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Citation	The 19th Annual Scientific Meeting of the International Association for Dental Research (Southeast Asia Division), Koh Samui, Thailand, 3-6 September 2004. In Journal of Dental Research, 2004, v. 83 Sp Iss B
Issued Date	2004
URL	http://hdl.handle.net/10722/53650
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Success of root surface GIC restorations after one year

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Objectives: To compare the success rates of restoring root caries lesions with glass ionomer cement (GIC) using conventional versus atraumatic restorative treatment (ART) techniques. **Methods:** This study was a randomized double-blinded clinical trial on institutionalized elders aged 60-89 years in Hong Kong. Active root surface caries lesions deeper than 1 mm were restored randomly by one of the two techniques: (1) conventional - caries removed with the aid of a dental bur under local anaesthesia and then restoring the cavity with a light-cured resin-modified GIC, and (2) ART - caries removed with hand instruments only and then restoring the cavity with a chemical-cured high-strength GIC. Status of the restorations was assessed one year after placement by a masked independent examiner using the ART and USPHS criteria. **Results:** In the first three months of the study, 50 conventional and 45 ART restorations were placed in 61 subjects. After one year, 34 conventional and 36 ART restorations were reviewed. The one-year success rates of the restorations according to the ART criteria were 89% and 87% for the conventional and the ART techniques respectively (Chi-square test, $p>0.05$). Same success rates were obtained using the USPHS criteria. The main reasons for restoration failure were similar for both techniques, being gross marginal defects and loss of restoration. There were no statistically significant differences in restoration success rates between restorations placed in anterior and posterior teeth, and between those placed on different surfaces (Chi-square test, $p>0.05$). **Conclusions:** The one-year success rates of GIC restorations placed in root surfaces using either the conventional or the ART technique were similar and both were high. Study supported by the Hong Kong Research Grants Council (HKU 7244/02M).

[Dental Materials: III - Clinical Trials](#)

[The Preliminary Program for Annual Scientific Meeting, 19th International Association for Dental Research-Southeast Asia Division and 13th Southeast Asia Association for Dental Education \(September 3-6, 2004\)](#)