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Effects of incorporation of Eurycoma longifolia Jack root extract on properties of heat cured acrylic resin
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Abstract

Aim: Herbal treatment has recently been validated as a safe and effective alternative to antimicrobial drugs due to its safety and efficiency. Eurycoma longifolia root jack root extract (E.L.) has been documented for its antibacterial and antifungal properties. Acrylic resin is used to produce dentures. However, due to its porous nature, it is a good site for *Candida albicans* to adhere and cause infection. The aim of the presented study was to evaluate the effects of adding E.L. root extract to acrylic resin on the properties of heat polymerized denture material. **Materials and Methods:** Sixty circular-shaped (30 mm × 2 mm) specimens were prepared from heat-polymerized acrylic resin in total. Then they were divided into one control group and two experimental groups, which were prepared by adding 0.5 gm of E.L. root extract to 10 mL monomer. Polymer powder was added to the monomer. The conventional water bath method was used for mixing, packing, and processing. Specimens were polished and finished after processing, and then maintained for 48 h in distilled water. Shore D, profilometer tester and color recognition sensor were employed to measure the surface hardness, roughness and color changes. Statistical analysis was conducted via independent sample t test. **Results:** The results indicated no significant change in roughness values concerning the study groups. Hardness results showed a higher mean value for the experimental group in compared to the control. However, the independent sample t test showed no significant change between the study groups. In color change test, no statistically significant change between experimental and control regarding red and green colors mean values whereas blue color mean values showed significant alteration and color change tests. **Conclusion:** The study concluded that E. longifolia root extract showed better surface hardness and no effect on color alteration and surface roughness after incorporation to heat cure acrylic resin, which means it can be used as a natural safe antimicrobial agent incorporated into the resin. © 2023 Wolters Kluwer Medknow Publications. All rights reserved.

Author Keywords

Acrylic Resin; Color Alteration; Eurycoma longifolia; Hardness; Roughness

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