Reviewer’s report

Title: THE INFLUENCE OF THE INFUSION OF EPHEDRINE AND PHENYLEPHRINE ON THE HEMODYNAMIC STABILITY AFTER SUBARACHNOID ANESTHESIA IN SENIOR ADULTS - A CONTROLLED RANDOMIZED STUDY

Version: 2 Date: 19 Sep 2019

Reviewer: Neil Bailard

Reviewer's report:

This is an interesting and potentially important study. There is considerable literature on the prevention of hypotension after SA in the parturient, but surprisingly little on prevention of SAIH in the elderly.

The rationale and methodology are clear. The results are generally clear.

The authors go beyond their findings in some of their conclusions, however. My suggestion (only a suggestion) is that the authors include in their discussion the importance of prevention of even brief periods of hypotension in the elderly patient, because they can lead to substantial harm.

Typographic errors:

Abstract cover page: "and and"

elsewhere: hart, hearth

Please choose either SI or SVI. Confusing to read both.

In addition to substantive critiques, I would also like to suggest some changes in wording which might make the paper easier to read. I hope the authors will understand that I make these suggestions in the spirit of helpfulness.

p3, line 56: change to "... or saline (C group) within 30 minutes. We measured blood pressure, cardiac index (CI) and heart rate (HR) from 15 minutes before to 30 minutes after SA".

p5,L17: Aren't all elderly orthopedic patients ASA 1 to 4? We do not perform these procedures on ASA 5 or 6 patients...

p5, L24, Background: "The incidence of SA-induced hypotension (SAIH) in the elderly, which has been estimated as high as 80% [citation], is due to a decrease ..."
Also, reference 8 is not a primary source for the 80% figure. Reference 8 cites another paper. Better to cite that source rather than reference 8.

p6, L 59: How was the crystalloid infusion delivered? Was it via a volumetric IV pump? Or was the fluid bolus delivered by opening the IV roller clamp and "eyeballing" the infusion rate? Or some other method? Important for reproducibility and/or application to real-world clinical settings, perhaps.

Reasonable to exclude patients who received rescue vasopressors from analysis of effect of vasopressor infusion on SAIH, I think.

p9 L51, 53, 55, also p10 L 12: delete "The percentage in".

P9 L 53, delete "of patients"

p10 L24 change "was with" to "experienced"

p13 L4: the infusion of phenylephrine did not cause a temporary slight decrease in MAP, rather it was not as effective as E infusion in preventing hypotension after SA.

p13, L34 change to "... decrease of CO after SA, with CO actually increasing while the infusion was running."

Throughout: wherever you write "C group of patients" or "E group of patients" or "P group of patients" instead write "C group" or "E group" or "P group".

p13 L46: You did not present any data on SVR. It might be more correct to write "However, in this group of patients we were not able to maintain the MAP, which presumably decreased because of decreased systemic vascular resistance."

Then, "Additional infusion of the pure a [alpha] vasoconstrictor phenylephrine blunted most of the decrease in MAP."

p14L14: "presumably due to the additional increase in SVI caused by the inotropic ...

p14,L22-29: I think that your conclusion is too broad: that hemodynamic side effects can be prevented with a prophylactic infusion of vasopressor. The study was not powered to detect a difference in side effects, and no difference was found. I would strike this paragraph out.

p14,L36: The best vasopressor may in fact be different depending on the patient population.

p15L48: change to "In conclusion, our study shows that we can preserve MAP after SA with the combination..." because you found no difference in the rate of side effects, better to write only of MAP.

p16L4: change to "elderly patients receiving SA".
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

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