A244 - Perioperative use of levosimendan: harmful or beneficial?

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Introduction:
Levosimendan is a calcium sensitizer and KATP-channel opener exerting sustained hemodynamic and symptomatic effects. In the past fifteen years, levosimendan has been used in clinical practice also to stabilize at-risk patients undergoing cardiac surgery. Recently, the three randomized, placebo-controlled, multicenter studies LICORN [1], CHEETAH [2] and LEVO-CTS [3] have been testing the peri-operative use of levosimendan in patients with compromised cardiac ventricular function. Over 40 smaller trials conducted in the past [4] suggested beneficial outcomes with levosimendan in peri-operative settings. In contrast, the latest three studies were neutral or inconclusive. We aim to understand the reasons for such dissimilarity.

Methods:
We re-analyzed the results of the latest trials in the light of the previous literature to find sub-settings in which levosimendan can be demonstrated harmful or beneficial.

Results:
None of the three latest studies raised any safety concern, which is consistent with the findings of the previous smaller studies. In LEVO-CTS, mortality was significantly lower in the levosimendan arm than in the placebo arm in the subgroup of isolated CABG patients (Figure)[3]. The trend towards both hemodynamic and long term mortality benefits is maintained in recent meta-analyses [5,6] including the three larger recent studies.

Conclusion:
Despite the fact that the null hypothesis could not be ruled out in the recent trials, we conclude that levosimendan can still be viewed as a safe and effective inodilator in cardiac surgery. Statistically significant mortality benefits seem to be limited to sub-groups, such as the isolated CABG procedures, and/or the low EF patients.

References:
Ninety-day mortality among patients in the LEVO-CTS trial [3] in the subgroup of isolated CABG patients \((n=563)\).