Adverse Events Associated with Perioperative Beta-Blocker Use in Noncardiac Surgery
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Introduction: A literature review was conducted for a quality improvement project to support adverse events associated with perioperative beta-blocker administration as recommended by American College of Cardiology Foundation and American Heart Association and Centers for Medicare and Medicaid Services mandate. Patients undergoing noncardiac surgery administered a beta-blocker perioperatively are at a significantly increased risk for bradycardia, hypotension, stroke, and mortality.

Literature Review: The literature review was conducted utilizing the following databases: PubMed, Cumulative Index to Nursing and Allied Health Literature, the Cochrane Library, and Science Direct. Keywords included beta-blocker, beta-adrenergic antagonist, perioperative, noncardiac surgery, cardiac death, and increased cardiac mortality. Ten articles were selected for inclusion in the literature review: 3 meta-analyses, 1 RCT, 1 systematic review, 2 observational studies, and 3 expert opinions.

Results: The research shows the use of perioperative beta-blockers increases mortality, stroke, bradycardia, and hypotension requiring treatment when compared with patients not receiving betablockade. Three meta-analyses concluded the current guidelines presented by the American College of Cardiology Foundation and American Heart Association have been founded on weak data, expert opinion, and potentially invalid data. Review of meta-analyses states beta-blocker use in the perioperative area is not beneficial and recommends guidelines set forth by the American College of Cardiology Foundation and American Heart Association be withdrawn.

Conclusions: The results of this quality improvement project are to provide evidence for the revision of beta-blockade protocols by Centers for Medicare and Medicaid Services, American College of Cardiology Foundation, and American Heart Association. Populations that should receive a perioperative beta-blocker include patients on long-term beta-blocker therapy, patients at a high risk for adverse events, and hemodynamically unstable patients. The literature is supporting practice change in beta-blocker administration perioperatively, currently mandated by Centers for Medicare and Medicaid Services.