Acid Foods and Soft Drinks Dental Erosive Potential: Warning Messages or Not?

Potencial Erosivo Dental de Alimentos Ácidos y Bebidas No Alcohólicas: ¿Existen Mensajes de Advertencia?

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ABSTRACT: This Communication aims to present the issue of dental erosion in another point of view. Considering the increasing rate of incidence of this dental injury among children and adults, the narrative raises the question about the danger of indiscriminate intake of certain acidic foods and beverages which are scientifically proven as one of the causes of dental erosion, as well as the complete neglect of information by the food industry about these products. The authors present some points that still remain in doubt in this topic and some approaches, which should be taken to alert the population about the relation between acidity of food and dental erosion.

KEY WORDS: tooth erosion, acidity, food Industry, eating.

INTRODUCTION

Epidemiological studies have shown that there has been an important increase of dental erosion in some populations in recent years (Nunn et al., 2003; Correr et al., 2009; Arnadottir et al., 2010; Kreulen et al., 2010). Some authors suggest that acidic foods and beverages may be responsible for the assault on dental surface and surface erosion (Barbour et al., 2011; El Aidi et al., 2011; Ligh et al., 2011). It is not possible to establish its direct cause and effect relationship because of multifactorial causes (Nunn et al.; Arnadottir et al.; El Aidi et al.; Lussi et al., 2012). However, some factors have been cited as risk factors to erosion (Barbour et al.; Bartlett et al., 2011; El Aidi et al.).

Saliva is a natural protection for dental erosion in the same way it is to dental demineralization caused by bacteria in case of dental caries. Oral environment is capable to recover its natural neutral pH after ingestion of acidic substances (Millward et al., 1997; Wang & Lussi, 2010). This mechanism needs some time for pH recovering, so it is prudent to avoid further damage, waiting about 30 minutes until teeth brushing is performed — as a way to prevent a symbiotic effect of chemical softening of dental tissues and mechanical attrition of tooth paste and dental brush (Attin et al., 2004). Additionally, a diet with a less than critical pH will cause demineralization and can jeopardize the recovery process even further. It is established in the literature there are several foods that may induce dental erosion (Ligh et al.).

A way to artificially protect teeth is high doses of fluoride (Ligh et al.). Some foods have the potential to prevent dental erosion (El Aidi et al.). Enamel protection of this injury is possible and some studies indicate that high fluoride doses can prevent erosion of the tooth’s crown but the same does not occur with two other tooth tissues: cement and dentin (Schlueter et al., 2009).
Studies performed to evaluate erosion disagree in their results mainly because there is not only a widely accepted way to access this clinical problem and therefore this direct relation cannot be stated even for clinical evaluation of large populations (Donachie & Walls, 1996; Young et al., 2008; Ganss et al., 2011; Margaritis et al., 2011; Wiegand & Attin, 2011).

Dentistry is a science in evolution and great efforts have been made for replacement of dental tissues lost by caries, fractures or erosion, this substitution is not perfect, has a limited lifetime and it can be expensive, mainly in cases where this loss occurred in large extents, as frequently occurs in cases of severe erosion and tooth wear (Gulamali et al., 2011; Hamburguer et al., 2011; Katsoulis et al., 2011).

It has been suggested that in some countries the ingestion of drinks with low pH has been increasing (Coppinger et al., 2011; Gambon et al., 2011; Okunseri et al., 2011; Duffey et al., 2012). The food industry is trying to modify and improve products in a way to cause less injury to dental tissues, but addition of substances to elevate the pH of some food and drink can modify the original taste, stability or may cause lifetime reduction, jeopardizing this process. Meanwhile, it is important to report that many other factors can enhance the erosive process, like stomach problems, bulimia nervosa and parafunction (Barbour; Bartlett; Barbour et al.; Bartlett et al.; El Aidi et al.; Ligh et al.).

Elderly individuals tend to have tooth wear losses (Burke & McKenna, 2011). In modern lifestyle where fast food and soft drinks are frequently consumed, in the worst case, many of these individuals nowadays have an almost exclusive, frequent or excessive ingestion of this type of food, without any prevention and their teeth will probably be easily damaged.

The remaining question is: if these products can cause dental damage, it is not necessary for the food industry to alert its consumers about possible risks of consuming these products in excess?

The industrial problem. The argument that naturally acidic foods can cause dental damage is used by the food industry as a way to defend its interests in not disclaiming the products.

Tracing a parallel discussion, some countries made mandatory the print on some product's labels that processed cow’s milk cannot be the only source of dairy nutrition. However, many people are still consuming raw unlabeled cow’s milk. This fact does not change the industry’s obligation to alert the population about the cited risk.

Another example occurs in the cigarette labeling process with tobacco warning messages, (ICAP, 2008; Hammond, 2011) where, despite many people in rural zones continue to smoke hand-made cigarettes, there are no warning labels. Nowadays, it is not permitted to link sports and cigarettes; regardless this was not forbidden in a recent past. Television campaigns about tobacco products in some countries are still permitted, but messages about its side effects always appear at the end of advertisements.

Well established politics exists to alert about excesses in alcohol intake. It passes by community evaluation (ICAP). Another very interesting example happened in the United Kingdom where: “Consultation on options for improving information on the labels of alcoholic drinks to support consumers to make healthier choices in the UK” in May 2010 and the respective establishment of politics in 2011. Some incipient efforts are relative to food and beverages, but it still does not address consumer information on the product label, neither does it alert about dental erosion risks (Alexander et al., 2011). On the other hand, the media does not inform clearly about the risks of beverages (Bonfiglioli et al., 2011). Dental associations are starting campaigns against soft drinks but they are not massive. Therefore, if acidic foods and soft drinks are not as innocuous as they seem, why not alert people about the possible side effects of consuming excess industrialized acidic food or beverages with warning messages on the label? The answer falls on the problem of controversial topics in healthcare. To solve it, science must improve its survey methods regarding dental erosion and find a way of asking the right questions in order to receive the best answers, in an Evidence Based Practice approach in this controversial field.
camente como una de las causas de la erosión dental, como asimismo, una completa falta de información por parte la industria alimentaria sobre estos productos. Se presentan algunos puntos que aún quedan en duda referente a este tema y algunos enfoques que se deben tomar para alertar a la población acerca de la relación entre la acidez de los alimentos y la erosión dental.

PALABRAS CLAVE: erosión dental, acidez, industria de alimentos, comer.

REFERENCES


