Purpose: Traditional cardiac anesthesia relies heavily on opioid administration for hemodynamic stability and postoperative pain control. This is despite well-documented literature that the use of opioids can lead to negative adverse events causing harm to patients, increasing cost of care, and increasing the length of hospital stay. The purpose of this systematic review is to gather, analyze, and disseminate successful opioid-free anesthesia (OFA) techniques that provide hemodynamic stability, provide adequate postoperative pain control, and improve overall patient outcomes.

Methodology: A systematic literature search focusing on searching for regional anesthesia and IVR was conducted according to the PRISMA guidelines. Articles found were screened for relevance, and the remaining full-text articles were appraised for inclusion or exclusion via the Joanna Briggs Institute critical appraisal checklists. A total of eight articles were included in this systematic review.

Results: Common to these studies was an overall positive patient outcome from utilizing OFA techniques compared to opioid-based (OB) anesthetics. Patients were found to be extubated more quickly, discharged more rapidly, and had more effective pain control. OFA multimodal techniques utilized by mouth medications, intravenous medications, and ultrasound-guided regional blockade. These findings suggest that both regional and medication-guided OFA techniques are a viable method for achieving surgical anesthesia and analgesia, such as traditional OB techniques, but without the unwanted side effects of opioids.

Implications for Practice and Research: The studies discussed in the review suggest that both pharmacological modalities and local/regional blockade are adequate non-opioid adjuncts to improve overall patient outcomes in participants undergoing open cardiac surgery. The invention of enhanced recovery after surgery protocols comes with a push for multimodal, opioid-free

perioperative care pathways that increase the patient's recovery following surgical procedures. Further research must be conducted on larger patient populations to strengthen the findings discussed.