Evaluation of the Relation between Serum and Saliva Levels of Sodium and Glucose in Healthy Referred Patients to Tabriz Faculty of Dentistry

Authors : Samaneh Nazemi, Ayla Bahramian, Marzieh Aghazadeh

Abstract : Saliva is a clear liquid composed of water, electrolytes, glucose, amylase, glycoproteins, and antimicrobial enzymes. The presence of a wide range of molecules and proteins in saliva has made this fluid valuable in screening for some diseases as well as epidemiological studies. Saliva is easier than serum to collect in large populations. Due to the importance of sodium and glucose levels in many biological processes, this study investigates the relationship between sodium and glucose levels in salivary and serum samples of healthy individuals referring to Tabriz Dental School. This descriptive-analytical study was performed on 40 healthy individuals referred to the Oral Diseases Department of Tabriz Dental School. Serum and saliva samples were taken from these patients according to standard protocols. Data were presented as mean (standard deviation) and frequency (percentage) for quantitative and qualitative variables. Pearson test, paired-samples T-test and SPSS 24 software were used to determine the correlation between serum and salivary levels of these biomarkers. In this study, P less than 0.05% is considered significant. Out of 40 participants in this study, 14 (35%) were male, and 26 (65%) were female. According to the results of this study, the mean salivary sodium (127.53 ml/dl) was lower than the mean serum sodium (141.2725 ml/dl). In contrast, the mean salivary glucose (4.55 ml/dl) was lower than the mean serum glucose (89.7575 ml/dl). The result of paired samples T-test (p-value<0.05) showed that there is a statistically significant difference between the mean of serum sodium and salivary sodium, as well as between the serum glucose and salivary glucose. Pearson correlation test results showed that there is no significant correlation between serum sodium and salivary sodium (p-value >0.05), but here is a positive correlation between serum glucose and salivary glucose (p-value<0.001). Both serum sodium and glucose were higher than salivary sodium and glucose.In conclusion, this study found that there was not a statistical relationship between salivary glucose and serum glucose and also salivary sodium and serum sodium of healthy individuals. Perhaps salivary samples can't be used to measure glucose and sodium in these individuals.
Keywords : glucose, saliva, serum, sodium

Conference Title : ICDDMH 2022 : International Conference on Dentistry, Dental Medicine and Healthcare
Conference Location : Prague, Czechia
Conference Dates : July 12-13, 2022