Reviewer's report

Title: Obesity & hypertension are determinants of poor hemodynamic control: A retrospective review

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Reviewer: Gerard Slobogean

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Summary:
This study looks for patient variables as risk factors for the occurrence of uncontrolled intraoperative hypertension. The authors have attempted to outline the rationale for this study; however, there are several limitations with this study such as a paucity of data in the orthopaedic literature to demonstrate its importance, a lack of complication data from the study population, and a lack of casual relationship to patient reported outcomes.

The real question of interest is does poor intra-op control lead to worse patient outcome. If so, then identify risk factors would be useful.

Below are some general comments:

Abstract
Methods: “a priori algorithm” What is the algorithm? Whether they are <65% of MAP or >135% of MAP defines the outcome. This is an a priori definition of poor hemodynamic control, not an algorithm

Results:
The prevalence of hypertension and the incidence of poor hemodynamic control are very high in the study population.

Poor intraop hemodynamic control is going to be dependent on how many co-interventions are utilized by the anesthestist: fluids, anti-hypertensives / vasopressors, and even type of anesthetic used. Furthermore, this is not an area of interest to most orthopaedic surgeons with little control by the surgeon during the surgery.

Conclusion:
Do these patients warrant further attention and medical optimization prior to TJA? With 40% incidence and low complications in most series of primary TJA, I am not sure one can make this statement. What further optimization will occur preop and is there any evidence to suggest this will prevent the high incidence of poor intraoperative hemodynamic control or that this will have any effect on patient important outcomes?
Manuscript:
What was the incidence of complications in your series?

Are all inraoperative rhythm disturbances indicative of sub-optimal hemodynamic control? Similarly, blood transfusions can also occur in the absence of large hemodynamic changes.

Descriptive data: please provide some measure of dispersion for the average MAP (line 216)

It is likely that patients with pre-op hypertension do not respond to intraop management as well because they are already on anti-hypertensive medications.

How many patients did you have with RA? Saying that RA was protective with such a wide 95% CI that crosses 1.0 may be misleading, particularly if your sample size of RA subjects is relatively small.

Longer duration of surgery gives the patient more opportunity to have a period of uncontrolled hypertension and is not a clinically useful variable because the surgeon cannot change the duration of surgery and this is unlikely to be changed with preop optimization.

While I appreciate large prolonged changes in intraoperative blood pressure likely adds physiologic stress, I do not feel we know enough to find a clinically useful definition of “poor control.”

Line 286: “unacceptable hemodynamic control” Is your definition of uncontrolled hypertension unacceptable for patients to experience when undergoing TJA? I don’t know, but given the high safety of TJA and the high incidence of uncontrolled hypertension in your series, I am not convinced this statement is true.

Line 297: These patients should be medically optimized. What would you suggest? The controlled hypertensive group also had an increased RR for poor hemodynamic control. I would think these patients would have met the definition for medically optimized.

Furthermore, I am still not convinced this would change the outcome for patients. Preop weight loss for patients with end-stage arthritis is very difficult and unlikely to occur.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.