



ALVEOLAR REGENERATION

Immediate, immediate-delayed (6 weeks) and delayed (4 months) post-extractive single implants: 1-year post-loading data from a randomised controlled trial

ABSTRACT

Nowadays there are different approaches with reference to timing of implant positioning, each one having its own advantages and limits. So, it would be useful to know whether a better clinical outcome could be achieved by placing delayed implants after bone healing, or by waiting for a few weeks to allow soft tissues to heal, or by placing implants immediately after tooth extraction. The aim of this RCT was to compare the clinical outcome of single implants placed immediately after tooth extraction with implants placed 6 weeks after tooth extraction (immediate-delayed placement), and with implants placed after 4 months of extraction and socket healing (delayed placement). In total, 210 patients were treated: 70 patients received immediate post-extractive implants, 70 patients received immediate-delayed implants at 6 weeks, and 70 patients received delayed implants after 4 months of healing, according to a parallel group design. In case of a large gap between the bony wall and the neck of the implant, patients of the immediate and immediate-delayed group had the socket grafted with a bone substitute made of a sticky paste made of 600-1000 µm pre-hydrated collagenated corticocancellous granules of porcine origin, properly mixed with collagen gel in sterile syringe (OsteoBiol® mp3®, Tecnos®, Giaveno, Italy). The grafted area was then covered with a resorbable membrane derived from equine pericardium (OsteoBiol® Evolution (fine), Tecnos®). The same grafting approach was used also for the sockets randomised to delayed implants if poorly preserved or in the aesthetic areas (from second upper to second upper premolars).

Outcome measures were crown and implant failures, complications, peri-implant marginal bone level changes, aesthetics assessed using the pink aesthetic score (PES), and patient satisfaction recorded by blinded assessors. Patients were followed up to 1 year post-loading.

CONCLUSIONS

No statistically significant differences for failures, complications and patient satisfaction were observed when placing single implants immediately, 6 weeks or 4 months after tooth extraction. Failures were more frequent at immediate and immediate-delayed placed implants and bone level changes were similar between the different procedures, but aesthetics results were better at immediate and immediate-delayed implants. With reference to this last outcome, the Authors underline that *“there are two plausible explanations for the present findings, which could work synergistically: delayed sites were not subjected to any bone preservation procedures unless in aesthetic areas or if severely damaged, as is often carried out in clinical practice. It is known that site preservation procedures are better able to preserve the site dimensions than not implementing any. The immediate or early placement of the implant in a post-extractive site might also contribute to partly preserve the width and height of the surrounding tissues. In order to better understand these mechanisms, more trials with large sample sizes are needed”*.

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