عنوان مقاله:

The Effect of Spinal and General Anesthesia on Serum Lipid Peroxides and Total Antioxidant Capacity in Diabetic Patients with Lower Limb Amputation Surgery

محل انتشار:

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خلاصه مقاله:

Background: Anesthesia is performed in two major methods including regional and general.The aim of this study was to compare the effect of anesthesia method (spinal and general) on oxidative stress indiabetic patients underwent diabetic amputation surgery.Methods: In this randomized control trial, 40 patients with diabetic foot who were candidate for foot amputationsurgery at our academic hospital in 2013, were selected and divided into two groups based on anesthesia method.Lipid peroxide level and serum total antioxidant capacity (TAC) were measured before anesthesia induction and onehour after surgery. As the normal range, the findings obtained from 23 healthy volunteers were utilized.Results: Mean age was 54.9±11.21 and 52.4±11.23 years in the spinal anesthesia (SA) and the general anesthesia(GA) group, respectively (P=0.49). Serum TAC in GA group increased from 1.03±0.04 mM to 2.98±0.7 mM. In SAgroup, the increase of serum TAC from 1.22±0.11 mM to 3.42±0.5 mM was observed that indicated the increase ofserum TAC in both groups was not significantly different (P=0.21). Serum Malondialdehyde (MDA) in GA and SAgroups did not show a significant difference before surgery (31.14±3.9 mM vs. 29.06±2.49 mM in GA and SA groups,respectively) (P=0.31), while it was significantly different after surgery (23.14±2.6 mM and 19.24±2.7 mM in GA and SAgroups, respectively) (P=0.03).Conclusion: lower limb amputation can help to control oxidative stress in diabetic patients; and considering serumMDA as a marker of oxidative stress, SA seems to be more effective to control this problem.

کلمات کلیدی:

Antioxidant, Diabetic foot, Lipid peroxide, General anesthesia, Foot amputation, Spinal anesthesia