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Supported but Septic: Risk Factors and Comorbidity Burden in Mechanical Circulatory Support

Kelsey Gore

Department of Cardiovascular Perfusion and Extracorporeal Technology, Ochsner Health, New Orleans, Louisiana, USA

Abstract

Patients receiving mechanical circulatory support (MCS) are at a significant risk of developing sepsis, a serious complication that can affect outcomes. This study evaluated 199 patients who underwent 244 MCS therapies between January 2017 and October 2023 to identify factors associated with sepsis. Using machine learning and decision-tree analysis, the overall incidence of sepsis was found to be 20%. Patients with a history of congestive heart failure or previous cardiac surgery showed a higher risk of developing sepsis during MCS therapy. Notably, patients without chronic cardiovascular disease but with prior cardiac surgery had the highest risk, with a 60.3% incidence of sepsis. These findings suggest that underlying inflammatory conditions related to heart failure and prior cardiac surgery may increase susceptibility to sepsis in MCS patients, highlighting the need for further research and improved preventive strategies.