Use of Extended Platelet-Rich Fibrin Membranes in Comparison to Collagen Membranes for Socket Grafting: Part 2: A Randomized Clinical Trial

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Brief Title: E-PRF vs Collagen Membranes in Ridge Preservation

Secondary IDs: None

Statistical analysis Plan for evolution Part 2 study:

The sample size was determined based on the expected mean difference in horizontal ridge width (HRW) between independent groups. A mean difference of 2.3 mm with an estimated standard deviation (SD) of 1.1 mm was used for the calculation. To detect a statistically significant difference at an α level of 0.05 with 90% power, a minimum of 11 participants per group was required. Considering an anticipated 20% dropout rate, the final target sample size was set at 14 participants per group.

All statistical analyses were conducted using GraphPad Prism version 10.0 (GraphPad Software, San Diego, CA, USA). Data were first evaluated for normality utilizing the Shapiro-Wilk test. One-way analysis of variance (ANOVA) was used to identify overall differences among the research groups. When ANOVA showed statistical significance, appropriate post hoc tests were performed. Tukey's multiple comparison test was used to compare all possible pairs of group means in the study, where no single control group was defined (i.e., membranes' fabrication and application time). In contrast, Dunnett's post hoc test was used in the analysis involving a defined control group (i.e., collagen) to specifically compare test groups with the control group while controlling for type I error across multiple comparisons. Results were expressed as mean ± standard deviation (SD), and statistical significance was set at $p < 0.05$.