

The effect of ranitidine intakes on hemodialysis efficacy among end stage renal disease (ESRD) patients in Saudi Arabia

Mohd Alaraj, PhD, University of Hail, Saudi Arabia

Ashfaque Hossain, PhD, Ras Al Khaimah Medical and Health Sciences University, Ras Al Khaimah, UAE

Bahaa Al-Trad, PHD, Yarmouk University, Jordan.

Nasim Alaraj, MD, Faculty of Medicine, Peoples' Friendship University of Russia, Moscow, Russia

Abstract

Statement of the Problem: Inefficiency of hemodialysis (HD) is a major cause of the increased rate of morbidity and mortality observed in patients with end stage renal disease (ESRD). The recommended techniques to optimize HD achievement are still not fully successful. This may, at least in part, relate to inadequate understanding of the factors affecting the HD process, including drugs taking by these patients. Previously, we demonstrated that hemodialysis efficiency, particularly in patients with less than 50 years of age may be improved by decreasing the serum uric levels. In the current study, we assessed the potential relationship between ranitidine intake and hemodialysis efficiency among ESRD patients in Hail, Saudi Arabia. **Methodology:** A total of 275 hemodialysis patients (122 males and 153 females) were enrolled in this retrospective study. The range was 25 to 83 years with median age of 51 years. Blood sampling was collected pre- and post-HD to calculate the HD efficiency indices, particularly Kt/V, creatinine reduction ratio, uric acid ratio, and urea reduction ratio. **Results:** We found that the proportion of female patients with ESRD was significantly higher (60%; $p < 0.05$), than the males in the patient group examined. Among hemodialysis patients, the incidence of hypertension was 86 % ($p < 0.05$). There was a positive association between ranitidine supplementations and HD efficiency. A significant increase in Kt/V ($p = 0.03$) ratio was detected in patient taken ranitidine. Also, significant increase in creatinine ($p = 0.008$), uric acid ($p = 0.008$), and urea ($p = 0.029$) reductions were observed. **Conclusions:** Taken together, the results of this study indicate that the hemodialysis efficiency in HD subjects may be significantly improved by supplementation with ranitidine.

Image

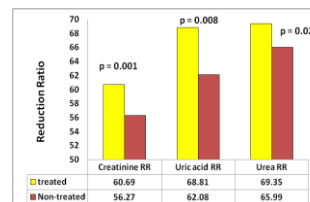


Figure1. Effects of ranitidine treatment on the reduction of creatinine, uric acid and urea

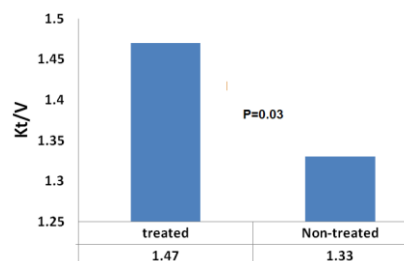


Figure2. Effects of ranitidine treatment on Kt/V ratio.

Recent Publications

- Alaraj, M., et al., Role of Age and Uric Acid Levels on Dialysis Efficacy *Journal of Research in Medical and Dental Science*, 2016, **4** (2): 92-96.
- Djuric, P.S., et al., *FP540EFFECT OF MODALITY AND DURATION OF HEMODIALYSIS ON PARAMETERS OF ADEQUACY AND ALL- CAUSE MORTALITY- 36 MONTHS FOLLOW UP*. *Nephrology Dialysis Transplantation*, 2015. **30**(suppl 3): p. iii253-iii253.
- Jadoul, M., et al., *Modifiable practices associated with sudden death among hemodialysis patients in the Dialysis Outcomes and Practice Patterns Study*. *Clinical Journal of the American Society of Nephrology*, 2012. **7**(5): p. 765-774.
- Maduell, F., et al., High-efficiency postdilution online hemodiafiltration reduces all-cause mortality in hemodialysis patients. *Journal of the American Society of Nephrology*, 2013. **24**(3): p. 487-497.
- Mustafa, R.A., et al., *Effect of Lowering the Dialysate Temperature in Chronic Hemodialysis: A Systematic Review and Meta-Analysis*. *Clinical Journal of the American Society of Nephrology*,

2015; p. CJN. 04580415.

6. Singh, S., et al., *Ten-year patient survival on maintenance haemodialysis: association with*

treatment time and dialysis dose. J Nephrol, 2013. **26**: p. 763-70.



Biography

Dr Alaraj (Associate Professor) was educated at Warsaw University, Poland and received a MS in Chemistry and Drug Technology in 1987. He obtained his PhD in 1995 from the College of Pharmacy, Medical University of Warsaw, Poland, having worked on the effects of polypeptide on the activity of some antiepileptic drugs. Dr Alaraj moved to “Mossakowski Medical Research Centre”, Polish Academy of Sciences where he began research in calcium signaling and role of glucose on neurodegeneration. Since joining the Medical Faculty-University of Hail (2008), Dr Alaraj has been mainly involved in evaluating the hemodialysis efficiency and implication of uric acid in kidney impairment and other aspects of kidney diseases- among end stage renal disease (ESRD) patients. Recently he has identified that serum uric acid negatively affect the efficacy of HD. He is currently involved in identifying the relationship between drugs used and HD efficacy among ESRD patients.
