Perioperative Glycemic Control in Post-Cardiac Surgery Patients

Dr. Amel Arnaout, MD, FRCPC; Nazli Parast, RN, BScN, CDE, MScN (C); Dr. Paul Stewart, MBBS; Sandhya Goge, RN, MScN, CDE; Kimberly Twyman, RN, BScN, CDE

1. University of Ottawa Heart Institute, Ottawa, ON; 2. University of Ottawa, Ottawa, ON; 3. The Ottawa Hospital, Ottawa, ON

Insulin Use – At home vs In-hospital

Results:

was measured at 90 days post surgery.

for the 7 days following discontinuation of IIP. Post-op infection rate

≥ subcutaneous (SC) insulin administration post cardiac surgery

Secondary Outcome: 2)

Primary Outcomes:

1) To evaluate glycemic management strategies post cardiac surgery following discontinuation of IIP

Methods:

We conducted a prospective chart audit on patients admitted to the UOHI between June – August 2015 that met the inclusion criteria of undergoing open heart surgery & HbA1c ≥ 6% pre-operatively. Glycemic control was evaluated while on insulin infusion protocol and for the 7 days following discontinuation of IIP. Post-op infection rate was measured at 90 days post surgery.

Discussion:

Almost one third (27%) of cohort patients developed infection post-operatively. IIP patients with HbA1c of less than 6.5% were twice as likely to develop post-op infection compared to patients with HbA1c of more than 9%.

Interestingly, non-IIP infections were mainly seen in patients with HbA1c of 7% or less. These findings suggest that a standardized approach for intra-operative IIP initiation needs to be established and all patients requiring IIP should be prescribed SC insulin upon transfer to the ward.

Conclusion:

Hence, a multi-disciplinary taskforce developed a protocol to transition patients from IV insulin to SC insulin as follows:

Transition from IV Insulin to Subcutaneous Insulin (for Type 2 Diabetes ONLY):

At the time of transfer, if patient has had IV insulin infusion at a rate ≥ 1 units/hr for each of the previous 4 hours then:

Calculate Total Daily Dose (TDD): Last 4 hours of insulin infused ____units x 6 = ____TDD

Prescribe 50% of TDD for subcutaneous administration of long acting basal analogue insulin 1-2 hrs before IV insulin is discontinued. (TDD _____ divided by 2 = ____units of SC basal dose

S/C Glargine _____ units at ______ hours, then once daily OR

S/C Detemir _____ units at ______ hours, then once daily

AND correction scale TID, rapid acting analogue insulin on HEA 239; Physicians Orders-Subcutaneous Insulin Administration Using Disposable Pen Device

For patients on IV insulin that don’t meet the above criteria:

Prescribe correction scale TID ONLY, rapid acting analogue insulin on HEA239.

Oral hypoglycemic agents to be reassessed once tolerating full fluids/diabetes diet.

References:

