

Clinical evaluation of a resin-based desensitizing agent and self-etching adhesive on reduction of postoperative sensitivity of amalgam restorations

Hajizadeh, H. , Akbari, M. , Ghavamnasiri, M. , Abedini, S.

Department of Operative Dentistry, Mashhad Dental School and Dental Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

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Abstract

Aim: The aim of this randomized, double blind clinical trial was to compare three lining materials (Adper Prompt L-Pop, VivaSens, and Copalite) versus unlined restorations on postoperative cold sensitivity of class I amalgam restorations. **Methods and Materials:** Potential subjects were screened for the presence of four initial class I carious lesions on posterior teeth. Each tooth was assigned to treatments according to a randomized block design. After cavity preparation, teeth were lined with either VivaSens, Adper Prompt L-Pop, or Copalite, and one tooth remained unlined and served as a control. The cavities were filled with high copper amalgam (Oralloy). The time taken for a subject to respond to a standardized cold stimulus (CRM) was recorded at baseline, 15 hours, one week, and one month after treatment. Participants filled out a self-report questionnaire at each time point. Data was gathered by analysis of variance (ANOVA) and Duncan Multiple Comparisons tests ($\alpha=0.05$). **Results:** Twenty subjects participated in this study. Comparisons within each group found no significant reduction in mean CRM for the Adper Prompt L-Pop group ($P>0.05$), but a significant difference in mean CRM for the VivaSens group was observed at one week and one month intervals after restoration ($P<0.05$). Copalite and the unlined groups showed significant mean CRM reductions after one day ($P<0.05$). No significant differences between groups receiving Adper Prompt L-Pop and Copalite were found at any time point ($P>0.05$). VivaSens showed more cold sensitivity than Adper Prompt L-Pop at one week and one month recalls ($P<0.05$), while the most cold sensitivity was found in the unlined group. **Conclusion:** Adper Prompt L-Pop and Copalite reduced postoperative sensitivity to cold more than VivaSens and unlined groups at all assessment time points, 15 hours, one week, and one-month post treatment. The subjects receiving Copalite, VivaSens, and unlined restorations experienced greater sensitivity to cold at one month compared to baseline, while subjects receiving the Adper Prompt L-Pop liner experienced no greater sensitivity to cold from baseline to one month. **Clinical Significance:** Adper Prompt L-Pop as a liner under spherical high copper amalgam successfully reduced cold postoperative sensitivity.

Reaxys Database Information

Author keywords

All-in-one adhesive system; Amalgam; Cavity varnish; Randomized clinical trial; Resin-based desensitizing agent

Indexed Keywords

EMTREE drug terms: copalite; dental alloy; plant resin; Prompt L Pop; Prompt L-Pop; resin; resin cement; unclassified drug; VivaSens Liner

EMTREE medical terms: adolescent; adult; article; clinical trial; cold; controlled clinical trial; controlled study; dental surgery; dentin sensitivity; double blind procedure; human; randomized controlled trial

MeSH: Adolescent; Adult; Cold Temperature; Composite Resins; Dental Amalgam; Dental Cavity Lining; Dental Restoration, Permanent; Dentin Sensitivity; Double-Blind Method; Humans; Resin Cements; Resins, Plant; Young Adult

Medline is the source for the MeSH terms of this document.