



Atraumatic Restorative Treatment - ART

Case Study

Case Study: A Ten-Year evaluation of ART in Health Centers of Bauru, Brazil

Childsmile is a community based program that was instituted in 2005 by the National Health Service in Scotland in order to improve the oral health of children in Scotland and reduce the inequalities in dental health and access to dental care.¹ It emphasizes prevention and in addition to community-wide fluoride toothpaste distribution elements, targets high risk preschool children in home as well as in Nursery/School settings.

The women received ART restorative care using glass-ionomer cement, dietary counseling, oral hygiene instruction, professional prophylaxis and fluoride topical applications. Cotton rolls and suction were used for moisture control. Single surface and multiple surface ART restorations were placed; the mean number of restorations per patient was 6.4. Previous evaluations of ART programs showed successful performance for a three-year period.^{2,3}

Program Evaluation

The U.S. Public Health Service (USPHS) criteria were used to evaluate each restoration for quality.¹ Two trained dentists, not involved in placing restorations, carried out the 10 year evaluations. Intra and inter examiner reliability was calculated at 0.92 and 0.96 respectively. Hence, agreement on the evaluation criteria was very high.

Using the USPHS criteria the 10-year survival of single and multiple surface ART restorations were 86.5% and 57.6%, respectively. Total loss occurred in 9.3% of restorations and 5.4% had marginal defects of various kinds. These survival rates are similar to or superior to those achieved with amalgam restorations.^{4,5,6,7}

The program in Brazil confirms the potential of the ART restorative methods for saving decayed permanent posterior teeth. Importantly, this project also showed a mean increase in dental caries of only 2 tooth surfaces after 2 years. Hence, the caries risk of these women had been markedly reduced, which demonstrated the potential of ART as a part of a preventive therapy intervention that can reduce future disease.



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This outreach program conducted by a school of dentistry demonstrates the potential of ART for restoring and saving posterior permanent teeth in adults. The ART restorations were effective which was documented by 10-year follow-up evaluations.

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