

Goal directed fluid optimization using Pleth variability index versus corrected flow time in cirrhotic patients undergoing major abdominal surgeries

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Purpose

Several studies have shown that hemodynamic and fluid optimization may result in improved outcome. The aim of this study was to compare between two methods of goal directed fluid optimization using protocols guided by corrected flow time (FTc) of the transesophageal doppler versus Pleth variability index (PVI group) in cirrhotic patients undergoing major abdominal surgeries.

Methods

Sixty cirrhotic patients Child A to B scheduled for major abdominal surgery were randomized into two groups. In both groups 500 mL of Ringer's acetate was infused during induction followed by a 2 mL/kg/h continuous infusion. In FTc group (n = 30) patients with (FTc) less than 350 ms were treated with bolus of fluid challenge according to a preset protocol. In PVI group (n = 30), PVI higher than 13% patients were given 250 mL of fluid bolus.

Results

There was no significant differences in the volume of crystalloids or colloids transfused to both groups with a mean value of 2670 ± 1680 mL and 670 ± 330 mL in the FTc guided fluid group while mean values were 2730 ± 1760 mL and 690 ± 290 mL in the PVI fluid guided group respectively ($P > 0.05$). Also, there was no significant differences between groups regarding the intra or postoperative hemodynamic parameters. There was no significant difference regarding the overall morbidity or the hospital stay between the two groups ($P > 0.05$).

Conclusions

In conclusion, in cirrhotic patients Child A to B, FTc and PVI were considered to be adequate methods for perioperative fluid optimization, However, combination of every clinical finding, recent and conventional monitoring techniques to all haemodynamic data should be applied whenever possible.