

We have evaluated the effect of a colloid solution on acute kidney injury in paediatric cardiac surgery” Oh et al (2017).

Summary

We have evaluated the effect of a colloid solution on acute kidney injury in paediatric cardiac surgery. A total of 195 patients were randomly divided into an hydroxyethyl starch group and a control group. In the starch group, 6% hydroxyethyl starch 130/0.4 (Volulyte®) was used as the primary fluid for volume resuscitation but was limited to 30 ml.kg⁻¹. In the control group, only crystalloid fluid was used during the peri-operative period. The incidence of acute kidney injury, peri-operative transfusion, clinical outcomes and laboratory data were compared. The incidence of acute kidney injury determined by Paediatric Risk, Injury, Failure, Loss, End-stage renal disease (pRIFLE) and Acute Kidney Injury Network (AKIN) criteria were no different between the two groups (starch group 40.8% vs. control group 30.0%; $p = 0.150$ using pRIFLE; 19.6% vs. 21.1% respectively, $p = 0.602$ using AKIN).

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There were no differences in clinical outcomes such as mortality, major adverse events, intensive care unit stay or duration of mechanical ventilation. Clotting time as measured using rotational thromboelastometry (ROTEM) was prolonged, and clot firmness after 10 min and maximal clot firmness were shorter in the starch group compared with the control group after sternal closure. There was no difference in transfusion between the two groups. Patients with acute kidney injury had worse clinical courses than those without acute kidney injury. We conclude that intra-operative use of 6% hydroxyethyl starch 130/0.4 up to 30 ml.kg⁻¹ was not associated with postoperative acute kidney injury in paediatric cardiac patients.

Reference:

Oh, H-W., Lee, J-H., Kim, H-C., Kim, E-H., Song, I-K., Kim, H-S. and Kim, J-T. (2017) The effect of 6% hydroxyethyl starch (130/0.4) on acute kidney injury in paediatric cardiac

surgery: a prospective, randomised trial. Anaesthesia. November 17th. .

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