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Molar replacement with 7 mm-wide diameter implants: to place the implant immediately or to wait 4 months after socket preservation? 1 year after loading results from a randomised controlled trial

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ABSTRACT

As the literature concerning implants inserted into fresh extraction sockets is controversial, the aim of the present randomised controlled trial was to evaluate patients with mandibular and maxillary hopeless molars, requiring an implant-supported single crown restoration, testing the hypothesis that there is no difference in clinical, radiographic and aesthetic outcomes positioning single post-extractive 7 mm-diameter implants or waiting 4 months after molar extraction and socket preservation procedure. For the purpose of the study, the enrolled patients were randomised according to a parallel group design into two arms: implant installation in fresh extraction sockets (group A) or delayed implant installation 4 months after tooth extraction (group B). In both groups, the residual alveolar socket around the implant was grafted with cortico-cancellous heterologous porcine bone, with graft particle size between 250 and 1000 μm (OsteoBiol® *Gen-Os*® Tecnoss®, Giaveno, Italy) and the socket was covered with a resorbable porcine derma membrane (OsteoBiol® *Derma*, Tecnoss®). The primary outcome measures were the success rates of the implants and prostheses and the occurrence of any surgical and prosthetic complications during the entire follow-up. Secondary outcome measures were: peri-implant marginal bone level (MBL) changes, resonance frequency analysis (ISQ) and pink aesthetic score (PES) values at implant placement (baseline) up to 1 year after loading. One year after loading, statistically significant higher mean MBL loss was experienced in group A (0.63±0.31 mm) compared to group B (0.23±0.06 mm). Six months after implant placement, mean ISQ value was 78.8±2.8 for group A and 79.9±3.6 for group B, showing no statistically significant difference between groups. One year after loading, mean PES was 10.6±1.8 in group A and 12.2±1.2 in group B.
The difference was statistically significant (1.6±2.7; 95% CI -0.55–2.55; P = 0.019) with better results for group B.

CONCLUSIONS

Though this study presented some limitations due to a limited number of participants, and the short follow-up period, the results allow the Authors to conclude that "*both procedures achieved successful results over the 1-year follow-up period, but waiting 4 months after tooth extraction and socket preservation procedure was associated with less marginal bone loss and a better aesthetic outcome*".

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