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主題：

“Innovation of Patient Care in Cardiac Anesthesia”

摘要：

Intraoperative hypotension is common despite the monitors and pharmacologic interventions currently available. Intraoperative hypotension is associated with adverse outcomes. Studies have established a correlation between the degree of intraoperative hypotension and the incidences of postoperative myocardial ischemia, acute kidney injury (AKI), and overall mortality following noncardiac surgeries. Similar correlations also are observed following cardiac surgeries with respect to stroke, renal injury, and prolonged hospital stay. Clinicians have several tools available to monitor intraoperative hemodynamics that vary in their accuracy and invasiveness. The hypotension prediction index (HPI) monitor (Edwards Lifesciences, Irvine, CA) is a novel device that uses machine learning to develop an algorithm that integrates select parameters from the arterial pressure waveform to predict the likelihood of a hypotensive event. Previous studies using HPI have validated this parameter for noncardiac surgeries. HPI values predicted the occurrence of hypotension five-to-15 minutes before the event, with sensitivity and specificity both greater than 80%.



Furthermore, Wijnberge et al. showed significant reduction of total hypotensive time when the HPI monitor was used. Ultimately, analyzing the complications of varying severity and duration of hypotension and associated adverse clinical endpoints (AKI, myocardial ischemia, and stroke) to assess the clinical effects of incorporating HPI into cardiac anesthesiology practice would provide valuable information. The total incidence of hypotension numbers suggests that a majority of the hypotensive events were not therapeutic or the consequences of surgical manipulations. There are, consequently, many opportunities for improved intraoperative hemodynamic management. The HPI algorithm provides predictive information both before and after sternotomy. Inotropes and vasoconstrictors commonly were used following CPB, and the overall incidence numbers confirmed these did not compromise performance of the HPI algorithm. Although the assessment of HPI is still in early stages, HPI demonstrated the potential benefit of this intraoperative monitor to improve outcomes in cardiac procedures.