Venous autologous priming - effect on end-surgery fluid balance, haematologic conditions and postoperative body weight

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Background: A haemodilution occurs when cardiopulmonary bypass is initiated and crystalloid fluid is mixed with blood. This dilution effects haemoglobin, fluid balance and coagulation parameters and increases the risk of blood transfusion. Haemodilution can be reduced if part of the crystalloid fluid is replaced with the patient’s own blood (autologous priming).

Materials and Methods: We evaluated the effects of venous autologous priming in a descriptive quality assurance pilot study of 28 patients.

Results: The prime volume was 820 mL (mean value) for the study group (n = 11) and 1300 mL for the control group (n =17). Significant difference between the groups was observed in perioperative (start-surgery to end-surgery) fluid balance (p = 0.047). There was no significant difference between pre- and postoperative weight between the groups. Start-surgery and end-surgery haemoglobin and haematocrit were not significantly different between the two groups.

Conclusion: In this pilot study our results show that patients received less volume with venous autologous priming but the weight difference postoperatively was not statistically significant between the two groups. A future study including postoperative data regarding fluid management and medicine, with a larger number of patients, would permit a stronger conclusion on the effects of venous autologous priming.

Keywords: "autologous priming", "CPB"