episodes were higher in the intensive arm.
The view at present is that good glycaemic control is beneficial in patients with acute myocardial infarction, however overzealous blood glucose control can lead to increased hypoglycaemia and possible worse outcome. Close monitoring of blood glucose is required when the patient is on sliding scale (hourly monitoring).

Contact numbers: -
Dr Stephens - internal telephone extension 2393(secretary) or via switchboard if out of hours.
Dr. George Via switchboard.
Registrar appropriate bleep number via switchboard.
Diabetes Specialist Nurse internal telephone extension 2458, bleep number 007or via switchboard if out of hours.