

## Original Paper

# Effect of intravenous Vitamin C on sleep quality in hemodialysis patients

Espahbodi F (MD)<sup>1</sup>, Emami Zeydi A (MSc)<sup>2</sup>  
Gholipour Baradari A (MD)\*<sup>3</sup>, Khademloo M (PhD)<sup>4</sup>

<sup>1</sup>Assistant Professor, Department of Nephrology, Faculty of Medicine, Mazandaran University of Medical Sciences, Sari, Iran. <sup>2</sup>Msc in Critical Care Nursing, Faculty of Nursing and Midwifery, Mazandaran University of Medical Sciences, Sari, Iran. <sup>3</sup>Assistant Professor, Department of Anesthesiology, Faculty of Medicine, Mazandaran University of Medical Sciences, Sari, Iran. <sup>4</sup>Associate Professor, Department of Community Medicine, Faculty of Medicine, Mazandaran University of Medical Sciences, Sari, Iran.

---

## Abstract

**Background and Objective:** Poor sleep quality is common among hemodialysis patients and can potentially predict morbidity, mortality and quality of life in these patients. On the other hand, hemodialysis patients are encountered with vitamin C deficiency. The purpose of this study was to determine the effect of intravenous vitamin C on sleep quality in hemodialysis patients.

**Materials and Methods:** In this double blind randomized clinical trial, 60 qualified hemodialysis patients were gone under investigation in Sari a city located in North of Iran during 2010. Patients randomly allocated in two equal intervention and control groups. The main measured outcome was the Pittsburg sleep quality index (PSQI) which consists of seven components. At the end of each hemodialysis session, Intervention group received vitamin C vial (500mg/5cc) intravenously, three times a week for 8 weeks and control group received normal saline in a same way. Data were collected at pretreatment and after two months of treatment. Data were analyzed by Independent t test, Paired t test, Wilcoxon and Chi-Square tests.

**Results:** The result indicated that the sleep quality improves significantly in vitamin C group but not in control group ( $P < 0.001$ ). Vitamin C caused significant improvement in subjective sleep quality, sleep latency, habitual sleep efficiency and sleep disturbances in intervention group ( $p < 0.05$ ). Also, Global PSQI score of intervention group had a greater improvement than control group. Moreover vitamin C caused significant improvement in subjective sleep quality, sleep latency, habitual sleep efficiency and sleep disturbances in intervention group after treatment ( $p < 0.05$ ).

**Conclusion:** This study showed that intravenous vitamin C can effectively improve sleep quality in hemodialysis patients.

**Keywords:** Hemodialysis, Vitamin C, sleep quality

---

\* **Corresponding Author:** Gholipour Baradari A (MD), E-mail: gholipourafshin@yahoo.com

Received 14 December 2010    Revised 16 February 2011    Accepted 22 February 2011