Determinants of atherogenic index and gingival index in type two diabetic subjects of Tamilnadu, India

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Chronic low-grade inflammation is closely involved in the pathogenesis of type 2 diabetes (T2DM) associated clinical complications and periodontal diseases. In this study, a cohort of unrelated, T2DM subjects (n=129, mean age=48.7±11.4 years) with dental complications were recruited by purposive sampling method with informed and written consent from a tertiary dental clinic of Coimbatore, Tamilnadu. Fasting blood samples were obtained for clinical analysis and dental examination was performed for gingival complications and periodontitis. Atherogenic index and gingival index was calculated. Data was analysed for significance using SPSS (Version 17, Chicago, USA). The mean glycated heamoglobin (HbA1c) and atherogenic index was 6.96±1.76 % and 6.13±2.67 respectively. Data was categorized into three groups of gingival index namely mild, moderate and severe. Higher mean values of atherogenic index (6.06±2.56), low density lipoprotein cholesterol (155.91±26.97 mg/dl) and HbA1c (7.37%) was recorded in subjects with moderate gingival index. Serum triglycerides values, post prandial glucose levels and gingival pocket depth were significant variables with positive correlation (P<0.05). Linear regression analysis derived serum triglycerides, clinical attachment level and pocket depth as predictor variables determining gingival index (regression coefficient=0.73). Furthermore, atherogenic index was determined only by three clinical variables namely total cholesterol, high density lipoprotein cholesterol and triglycerides (regression coefficient=0.59). It is inferred that triglyceride is a prognostic serum biomarker predictive of atherogenic index, gingival index and metabolic syndrome in subjects with type two diabetes.

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