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CLINICAL RESEARCH - SURGERY****Evaluation of the behavior of double acid-etched surface implants in patients 65 years of age and older – a 15 years retrospective study**

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**Background:** The geriatric population is increasing in number throughout the world, especially in developed and developing countries. It is believed that as a person increases their age, the biological and metabolic processes slow down. As a consequence, the organism would have less response capacity and would be more predisposed to suffer diseases. For this reason, for a long time elderly patients were considered at high risk of complications with the placement of dental implants.

**Aim/Hypothesis:** To determine the success and survival long term rate of osseointegrated dental implants with double acid etched surface in patients 65 years of age and older.

**Material and Methods:** A clinical retrospective observational study of 817 dental implants with double acid-etched surface placed in 178 patients aged 65 years and over with a follow-up of 15 years was performed. All the patients were controlled once a year both clinical and radiographically. Of the total implants, 530 (64.87%) were placed in women and 387 (35.13%) in men, 75% in patients between 65 and 74 years of age and 25% of 75 years or more+ 7.71% were smokers and 47.98% reported bruxism+ 54.1% of the implants were placed in the upper jaw and 29.9% in the upper posterior sector, 98% were external connection, 57, 9% conical shape, 27.78% of 13 mm in length and 71.60% of width of 4 mm, the most common type of surgery was 2 stages (58.8%) and 75% of implants they were placed in native bone. The most common type of load was deferred (56.62) + 82.78% was fixed screw-retained prosthesis and 26.4% of the placed implants required regeneration procedures.

**Results:** The cumulative success rate was 98.80% pre-load and 95.59% post-load. The survival of the implants at 15 years was lower in the female gender ( $P = 0.018$ ), upper jaw ( $P = 0.026$ ), upper posterior sector ( $P = 0.008$ ), soft bone (Trisi-Rao) ( $P \leq 0.001$ ), type IV bone (Lekholm-Zarb) ( $P = <0.001$ ), 2-stage surgery ( $P = 0.040$ ) and short implants ( $P = <0.001$ ). When applying the Cox regression model, bone type ( $P = <0.001$ ), maxilla ( $P = 0.042$ ) and length ( $P = <0.001$ ) proved to be independent risk variables for implant failure.

**Conclusions and Clinical Implications:** Within the limitations of this study, it was observed that the placement of double acid-etched surface implants in patients older than 64 years is a predictable technique over time since the percentage of accumulated success obtained at 15 years was 95%. Therefore, it would be a highly recommendable treatment with optimal long-term results in elderly patients.