

Biochemical and immunological evaluation of anabolic hormone and calcium-vitamin D administration in implant overdenture cases

This study included twenty fully-edentulous female patients received two endosseous titanium implants. Mandibular overdenture with O-ring attachment was constructed for each patient. The patients were divided into two groups (A and B). Group (A) received no treatment and was considered as control group, while group (B) received anabolic hormone with calcium and vitamin D. For all of them, the levels of serum calcium, alkaline phosphatase, osteocalcin tumor necrosis factor-alpha (TNF- α) and nitric oxide, were determined before implant placement, then after implant and implant overdenture insertion. The results showed statistical significant difference between group (A) and group (B) as regard serum osteocalcin level at the first, third and ninth month follow up periods of implant overdenture patients. A positive correlation was found between serum alkaline phosphatase and osteocalcin in group (B) only at the third and ninth month. The result also showed significant decrease in the levels of serum TNF- α and nitric oxide in group (B) than the control group and a positive correlation was found between TNF- α and nitric oxide in group (B) at the third and nine month follow up periods. These results show that implant overdentures are favored treatment modality of extreme atrophy or poor bone quality. Improvement of the systemic condition of the patients is necessary to suppress alveolar bone resorption. Anabolic hormone administration with calcium and vitamin D may be beneficial to arrest or slow the progression of bone loss and increasing the immunity of the patient. Biochemical analysis is very necessary and must be associated with any pharmacotherapeutics.