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Effect of PMMA polymer on the dynamic viscoelasticity and plasticizer leachability of PEMA-based tissue conditioners

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Abstract:

The purpose of this study was to determine the effect of PMMA polymer on dynamic viscoelasticity and plasticizer leachability of PEMA-based tissue conditioners. One PEMA polymer and one PMMA polymer were used in powder form with four formulations. The combination of 80 wt% ATBC, 15 wt% BPBG and 5 wt% ethyl alcohol was used as the liquid phase. The dynamic viscoelasticity and plasticizer leaching of each specimen were measured after 0, 1, 3, 7, and 14 days of immersion (37°C distilled water) using DMA and HPLC. A significant difference was found among the materials in the dynamic viscoelasticity and leaching of plasticizer. The materials containing 10 wt% PMMA showed the most stable dynamic viscoelasticity, and showed the lowest leaching of plasticizer. The results suggest that the addition of the PMMA polymer to the powder of a tissue conditioner can improve the durability of the PEMA-based tissue conditioner.

Key words:

Dynamic viscoelasticity, Tissue conditioner, HPLC

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