

Kongress: 11th Int. Congress of Cardiothoracic and Vascular Anesthesia
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Abstract Nr.: 20
Kategorie: Infusion & transfusion
Vortragssprache: E
Vortragsart: P
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Abstracttitel: PREVENTION OF HEMODYNAMIC INSTABILITY DURING INDUCTION OF ANESTHESIA IN CARDIAC SURGERY PATIENTS

Purpose: to examine whether optimizing of base volume status prevents hemodynamic instability during induction of anesthesia.

Methods. Twenty six patients undergoing coronary artery bypass grafting were enrolled. Stroke volume index (SVI), global end-diastolic volume index (GEDI), and systemic vascular resistance index (SVRI) were evaluated by transpulmonary thermodilution method. Patients were divided into two groups. Patients of Gp.1 (n=14) received standard induction. Patients of Gp.2 (n=12) received volume challenge of 6% hydroxyethylstarch before the beginning of induction. Volume challenge was stopped at the moment when the further increase in GEDI didn't induce an increase in SVI.

Results. The baseline values of GEDI, SVI, SVRI and MAP didn't differ between the groups. Volume challenge in Gp.2 induced an increase of GEDI, SVI and MAP ($p < 0.05$). Before the beginning of induction the values of GEDI (711.7 ± 78.8 vs 845.6 ± 107.4 ml/min²), SVI (42.2 ± 6.2 vs 52.8 ± 9.6 ml/min²) and MAP (91.9 ± 12.1 vs 105.1 ± 10.5 mm Hg) were greater and SVRI (2724.8 ± 387.5 vs 2285.5 ± 400.0 din sec sm⁻⁵ m²) was lower in Gp.2 ($p < 0.05$). Before intubation the values of GEDI (617.7 ± 54.9 vs 686.1 ± 205.6), SVI (37.5 ± 5.5 vs 46.6 ± 9.6), MAP (65.7 ± 17.6 vs 81.4 ± 12.9) and SVRI (1797.1 ± 356.2 vs 2253.2 ± 367.5) were greater in Gp.2 ($p < 0.05$). Hypotension during induction was registered in 7 patients of Gp.1 and it wasn't observed in patients of Gp.2.

Conclusion. Volume challenge should be given considering the relationship between the increase in GEDI and the changes in SVI. This approach contributes to the maintenance of normal values of GEDI and the minimization of hemodynamic instability during induction of anesthesia.