

Research

The Effect of 3000 mg Vitamin C Infusion on Histamine Level in Severely Burned Patients (A Randomized, Prospective Study)

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Abstract

Introduction: The underlying process involved in burn injury is both a local and systemic inflammatory reaction, the end result of which is an almost immediate shift of intravascular fluid into the surrounding interstitial space. This occurs as a consequence of changes in vascular permeability as the normal capillary barrier is disrupted by a host of mediators, one of them is histamine. Vitamin C functions as an antiinflammatory on burn by destroying imizadole ring structure of the histamine molecule. Recent studies, high dose of vitamin C (66 mg/kg/day) could reduce the resuscitation fluid in burned patients, another study in seriously ill and injured patients, 3000 mg/day of vitamin C should be given for at least the first 3 days. In this study, we examine the histamine plasma level in severely burned patients after being treated by administration of 3000 mg/day vitamin C for three days consecutively.

The purpose of this research is to review the effect of 3000 mg vitamin C infusion on histamine level in severely burned patients.

Methods: A randomized pre & post test control group design. Histamine levels are determined in 16 severely burned patients, according to American Burn Association criteria in 2007, the age are between 16-65 y.o. There are two groups of patient, the first group/control group (G1) is treated with vitamin C 2x 400 mg . The second group (G2) is treated by infusion of 3000 mg/day vitamin for 3 days consecutively. The blood samples are taken on the first and fourth days after resuscitation. We collect the data of histamine level, leucocyte, renal function test, and blood gas analysis. Paired samples test & independent samples test were used to analyze the data.

Results: Histamine level in control group had a tendency to risen up compared to the second group although not statistically significant. It proves that vitamin C act as an antiinflammation agent. There were no significant results from blood gas analysis, BUN, leucocyte, and creatinine serum in placebo group. In the second group, there were significant results in leucocyte pre & post vitamin C infusion {sig.(2-tailed),0,045, $P < 0,05$ }.

Discussion: Vitamin C affects in reducing the histamine level although not statistically significant. It might be caused by the lacking of sample. There were no significant results on blood gas analysis, BUN, creatinine serum. The significant result of leucocyte could be seen in patients with vitamin C infusion.

Key Words: *vitamin C, Histamine, severely burned patients*