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**Comparative study of hardness for hard chairside relining and denture base materials on repeated disinfection procedures: An in vitro study**

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**Aim:** There is hypothesis that disinfection procedures may decrease the hardness of reline and acrylic denture base resins. The aim of this in vitro study was therefore to investigate the effect of chemical and microwave disinfection procedures on hardness values of commonly used hard chairside reline (U Gel hard, Kooliner) and denture base acrylic resins (Lucitone 199).

**Materials & Method:** Powder (polymer) and liquid (monomer) were mixed according to manufacturers' instructions to prepare 20 specimens from each material. Specimens were divided into 2 control and 2 test groups. Hardness measurements (VHN Vicker's hardness number) were made after polymerization and water immersion (control groups), and after chemical and microwave disinfection (test groups). Measurements of hardness were analyzed using one-way analyses of variance (ANOVA) and Tukey's honestly significant difference (HSD) test ( $\alpha = .05$ ).

**Results:** Chemical disinfection method significantly increased ( $p = .001$ ) hardness values of Lucitone 199 (from 19.00 VHN to 21.02 VHN) and Kooliner (from 13.02 VHN to 14.02 VHN); whereas increased hardness values for U Gel hard (from 17.00 VHN to 17.16 VHN) were statistically insignificant ( $p = .642$ ). Microwave disinfection method also significantly increased ( $p = .001$ ) the hardness values of Lucitone 199 (from 19.00 VHN to 26.00 VHN), U Gel hard (17.00 VHN to 21.00 VHN) and kooliner (13.02 VHN to 14.08 VHN).

**Conclusions:** Both chemical and microwave disinfection methods increase the hardness of reline and acrylic denture base resins, contradicting previously published studies. Microwave disinfection method is more appropriate compared to chemical disinfection method.

**Biography**

Taksh N Shah is a graduate student who is working towards becoming an Epidemiologist from University of North Texas Health Science Center (UNTHSC). He is interested in the study of environmental health and exposure of VOC compounds in infants and pregnant women. With Public Health Dentistry as his future goal, he is aiming to get into dental school next year.

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