

DOUBLE FULL ARCH VERSUS SINGLE ARCH, 4 IMPLANT SUPPORTED REHABILITATIONS: A RETROSPECTIVE, 5 YEAR COHORT STUDY.

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PURPOSE

To report the 5-year outcome of the All-on-4 treatment concept comparing double full-arch (G1) and single-arch (G2) groups.

MATERIALS AND METHODS

This retrospective cohort study included 110 patients (68 women and 42 men, average age of 55.5 years) with 440 NobelSpeedy groovy implants. One hundred sixty-five full-arch, fixed, immediately loaded prostheses in both jaws were followed for 5 years. G1 consisted of 55 patients with double-arch rehabilitations occluded with implant-supported fixed prostheses, and G2 consisted of 55 patients with maxillary single-arch rehabilitations or mandibular single-arch rehabilitations occluded with natural teeth or removable prostheses. The groups were matched for age (± 6 years) and gender. Primary outcome measures were cumulative prosthetic (both interim and definitive) and implant survival (Kaplan-Meier product limit estimator). Secondary outcome measures were marginal bone levels at 5 years (through periapical radiographs and using the patient as unit of analysis) and the incidence of mechanical and biological complications. Differences in survival curves (log-rank test), marginal bone level (Mann-Whitney U test), and complications (chisquare test) were compared inferentially between the two groups using the patient as unit of analysis with significance level set at $p \leq 0.05$.

RESULTS

No dropouts occurred. Prosthetic survival was 100%. Five patients lost 5 implants (G1: $n = 3$; G2: $n = 2$) before 1 year, rendering an estimated cumulative survival rate of 95.5% (G1: 94.5%; G2: 96.4%; Kaplan-Meier, $p = 0.645$, non significant). The average (SD) marginal bone level was 1.56 mm (0.89) at 5 years [G1: 1.45 mm (0.77); G2: 1.67 mm (0.99); $p = 0.414$]. The incidence rate of mechanical complications (in both interim and definitive prostheses) was 0.16 and 0.13 for G1 and G2, respectively ($p = 0.032$). The incidence rate of biological complications was 0.06 and 0.05 for G1 and G2, respectively ($p = 0.669$).

CONCLUSIONS

Based on the results, rehabilitating double or single-arch edentulous patients did not yield significant differences on survival curves. The incidence of mechanical complications was significantly higher for double-arch rehabilitated patients but nevertheless, these mechanical complications did not affect the long-term survival of either the prostheses or the implants.