

Role of Vitamin D in Osseointegration of Dental Implant

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Abstract : Dental implants are a successful treatment modality for restoring both function and aesthetics. Dental implant treatment has predictive results in the replacement of the lost teeth and has a high success rate even in the long term. The most important factor which is responsible for the positive course of implant treatment is the process of osseointegration between the implant structure and the host's bone tissue. During recent years, many studies have focused on surgical and prosthetic factors, as well as the implant-related factors. However, implant failure still occurs despite the improvements that have led to the increased survival rate of dental implants, which suggests the possible role of some host-related risk factors. Vitamin D is a fat-soluble vitamin regulating calcium and phosphorus metabolism in tissues. The role of vitamin D in bone healing has been under investigation for several years. Vitamin D deficiency has also been associated with impaired and delayed callus formation and fractures healing; however, the role of vitamin D has not been clarified. Therefore, it is extremely important to study the phenomenon of a connection formed between bone tissue and the surface of a titanium implant and find correlations between the 25- hydroxycholecalciferol concentration in blood serum and the course of osseointegration. Because the processes of bone remodeling are very dynamic in the period of actual osseointegration, it is necessary to obtain the correct concentration of vitamin D3 metabolites in blood serum. In conclusion, the correct level of 25-hydroxycholecalciferol on the day of surgery and vitamin D deficiency treatment have a significant influence on the increase in the bone level at the implant site during the process of osseointegration assessed radiologically.

Keywords : implant, osseointegration, vitamin d, dental

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