

Section: SURGERY

Abstract: CIR-O1

From blood glucose to survival: metabolic factors and outcomes in patients with surgical site infection after cardiac surgery

César Origa Barbosa, Pedro José Correia Ferraz, Gabriel Correa Aliendres Oliveira, Lara Berardo Tavares, Andrea Oliveira Freitas
Centro Universitário FMABC, Santo André, Brazil
cesar.barbosa@aluno.fmabc.net

INTRODUCTION: Diabetes mellitus and preoperative hyperglycemia in patients undergoing cardiovascular surgery have been associated with worse postoperative outcomes. Although adequate glycemic control may reduce complications, strict versus permissive control strategies remain controversial in this setting. This study assessed the impact of preoperative glycated hemoglobin (HbA1c) and mean perioperative glucose variation (MPGV) as predictors of outcomes among patients with surgical site infection (SSI) after cardiovascular surgery. **METHOD:** This retrospective observational study analyzed medical records of patients who underwent cardiac surgery between January 2022 and September 2024 and developed SSI. Emergency and salvage procedures, pacemaker implantation, and chest drainage were excluded. Brazilian Health Regulatory Agency (ANVISA) criteria were used to diagnose superficial, deep, or organ/space SSI. The perioperative period included three days before and three days after surgery. Mean daily glucose variation was calculated from at least four measurements per day. Patients were divided into three groups in mg/dL: group 1 (<100), group 2 (100–200), and group 3 (>200). Preoperative HbA1c groups were A (<6.5%), B (6.5%–8%), and C (>8%). Length of stay, discharge, and mortality were assessed. **RESULTS:** A total of 172 patients with SSI were included. Most were women of normal weight, with intermediate surgical risk and three comorbidities. There were 153 superficial infections (88.9%), 12 deep infections (6.9%), and seven cases of mediastinitis (4.2%). Group 1 had lower mortality than group 3 (6% vs 41%) and a shorter hospital stay, with more than 60% discharged within 10 days (vs 17% in group 3). Lower preoperative HbA1c was also associated with lower mortality (11% in group A vs 18% in group C) and shorter hospital stays. **DISCUSSION:** Lower MPGV and lower preoperative HbA1c levels were associated with better outcomes among patients with SSI after cardiac surgery. Strict metabolic control may have an important protective role, with favorable effects on mortality and length of stay. **CONCLUSION:** In this sample, restrictive MPGV and lower preoperative HbA1c were associated with better clinical outcomes. More intensive glycemic management strategies should be considered in the care of cardiac surgical patients.

KEYWORDS: Cardiovascular surgical procedures; Risk factors; Glycemic index; Blood glucose.