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# Correlation between serum and salivary fasting lipid profile on type 2 diabetic patients attending diabetic centre at Teaching Hospital Jaffna, Sri Lanka

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**Background:** In type 2 diabetes, insulin resistance leads to abnormal lipid levels. Currently fasting serum sample is used to detect and treat lipid abnormalities. Most compounds in blood also exist in saliva, hence this study will help to use saliva as a non-invasive diagnostic tool to estimate the lipid profile.

**Objective:** The objective of this study was to correlate serum and salivary lipid profile [TC (Total Cholesterol), TG (Triglycerides), HDL-c (High Density Lipoprotein cholesterol), VLDL (Very Low Density Lipoprotein Cholesterol) and LDL-c (Low Density Lipoprotein cholesterol)] among patients with type 2 diabetes mellitus attending the diabetes center, Teaching hospital Jaffna, Sri Lanka.

**Methods & Materials:** This was a hospital based descriptive cross-sectional study. A total number of 75 patients aged between 39–78 years diagnosed as type 2 diabetes attending to the diabetic centre, Teaching Hospital, Jaffna, Sri Lanka were included in this study. Systematic random sampling technique was used to select the participants. Serum and salivary total cholesterol, triglycerides and HDL-c were measured. Serum and salivary LDL-c were calculated using Friedewald formula. Serum and salivary VLDL were estimated using the factor [triglycerides]/5. Statistical analysis was carried out using descriptive, correlation and regression analysis. For all tests, $p<0.001$ was taken to be statistically significant.

**Results:** Out of 75 diabetic patients, 45(60%) were females and 30 (40%) were males. The mean age was 58.73±8.85 years for females and 57.60±7.48 years for males. Salivary mean values of TC, TG, HDL-c, LDL-c and VLDL increased along with the increase of serum mean values. A significant positive mild to moderate degree of correlation was observed in all five parameters and the correlation coefficients were statistically significant ($p<0.001$). The r value and $R^2$ of all five parameters are as follows: TC ($r=0.444$, $R^2=0.197$), triglycerides ($r=0.483$, $R^2= 0.233$), HDL-c ($r= 0.598$, $R^2=0.358$), LDL-c ($r=0.527$, $R^2=0.278$), and VLDL ($r=0.483$, $R^2=0.233$).

**Conclusion:** The results of the study showed that there was a mild to moderate level of correlation existing between serum and salivary TC, TG, HDL-c, LDL-c and VLDL. For all the five lipid parameters, the correlation coefficients were highly significant statistically ($p<0.001$). Thus, the study showed the possibility to use the saliva as a non-invasive diagnostic tool for assessing lipid profile. However, the diagnostic value of the salivary lipid profile test should be considered before salivary diagnostics.

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