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

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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 taken 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, urea reduction ratio, and creatinine 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.

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