

THE IMPORTANCE OF ATRAUMATIC RESTORATION IN PEDIATRIC DENTISTRY: LITERATURE REVIEW

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RESUMO

A técnica de ARPD precisa ser realizada em conjunto com um programa educativo e preventivo, que forneça informações sobre cuidados gerais e bucais, compreendendo o contexto de vida de cada indivíduo. Nesse contexto, o objetivo do presente estudo foi realizar uma revisão da literatura sobre a técnica atraumática de restaurações de cárie dentária em odontopediatria associada a programas de prevenção como estratégia para o controle da cárie dentária na saúde pública brasileira. A literatura tem mostrado que a simplificação do procedimento restaurador, somada aos benefícios sociais, como aumento da cobertura e redução da perda dentária, reduziu significativamente o custo intrínseco do material recomendado. Por meio de um procedimento que independe da clínica instalada, evita-se a interrupção da cobertura da população, mesmo em caso de falha do equipamento, e permite a socialização do espaço clínico.

Palavras-chave: Tratamento Restaurador Atraumático; Saúde Bucal; dentista pediátrico

ABSTRACT

The ART technique needs to be carried out in conjunction with an educational and preventive program, which provides information on general and oral health care, understanding the context of each individual's life. In this context, the aim of the present study was to perform a literature review on the atraumatic technique of dental caries restorations in pediatric dentistry associated with prevention programs as a strategy for the control of dental caries in Brazilian public health. The literature has shown that the simplification of the restorative procedure, added to social benefits, such as increased coverage and reduced

tooth loss, significantly reduced the intrinsic cost of the recommended material. By using a procedure that does not depend on the installed clinic, the interruption of coverage of the population is avoided, even in case of equipment failure, and allows the socialization of the clinical space.

Keyword: Atraumatic Restorative Treatment; Oral Health; pediatric dentistry.

1. INTRODUCTION

Caries treatment using ART has been recognized by the World Health Organization (WHO) as a restorative dental treatment for people who do not have access to oral health care (Navarro, 2009). Much of the published research on ART has shown positive results, as a technique: effective, safe, viable, fast, low cost and high acceptance, and can be performed with a definitive restorative treatment for caries disease lesions (Louw, 2002; Imparato, 2005).

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2. LITERATURE REVIEW

The proposal of the Atraumatic Restorative Treatment arose from the need to find a method of inhibiting the carious process and preserving decayed teeth, in people of all ages, from underprivileged communities, where the only treatment then offered was extraction. ART sealants are indicated for primary teeth and permanent teeth in the following clinical situations: grooves and fissures adjacent to ART restorations and newly erupted teeth or that have deep scars and fissures in patients at high risk for caries and teeth with caries lesion restricted to enamel (Navarro, 2009).

ART emerged in the mid-eighties in West Africa as an alternative for the numerous populations unable to obtain conventional restorative care, due to lack of electricity and / or sophisticated dental equipment, such as groups of refugees and children in underdeveloped countries (Frencken, 1997). Since 1994, ART has been recommended by the World Health Organization (WHO) and the International Dental Federation (FDI) as part of oral health programs in developing countries.

Since the approval of ART by WHO, numerous clinical, laboratory and field research studies have been carried out in several countries, demonstrating the good acceptance and effectiveness of the technique. In addition, it is focused on reducing the number of bacteria and the supply of nutrients. Thus, numerous studies have been carried out in order to assess the durability of restorations. Frencken (1997) found, in Thailand, after a period of one year, that the success rate of ART in permanent dentition was 93% in restorations (Navarro, 2009).

As opposed to conventional restorative treatment, ART dispenses with the use of traditional dental equipment and electricity, facilitating the transport and packaging of instruments, minimizing the use of local anesthesia, reducing the degree of discomfort, increasing the chances of early intervention and of preservation of the affected dental structures, thus leading to greater longevity of decayed teeth (Rabello, 2006).

The low cost is one of the factors that makes this treatment a viable alternative in health promotion when compared to any conventional restorative technique. In addition, it must be understood that ART is a preventive restorative treatment, making preventive and oral health education programs necessary for the etiological factors

of caries to be truly controlled (Figueiredo, 2004).

ART restorations are indicated for teeth with carious lesions involving dentin, the cavity opening of which is at least 1.6 mm or which is sufficient for the free use of the smallest excavator, or which can be opened using the opener or enamel ax, to allow the introduction of the smallest excavator and the excavation of decayed dentin and that demonstrate the absence of pulp involvement determined by the presence of painful symptoms, abscess, fistula or mobility. ART is contraindicated in cases in which the carious lesion is not accessible with the use of manual instruments or if there is a history of painful symptoms or even the presence of a fistula, abscess or dental mobility (Navarro, 2009).

For restoration, the most used materials are glass ionomer cement, however other materials can also be used in association with the ART technique, however glass ionomer cement is the material of choice, due to its properties that are effective, such as the ability to adhere to the dental structure and for allowing its preservation; the release and the ability to be refilled with fluoride, preventing or paralyzing the progression of dental caries, the coefficient of linear thermal expansion similar to that of the dental structure and the modulus of elasticity similar to that of dentin (Navarro, 2009).

Glass ionomer cement is advantageous, too, as it has a color similar to the tooth and has biocompatibility with the dental pulp and gum. However, the glass ionomer has porosities and the mechanical strengths of the ionomers are low when compared to the strengths of dental amalgams and composite resins. Porosities can be minimized by using Centrix application tips and by pressing the material against the cavity walls by the dies or by the gloved and vaseline finger (Molina, 2013).

The main diseases that affect the oral cavity are the target of studies by the Ministry of Health (MS), through epidemiological surveys carried out at the national level. Due to its prevalence or severity, the Ministry of Health reinforces the need for oral health services to be prepared and organized to control such diseases. Among the first studies of ATR in children, we have the study by Frencken in children from communities in Thailand, where tooth decay was treated with the ATR technique, where it was found that 79% of the restorations of a face and 55% of restorations multiple faces in primary teeth after one year were considered satisfactory (Frencken, 1997).

Similarly, a study with the objective of evaluating

the permanence of atraumatic restorations in primary teeth in comparison with traditional restorations using amalgam, conducted by Taifour (2003), provided positive results after a period of three years. The sample consisted of 835 children, between 6 and 7 years old and through random distribution, 482 children were treated using the ATR and 353 children were treated with amalgam restoration. In primary molars, 476 atraumatic single-sided and 610 multi-sided restorations were performed compared to 380 and 425 amalgams, respectively.

There were no statistically significant differences in relation to the number of restorations per child, percentage of multi-faceted restorations and sex. Amalgam restorations were performed using drills and suckers. The treatment was performed by eight dental surgeons and local anesthesia was rarely used in both treated groups. After three years, a percentage of success for ATR and amalgam restorations was 86.1% and 79.6%, respectively. For multi-faceted restorations, the success rate was 48.7% for ATR and 42.9% for amalgam. The main failures in both groups were loss of restoration, followed by fracture for the ATR group and gross marginal defects for the amalgam group (Taifour, 2003).

The study concluded that after a period of three years, the ART method produced better results in the treatment of cavities in primary teeth when compared to the traditional amalgam method. Similarly, Honkala (2003) concluded in their study carried out in Kuwait that based on an evaluation after two years of atraumatic restorations performed on 35 children with an average age of 5.7 years, class I restorations obtained a high success rate. According to the WHO (1986), "health promotion is the name given to the process of training the community to act to improve their quality of life and health, including greater participation in the control over their own health". The basic requirements for health promotion were discussed at the first International Conference on Health Promotion, held in Ottawa, Canada, in November 1986.

ART, recommended by the WHO for public health, should be used by professionals from oral health teams inserted in the Family Health Program as a simple and efficient alternative for the prevention and fight against caries disease. The Family Health Program aims to meet the needs of individuals and families belonging to its area of coverage, especially with regard to health promotion and disease prevention, resulting in an improvement in the population's life. In this context, the principles of the PSF are similar to those of the ART pro-

gram, providing oral health promotion through preventive and educational measures, in addition to being used in therapeutic use (Foschetti, 2010).

According to the Ministry of Health, the ART program is considered an appropriate treatment strategy for initial carious injuries, associated with educational-preventive programs, in populations with restricted access to traditional services. It can be used in extraclinical care, including bedridden, institutionalized, school users, among others, and also be indicated, in a universal way, in vital primary teeth, with monitoring. Although the treatment is individualized, the use of ART in populations with a high prevalence of caries can be understood as a collective approach to reduce oral infection, until later scheduling at the health unit (Foschetti, 2010).

The ART program is recommended as a preventive and educational measure in various community spaces, such as day care centers, orphanages, nursing homes, institutions for the physically and / or mentally disabled. Being of fundamental importance for the control of caries disease in these environments and because it is a simple technique, it can achieve success even in patients with a low degree of cooperation. As a social measure, ART can bring hope to "homeless" children, who live in orphanages, and to elderly people living in nursing homes, that is, people who, in some way, are excluded from a bloody family environment and need attention to oral health (Imparato, 2005).

3. CONCLUSÕES

The literature has shown that the simplification of the restorative procedure, added to social benefits, such as increased coverage and reduced tooth loss, significantly reduced the intrinsic cost of the recommended material. By using a procedure that does not depend on the installed clinic, it avoids interrupting the population coverage, even in the event of equipment failure, and allows the social space to be socialized, freeing up the technological resources present at the health center for the demand more specialized services, which cannot be dispensed with.

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