عنوان مقاله:

Effect of Vitamin C on Serum Cortisol after Etomidate Induction of Anesthesia

محل انتشار:

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خلاصه مقاله:

Background: Etomidate is suitable for induction of anesthesia, especially in elderly patients and patients who have cardiovascular compromise. Vitamin C has been introduced as a treatment option to decrease Etomidate induced adrenal insufficiency but its actual effect is still controversial. Objective is to determine the effect of vitamin C on reduction of serum cortisol after Etomidate induction of anesthesia.Materials and Methods: In a randomized clinical trial, 40 patients of the American Society of Anesthesiologists (ASA) class I and II, aged between 25 to 70 years old, candidate for elective laparotomy were selected. One hour before induction of surgery, 1 gram of intravenous vitamin C were administered to the patients in vitamin C group. Two blood samples were obtained 5 minutes before induction and then another sample 4 hours after induction with Etomidate after surgery. All samples were measured for serum free cortisol, ACTH, and C-reactive protein (CRP).Results: There were no significant differences between duration of surgery, pre-operative and post-operative blood pressure and heart rate in two groups (p> 0.05). Serum cortisol was significantly declined in control group from 16.2±6.3 µg/dl in pre-operative to 8.5±4.2 in post-operative (p=0.0005), but not in vitamin C group from 17.5±5.6 in pre-operative to 16.8±6.4 in post-operative (p=0.75). ACTH levels increased non-significantly from pre-operative to post-operative period in both vitamin C (pre-operative: 52.1±15 vs. post-operative: 56.4±18 pg/ml) (p=0.48) and in control group (pre-operative: 50.5±16 vs. post-operative: 56.2±20).Conclusion: Etomidate could significantly decrease post-operative serum free cortisol and induce adrenocortical suppression and CRP increase. This effect could be reversed by using vitamin C premedication to maintain serum cortisol at pre-operative level.

کلمات کلیدی:

ACTH, Cortisol, Etomidate, Vitamin C