

EFFICACY OF DENTAL IMPLANTS AFTER BONE REGENERATION/RECONSTRUCTION PROCEDURES IN SEVERE BONE DEFECTS. A SYSTEMATIC REVIEW OF RCTS.

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Advanced bone reconstruction has been suggested at severe horizontal and/or vertical defects before implant application. Guided Bone Regeneration (GBR) and different Bone Grafts (BG) have been described as effective techniques. Efficacy of dental implants after major bone regeneration are poorly investigated.

The aim of this Systematic Review was to evaluate the efficacy of dental implants in regenerated alveolar bone and related complications with at least 1 year of function.

A protocol was designed according PRISMA.

Twenty-nine RCTs were included for 478 patients and 1141 implants. The mean follow-up was 3,39 years. All studies were at high risk of bias.

Defects were treated with resorbable or non-resorbable membranes in association with particulate BG or block BG.

In 22 studies vertical alveolar defects were treated (207 patients, 487 implants, SR 94%, mean follow-up 3.54 years). Sub-group analysis showed an implant SR of 95.7% after autologous BG, 94.9% for xenogenic BG and 100% for GBR (autogenous plus not-resorbable membranes). Corresponding marginal bone levels were 0.81 mm±0.91 for autologous BG, 1.64 mm±1.77 after xenogenic BG and 1.40 mm±1.73 after GBR. Total number complications reported at final follow-up were very frequent for xenogenic BG (63 cases of 88).

In 7 studies horizontal alveolar defects were treated (271 patients, 654 implants, SR 96,3%, mean follow-up 3.28 years). Sub-group analysis showed SR of 98.8% after autologous BG, 94.76% after allogenic BG and 97.6%% after GBR. Marginal bone levels reported after GBR were 0.32 mm±0.82. Minor complications were often described in this subgroup

Clinical efficacy of dental implants applied in treated severe bone defects seems to be satisfactory at short-term observations with minimal reported bone loss after loading. Further studies at low risk of bias are mandatory. Bone reconstruction procedures are often associated with complications and this finding should be carefully evaluated before therapy.