



دانشگاه علوم پزشکی
و خدمات بهداشتی درمانی بابل

دانشگاه علوم پزشکی و خدمات بهداشتی و درمانی بابل
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مقایسه تأثیر استفاده از سیستم هوای فشرده گرم و سرم وریدی گرم با روش روتین بر پارامترهای همودینامیک، لرز و زمان بیدار شدن در سالمندان تحت جراحی قلب باز

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The Effects of Forced-Air Warming System and Warmed
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The Effects of Forced-Air Warming System and Warmed Intravenous Fluids on Hemodynamic Parameters, Shivering, and Awakening Time in Elderly Patients Undergoing Open-Heart Surgery

Abstract

Background and Aim: As one of the frequent After open heart surgery complications, hypothermia is the leading cause of numerous problems during treatments, particularly in patients with decreased cardiac reserves. Regarding the effects of forced-air warming system on the outcomes after open heart surgery, contradictory results have been obtained. Against this background, the present study aimed to compare the effects of forced-air warming system and warmed intravenous fluids on hemodynamic parameters, arterial blood gases, shivering, and awakening time in the elderly patients undergoing open-heart surgery.

Methods: This randomized controlled clinical trial conducted on 94 elderly people undergoing open heart surgery in three groups: warm compressed air (31 people), warm venous serum (31 people) and routine method (blanket) (32 people) at Ayatollah Rouhani Hospital in Babol(Iran). used hemodynamic parameters, shivering and waking time checklist. Descriptive and inferential statistics used for data analysis with SPSS version 26 software. A significance level of less than 0.05 considered.

Results: The study groups were homogenous in terms of gender and age. The study findings demonstrated that the grades of hypothermia in the groups receiving forced-air warming system and warmed intravenous fluids had a significant falling trend ($p=0.002$). Additionally, increased respiratory rate ($p=0.013$), higher levels of bicarbonate on arrival up to 4 hours after surgery ($p=0.045$), reduced lactate level ($p=0.005$), normal base excess, and accelerated awakening time ($p=0.004$) were observed in the patients experiencing forced-air warming system. Considering shivering, there was no significant difference in the study groups.

Conclusion: Based on the results, warm compressed air and warm venous serum system were more stable than the routine method on hemodynamic indicators and more effective in accelerating the awakening of elderly people undergoing open heart surgery. Therefore, suggested to use compressed air system and warm venous serum to achieve stable hemodynamic parameters and improve health status of patients undergoing open heart surgery.

Keywords: Shivering, Rewarming, Anesthesia Recovery, Cardiac Surgery, Elder

