Adhering to cardiovascular risk reduction guidelines decreases myocardial injury after noncardiac surgery

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| Challenge | **Myocardial injury after noncardiac surgery (MINS) is associated with increased postoperative mortality, and in recent years risk of MINS across Kaiser Permanente was higher than national averages. Adherence to guidelines for cardiac risk reduction is unknown among different centers and if that is associated with higher risk of MINS.** |
| Existing Evidence | Guidelines exist for cardiac risk reduction among patients undergoing noncardiac surgery, as well as some research research on the effectiveness of these guidelines; however, no study has examined the commonly used American College of Cardiology (ACC)/American Heart Association (AHA) guidelines for reducing cardiac risk after noncardiac surgery.  |
| Target Population | Adult patients, aged ≥45, scheduled for 10 common, elective, non-cardiac surgeries who received a perioperative medicine visit, 2016-2018. |
| Intervention or Exposure | Exposure is the adherence to 4 clinical practice guidelines |
| **Outcomes/Key Findings** | **The preoperative process variables (clinical practice guidelines) associated with improved outcomes, including initiation of beta blockers, stress testing, transthoracic echocardiogram, and delay of surgery.** These will be assessed during the 30 days (or less) between the perioperative medicine visit and the surgery. The postoperative clinical outcomes include 30-day rates of myocardial infarction and all-cause mortality after surgery. We will test the hypothesis that hospitals with lower adherence have worse outcomes.  |
| **Resulting Action/Change** | **The information will align decision-makers in perioperative medicine, surgery, anesthesiology, and cardiology to build support in their departments and strengthen perioperative workflows to increase adherence with clinical practice guidelines. Alternatively, the study may identify other possible reasons for variation in postoperative MI, such as inadequate risk assessment.** |
| Additional Recommendations | Operational leaders can consider follow up studies assessing changes in practice or identification of other reasons of MINS. |
| Implementation Tools  | We will present our findings to the leaders of the Regional Perioperative Management Program group, Anesthesia, Cardiology, and Surgery chairs of chiefs, perioperative medicine leaders, and patient surgical safety leads. With collaboration with these key stakeholders, and if appropriate, we will then use the findings to help design a pathway for patients at the highest risk for MINS. |
| Implementation Measurement | Changes to adherence among patients who are age > 45 to ACC/AHA clinical guidelines.  |
| Reference | Figure 1.doi: https://doi.org/10.1161/CIR.0000000000000106 |