

Early implant failure using ITI implant system for fixed partial prosthesis

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Aim: Prospective study aimed to assess early implant failure using ITI dental implant system for fixed partial prosthesis at KHMC and to determine the effect of several potential risk factors on this early failure.

Method: All the patients scheduled for partial prosthetic replacement of missing teeth using ITI-SLA dental implants during five months period were included in this study. The following data was recorded for each patient: age, gender, medical history, and smoking habits. Clinical and radiographic examination was performed for each patient prior to the surgical phase of treatment to determine the bone type, site, diameter and length of the implants to be used in addition to the periodontal condition. Patient's related factors that have been investigated as risk for early implant failure include age, gender, smoking, pre-existing periodontitis, and general health, while site, diameter, length of the implants and bone type were investigated as local or implant related risk factors.

Results: During the study period, a total of 366 implants were placed in 158 patients, their mean age of 44.5 years, and females comprised of 64.5%. The majority of the patients were healthy except 18 (11.4%) were medically compromised, 27.8% were smokers, and 25.9% have periodontitis. Out of the total 366 implants, three implants failed (0.81). Smoking, medical health, and periodontitis were significant risk factors in early implant failure ($p < 0.05$). Implants placed in the maxilla and mandibular arches account for 176 (48.1%) and 190 (51.9%) respectively, with the majority being placed in the posterior sites of both jaws. The dominant bone type was III (53.55%), while the dominant implant length and diameter were 10mm and 4.1mm respectively. None of the local or implant related variables have a significant effect on early implant failure ($P > 0.05$).

Conclusion: This study established that early failure using ITI dental implant system for fixed partial prosthesis was 0.8%, and this early failure was significantly associated with smoking, medical health, and periodontitis.

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