

Comparison of Linear Dimensional Changes of two Heat– cure Acrylic Resins

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Abstract

Statement of problem: Although acrylic resin materials have great features for making artificial dentures, but still dimensional change is a common problem in processing them.

Purpose: The aim of this study was to compare the linear dimensional changes of two heat-cure acrylic resins.

Materials and Method: In this descriptive study, twenty specimens in two groups were made by “Acropars” and “Meliodent” acrylic resins according to the manufacturer’s recommendations in a metallic mold. Dimensional changes were measured at one, thirty and sixty weeks after processing with a digital caliper. The results were analyzed using T-test, T-paired test and repeated measure ANOVA.

Results: Considering the dimensional changes, there was a difference in the first day equal to 0.42 ± 0.28 mm, in day thirty: -0.09 ± 0.42 mm, and in day sixty: 0.07 ± 0.22 mm between the two acrylic resins, showing no statistically significant differences ($p = 0.21$). However, there were significant differences between different times of measurements ($p = 0.001$).

Conclusion: “Meliodent” acrylic resin had more dimensional stability when compared to “Acropars” resin but there was not any significant difference between the two acrylic resins in the day sixty. There were significant differences between different times of measurements; the maximum difference between these two types of acrylic resins was in first day after polymerization.

Key words: Resins, Acrylic, Methylmethacrylates, Dental Material.

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