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Association of time in blood glucose range with outcomes following cardiac surgery

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Background: The importance of optimal postoperative glycemic control in cardiac patients remains unclear. Various glycemic targets have been prescribed to reduce wound infection and overall mortality rates.

Aim of the work: To assess glucose control, as determined by time in range (TIR), in patients with glycemic targets of 6.0 to 8.1 mmol/L, and to determine factors related to poor control.

Methodology: This prospective descriptive study evaluated 227 consecutive patients, 100 with and 127 without diabetes, after cardiac surgery. Patients received insulin to target glucose concentrations of 6.0 to 8.1 mmol/L. Patients were divided into two groups, those who maintained > 80% and < 80 % TIR. Outcome variables were compared in diabetics and non-diabetics.

Results: Patients with >80% and <80% TIR were matched in age, sex, gender, and Euro score. Failure to maintain target glycemia was significantly more frequent in diabetics ($p=0.001$), in patients with glycated hemoglobin (HbA1c) > 8% ($p=0.0001$), and in patients taking dopamine ($p=0.04$) and adrenaline ($p=0.05$). Times of CPB and ACC, length of stay in the ICU and ventilation were significantly higher in patients with TIR <80% than >80%. The incidence of wound infection was higher in patients with TIR <80%. No significant differences were found between the two ethnic groups (Arabs and Asians).

Conclusion: Patients with >80% TIR, whether or not diabetics, had better outcomes than those with <80% TIR, as determined by wound infection, lengths of ventilation and ICU stay. Additionally, they were not subject to frequent hypoglycemic events. Preoperatively high HbA1C is likely a good predictor of poor glycemic control.

Biography

Amr Omar has completed his PhD at the age of 32 years from Cairo University and was assigned a lecturer in critical care in Cairo University Hospitals, Egypt. He has published more than 20 papers and more than 20 presentations in reputed journals and international conferences. He has been serving as a reviewer for reputed journals as well.

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