PP 14

Correlation between serum and salivary uric acid and creatinine levels of patients undergoing haemodialysis at Teaching Hospital Jaffna, Sri Lanka

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Background: Blood analysis is commonly used as the diagnostic tool in Chronic Kidney Diseases **(**CKDs). Substitution of blood with saliva can be an alternative, to avoid painful and invasive procedures.

Objective: The objective was to evaluate the correlation between serum and salivary uric acid and creatinine levels of patients undergoing haemodialysis at Haemodialysis Unit, Teaching Hospital Jaffna, Sri Lanka.

Methods & Materials: A total of 37 blood and salivary samples were collected from patients and analysed for uric acid and creatinine by uricase peroxidase coupled reaction and Jaffe Alkaline picric acid kinetic methods respectively. Correlations were assessed using pearson correlation coefficient.

Results: The patients were grouped as group I (15-39 years) and group II (40-59 years) based on age as well as based on the non-communicable diseases. Serum and salivary uric acid levels of the patients ranged between 1.23-9.01 [5.53 (±1.67)] mg/dL and 0.12-10.81 [2.81 (±2.79)] mg/dL respectively. Serum and salivary creatinine levels of the total population ranged between 1.23-12.98 [7.14 (± 2.79)] mg/dL, and 0.31-3.52 [1.37 (±0.81)] mg/dL respectively. Serum and salivary uric acid ($r=0.617$) and creatinine ($r=0.528$) levels showed significant positive correlation ($p<0.001$). There was a statistically significant correlation between serum and salivary creatinine and uric acid among Male ($r=0.461$, $p=0.014$; $r=0.544$, $p=0.003$), female ($r=0.668$, $p=0.049$; $r=0.758$, $p=0.018$), group I (15-39 years) ($r=0.510$, $p=0.031$; $r=0.733$, $p=0.001$) and group II (40-59 years) ($r=0.623$, $p=0.004$; $r=0.521$, $p=0.022$). Among the patients with non-communicable diseases, serum, and salivary creatinine and uric acid levels showed significant moderate positive correlation only among the patients with hypertension ($r=0.520$, $p=0.023$; $r= 0.612$, $p=0.005$).

Conclusion: Study supports the possibility of using saliva as a diagnostic and monitoring marker in CKD patients, especially on those who have hypertension. However, this study has to be done on a larger population.

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