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Factors influencing success of immediately-loaded implants in diabetic patients

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The aim of the present 2-year follow-up study was to assess the effect of oral hygiene maintenance on hemoglobin Alc (HbA1c) levels and peri-implant parameters around immediately-loaded dental implants placed in type-2 diabetic patients with varying glycemic levels.Ninety-one individuals were divided into three groups. In group 1, 30 systemically healthy individuals were included (HbA1c < 6%). Patients in group 2 and 3, comprised of 30 patients with T2DM (HbA1c 6.1-8%); and 31 patients with T2DM (HbA1c 8.1-10%) respectively. In all groups, patients received immediately loaded bone level implants. All participants were enrolled in a 6 monthly periodontal/peri-implant maintenance program. Peri-implant bleeding on probing (BOP), probing depth (PD), and marginal bone loss (MBL) were measured at 6, 12, and 24 months of follow-up. Mean preoperative HbA1c levels in patients in groups 1, 2, and 3 were 4.5%, 6.8%, and 8.7% respectively. In group-1, there was no significant difference in HbA1c levels at all follow-up durations. Among patients in groups 2 and 3, there was a significant decrease in HbA1c levels at 24-months follow-up than 6-months follow-up. At 6 months follow-up, BOP, PD, and MBL were significantly higher among patients in group-3 than group-1. At 12 and 24 months follow-up, there was no significant difference in BOP, PD, and MBL in all groups. Oral hygiene maintenance reduces hyperglycemia and peri-implant inflammatory parameters around immediately loaded dental implants placed in type 2 diabetic patients.

Association of hematological parameters and Renal function test in type 2 diabetic patient

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Diabetes mellitus is a metabolic disorder characterized by high blood sugar, insulin resistance, and relative lack of insulin. The aim of this research is to evaluate the relationship between the hematological parameter, renal function test (Urea, Creatinine, Sodium, and Potassium) along with blood glucose level in type 2 diabetic patient. This is a cross sectional study conducted in tertiary care hospital, Nuwakot, Nepal, n=50. The diagnosed case of diabetes was included in the research. The test were performed from fully automated analyser, ERBA, XL-200 for Biochemical test and semi automated, Coulter counter for hematological test. The mean age (59.54 ± 14.77), WBC (9674.00 ± 4582.87), Hemoglobin (12.44 ± 3.59) and ESR (28.44 ± 17.32) were found in our study. We found that increase in blood sugar (Fasting/PP) with onset and duration of diabetes, dietary, environment increases the level of Urea and Creatinine i.e. (r=0.667,p=0.001). Pearson correlation analysis shows positive relation among fasting sugar and potassium (r=0.293, p=0.039). Post Prandial blood Sugar and Potassium (r=0.312, p=0.027), Urea and ESR (r=0.298,p=0.036), Platelets and Urea (r=0.276,p=0.05), Fasting blood sugar and Eosinophil (r=0.304,p=0.03), Potassium and Eosinophil (r=0.33,p=0.01). Result shows that WBC was increased with high neutrophil count whereas hemoglobin, PCV and MCV, MCH, MCHC were decreased. The immunity level of patient was found to be sufficiently decreased with increase in ESR level which shows that activation of natural killer cells,Cytokines and external agents interference in normal physiological process. The findings shows that hyperglycemia is the cause for renal dysfunction and progression of renal failure.Further study is needed to validate the relationship of various parameters in a large size population.

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