

Category : **Cardiovascular: Monitoring**

A289 - Goal directed fluid therapy during major liver resections shows altered sublingual and intestinal microcirculation when compared to low central venous pressure

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Introduction:

The effect of low central venous pressure (CVP) or goal-directed fluid therapy (GDT) during major liver resection on organ perfusion is undefined. The present study aimed to assess sublingual and intestinal organ microcirculation during low CVP or GDT fluid management in patients undergoing major liver resection.

Methods:

In this single-center, surgeon and patient-blinded, randomized controlled trial, patients undergoing major open liver resections (≥ 3 segments) were randomized to receive either GDT or low-CVP. As a substudy of this trial, sublingual and intestinal microcirculation were assessed using the handheld video microscope, IDF imaging. The sublingual and intestinal microcirculation were measured after skin incision (T0) and before skin closure (T1); 24 hours after surgery sublingual microcirculation was measured again (T2). Patients' baseline characteristics, intra-operative parameters and outcomes were analyzed.

Results:

38 patients were included for analysis, 18 in the GDT group and 20 in the low-CVP group. Sublingual microcirculation in the GDT group showed a significant decrease in total vessel density 24 hours after surgery, and a significant decrease in intestinal microcirculatory density at the end of surgery. The GDT group showed a more positive fluid balance intraoperatively when compared to the low-CVP group. No differences in sublingual and intestinal microcirculation were found in the low-CVP group. Patient outcomes showed no differences between the groups.

Conclusion:

Perioperative monitoring of organ microcirculation revealed altered intestinal and sublingual microcirculation in the GDT group, whereas the low-CVP group showed no changes. Outcome of patients were similar between the study groups, suggesting recovery of the microcirculation in the GDT group over time. Monitoring of the organ microcirculation is a potential measure to control and evaluate the effects of fluid therapy on the perfusion.