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THE EFFECT OF SINGLE DOSE VITAMIN D3 INTRAMUSCULAR INJECTION DURING INTENSIVE CARE UNIT ON RENAL FUNCTION IN PATIENTS WITH TRAUMATIC INJURIES: A DOUBLE-BLINDED, RANDOMIZED, AND CONTROL TRIAL STUDY

Moftakhar F.[1], Nejadrasoli M.[2], Behaeen K.[1], Ghomeishi A.[1], Farhadi E.[3], Savaie M.[1*]

[1] Pain Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.
[2] Anesthesiology Department, School of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.
[3] Clinical Research Development Unit, Golestan Hospital, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

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Abstract

Background: *Vitamin D deficiency is an independent risk factor for cardiovascular disease and a predictor of chronic kidney disease, especially in traumatic patients admitted to the intensive care unit. This study aims to investigate the effect of single-dose intramuscular injection of vitamin D3 on renal function in patients with traumatic injuries.*

Methods: *This was a randomized clinical trial with a control group in a parallel, double-blind, randomized study that enrolled patients from 2023-08 to 2023-10. The patients were divided into intervention (receiving vitamin D) and control groups. During the first 24 hours of hospitalization, both groups received either an intramuscular dose of the drug (300,000 units of vitamin D) or a placebo (which was identical to the original drug). Demographic information of patients (age, sex, underlying disease, height, and weight), trauma severity score (revised trauma score and new trauma score), the number of days requiring ventilation, anthropometric indices (BMI, abdominal circumference, and the ratio of abdominal circumference to hip circumference), length of hospital stay, blood urea nitrogen, and creatinine levels, were checked and recorded.*

Results: *Finally, 60 patients were included in this study. Most of the patients (85%) were male. The mean age of the patients (35.2 ± 13.96 years), the average new trauma score and revised trauma score showed no any significant differences between two groups (P>0.05). Statistical analysis showed that the differences of average number of hospitalization days, the days requiring ventilation and the increase in blood urea nitrogen and creatinine levels between intervention and control groups were not significant (P>0.05).*

Conclusion: *Administration of vitamin D in patients hospitalized in intensive care unit does not have a significant and beneficial effect on blood urea nitrogen, creatinine, the number of hospitalization days and the days requiring ventilation.*

Keywords: *traumatic injuries, renal insufficiency, chronic kidney disease, intensive care unit, vitamin D.*

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Address for Correspondence:
Mohsen Savaie MD Associate Professor
Pain Research Center, Ahvaz Jundishapur University of Medical Sciences, Golestan street, Ahvaz 6135733118, Iran
Tel: +989370336077
E-mail: drsavaie@gmail.com