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Relationship between glycosylated hemoglobin and macrominerals in renal dialysis patients of Hail, Saudi Arabia**Nawaf OM Alhazmi, Mohammed RM Alshammari, Rasheed HR Alshortan, Ahmad F Alhaysuni, Jamal M Arif and Mohammed Kuddus**
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Essential minerals have significant role in the glucose metabolism and energy production inside the cell. Imperfect minerals metabolism have been associated with the increased mortality of renal dialysis patients, but their effects in these patients are less characterized. The literature suggested that the incidence of renal dialysis patients in Saudi Arabia showed rapid increase over the last 3 decades. In the present study, we examined the correlations between levels of minerals (serum calcium, phosphorus and magnesium) and HbA1c in diabetic and non-diabetic renal dialysis patients of Hail region. Total 76 blood samples of renal dialysis patients (diabetic and non-diabetic) were analyzed by using biochemical methods. As expected, no significant relationship was observed ($p>0.05$) in baseline parameters such as age, sodium, potassium, bilirubin, creatinine, urea and glucose, in both diabetic and non-diabetic renal dialysis patients. The results also showed that there is no significant relationship between calcium and phosphorus, calcium and magnesium as well as magnesium and phosphorus in non-diabetic renal dialysis patients; however, in diabetic patients calcium and phosphorus have minor significant association ($p=0.057$). Further, there was no significant relationship between phosphorus and HbA1c in both types of renal dialysis patients. However, in diabetic renal dialysis patients there was significant relationship ($p<0.05$) between calcium and HbA1c as well as magnesium and HbA1c. These preliminary results indicate the supportive role of calcium, magnesium and Hb1Ac in the better management of diabetes. The supplementation of calcium and magnesium might be beneficial to manage energy level associated with weakness in the diabetic patients.

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