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# Effect of Colloid Versus Crystalloid Administration in Cardiopulmonary Bypass Prime Solution on Tissue and Organ Perfusionm

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**Abstract :** Background: We evaluate the effects of tissue and organ perfusion during and after coronary artery bypass graft surgery with either colloid (Voluven) or crystalloid (Lactated ringers) as a prime solution. Materials and Methods: In this prospective randomized-controlled trial study, 70 patients undergoing on-pump coronary artery bypass graft surgery were randomly assigned to receive either colloid (Voluven) or crystalloid (Lactated ringer's) as a prime solution for initiation of cardiopulmonary bypass machine procedure. Tissue and organ perfusion markers, including lactate, troponin I, liver and renal function tests and electrolytes, were measured sequentially before induction (T1) to the second days after surgery (T5). Results: With the exception of chloride and potassium levels, no significant differences were detected in other measurements, and laboratory results were identical entirely in the two groups. Conclusion: Voluven® (hydroxyethyl starch, HES 130/0.4) has a not significant difference in comparison with crystalloid (Lactated ringer's) as priming solution on the basis of organ and tissue perfusion tests assessment.

**Keywords :** prime, colloid, crystalloid, lactate, troponin, hydroxyethyl starch
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