

INTERNATIONAL SYMPOSIUM OF A TRAUMATIC RESTORATIVE TREATMENT Proceedings of the symposium held on 4-5 June 2004 at Bauru Dental School, Bauru, Sao Paulo, Brazil

SIMPÓSIO INTERNACIONAL SOBRE TRATAMENTO RESTAURADOR ATRAUMÁTICO

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Introduction – ART – The state of the art

Conservative restorative approaches such as the Atraumatic Restorative Treatment (ART) have been expanded as an option for arrest of dentinal lesions.

The Atraumatic Restorative Treatment (ART) was developed in response to the treatment need of deprived communities lacking sophisticated dental equipment or even electricity. ART was initiated in Africa at the end of the 1980, was acknowledged and recommended as an alternative treatment by the World Health Organization (WHO) in 1994 and has been spreading in the continents during the last years.

ART should not be used in isolation. It should be supported by measures that control the etiologic factor of the caries disease. These measures include educational activities and preventive procedures (diet counseling, oral hygiene instructions, plaque removal and use of remineralizing agents).

This minimal intervention technique comprises elimination of the softened decayed tissue with manual instruments and sealing of the cavity with a restorative material that presents cariostatic properties and adhesion to the tooth structure, such as the glass ionomer cements. Recent studies have corroborated the arrest of caries and remineralization of the underlying affected dentin, as well as inhibition of the levels and viability of cariogenic bacteria.

Clinical investigations conducted in children and adolescents at low risk to caries assure the good clinical performance for a three-year period in permanent teeth, with results similar to those achieved by one-surface amalgam restorations. However, because the technique was developed recently, clinical investigations at long-term are scarce and focused on one-surface cavities, which are subject to lower masticatory loads.

Since its appearance, the technique has been improved by the development of high-viscosity cements, with better mechanical properties than the conventional materials, and its indication has been expanded, not being limited to areas with no electric energy. Modified versions of the technique, with utilization of rotary instruments to enhance the access to the lesion, have demonstrated to be successful.

Utilization of ART in cavities affecting more than one surface becomes justifiable in high caries-active populations with difficult

access to the conventional dental treatment. Application of ART in multiple-surface cavities has been expanded in the deciduous dentition, with an open field of study with regard to the permanent dentition.

Since ART was predominantly used successfully in populations with low-caries experience the application of the technique should be modified for high-risk patients before the benefit of the treatment can be ascertained. Research is needed on a variation of the ART using more durable materials in high-risk patients with large carious lesions.

Brazilian investigations were pioneer in the utilization of ART in multiple-surface cavities in permanent teeth. One such study, employing the modified atraumatic treatment was conducted on low-income pregnant women in the city of Bauru. After 24 months, the clinical results were quite satisfactory, with success rates above 90% and comparable to the clinical performance observed with utilization of composite resin in the control group.

There is the need of further investigations corroborating or disagreeing with the present findings, which may validate or limit the application of this approach to more extensive restorations and/or to different populations, or even as an economically viable option in public and philanthropic services, since it is a simple, less expensive and patient-friendly method for treating caries, as an alternative to tooth extraction in deprived communities.

The simplicity of ART and the relatively low cost compared to conventional treatment are attractive advantages of this new method. The interest in using ART approach for specific projects should be emphasized, spreading this use for patients with extreme fear or anxiety, for mentally or physically handicapped patients, for elderly and pregnant patients with high caries –risk, and as a introductory oral care to very young children.

The purpose of this symposium is to discuss the advantages and limitations of ART technique as an option for caries management in areas without dental services facilities. This forum will address the results of recent longitudinal studies and update the health professionals about the properties of the dental materials employed in ART.