The impact of hemodynamic management with PiCCO Plus system on the outcome of liver-transplant patients

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Background and Goals of study

- Hemodynamic monitoring during liver transplantation plays an important role in the decision making tree and patients' outcome during surgery.
- Hemodynamic complications during the preanhepatic, anhepatic and neohepatic phases of the surgery may appear and can contribute significantly to the morbidity and mortality of the patients.
- Aim of this study was to assess the relationship between the hemodynamic parameters measured with PiCCO Plus system and perioperative complications, extubation time and fluid management.

Materials and methods

- We retrospectively analysed 25 patients who underwent liver transplantation at Fundeni Clinical Institute between January 2015 and September 2015.
- We analysed demographic data, laboratory results, hemodynamic parameters obtained with PiCCO Plus system during the most important phases of the surgery, duration of surgery, the presence of postreperfusion syndrome, perioperative hemodynamic complications and extubation time.

Results

- There was a significant variation of the CI during the three phases of the surgery (p=0.02).
- Patients with CI < 3L/min/m2 during anhepatic phase developed more often post reperfusion syndrome (p=0.05) and they have longer extubation time (p=0.05).
- Neohepatic Stroke Volume Variation (SVV) correlates with total intraoperative bleeding (r=0.52).
- Patients who received less than 1500ml colloids had a greater SVV variation; in contrast crystalloids did not influence the SVV. Six patients developed major complications during the first 5 postoperative days (renal dysfunction, pulmonary complications, severe bleeding).

Conclusions

- Hemodynamic monitoring using PiCCO Plus system during liver transplantation may predict perioperative complications. SVV is an important parameter in fluid management and could influence the choice of resuscitation fluids. PiCCO Plus system is a useful tool for decision making during liver transplant.

References