Study shows toothpastes do not protect fully against erosion and hypersensitivity

By DTI

WASHINGTON, US: Over the years, more and more toothpastes have been released on to the market claiming to aid with one thing or another—with a particular focus on dentine hypersensitivity and dental erosion. However, in a new study, researchers have shown that, out of nine analysed toothpastes, none were capable of mitigating enamel surface loss, a key factor in tooth erosion and dentine hypersensitivity.

To simulate the effect on tooth enamel of brushing once a day with exposure to an acid solution for five consecutive days, the study used human premolars donated for scientific research purposes, artificial saliva and an automatic brushing machine. The physical analysis consisted of weighing the abrasive particles contained in the toothpastes, measuring their size and testing the ease with which the toothpaste mixed with artificial saliva could be spread on the tooth surface.

According to the results, all of the analysed toothpastes caused progressive tooth surface loss in the five-day period. “None of them was better than the others. Indication will depend on each case. The test showed that some [toothpastes] caused less surface loss than others, but they all resembled the control toothpaste [for] this criterion. Statistically, they were all similar, although numerically there were differences,” said lead author of the study Dr Samira Helena João-Souza, a PhD student at the Department of Restorative Dentistry at the University of São Paulo’s School of Dentistry in Brazil.

Conducted at the University of Bern in Switzerland with the participation of a researcher supported by a scholarship from the São Paulo Research Foundation, the researchers tested eight toothpastes claiming to be anti-erosive and/or desensitising and one control toothpaste, all of which are available from pharmacies in Brazil and Europe.

“We're now working on other studies relating to dentine in order to think about possibilities, given that none of these toothpastes was found capable of preventing dental erosion or dentine hypersensitivity, which is a cause of concern,” said Aranha.

The study “Chemical and physical factors of desensitizing and/or anti-erosive toothpastes associated with lower erosive tooth wear” was published on 20 December 2017 in the Scientific Reports journal.

Wine polyphenols may prevent caries and periodontal disease

By DTI

BERN, Switzerland: Over the years, more and more toothpastes have been released on to the market claiming to aid with one thing or another—with a particular focus on dentine hypersensitivity and dental erosion. However, in a new study, researchers have shown that, out of nine analysed toothpastes, none were capable of mitigating enamel surface loss, a key factor in tooth erosion and dentine hypersensitivity.

More than 400 million people in the world suffer from caries. The bacteria in the mouth have been identified as a cause of the disease. The new study suggests that wine polyphenols might also be good for oral health by preventing the adhesion of bacteria that could cause periodontitis and other diseases.

Conventionally, some health benefits of polyphenols have been attributed to these compounds being antioxidants, meaning they likely protect the body from harm caused by free radicals. However, recent research indicates that polyphenols might also promote health by actively interacting with bacteria in the gut. Study author Dr M. Victoria Moreno-Arribas, Director of the Instituto de Investigación en Ciencias de la Alimentación, Madrid, Spain, and her colleagues aimed to investigate whether wine and grape polyphenols would also protect teeth and gingivae, and how this could work on a molecular level.

The Spanish researchers studied the effect of two red wine polyphenols, as well as commercially available grape seed and red wine extracts, on Porphyromonas gingivalis, Fusobacterium nucleatum and Streptococcus mutans bacteria, which are associated with dental caries and periodontal disease. Working with cells that model gingival tissue, they found that the two wine polyphenols—caffeic and p-coumaric acids—in isolation were generally better than the total wine extracts at reducing the bacteria’s ability to adhere to the cells.

When combined with Streptococcus dentisani, which is believed to be an oral probiotic, the polyphenols had an even better anti-adhesive capacity. The researchers also showed that metabolites formed when digestion of the polyphenols begins in the mouth might be responsible for some of these effects.

The study, titled “Inhibition of oral pathogens adhesion to human gingival fibroblasts by wine polyphenols alone and in combination with an oral probiotic,” was published online in the Journal of Agricultural and Food Chemistry on 21 February.
ADIA and BDIA to sign agreement and strengthen ties

By DTI

SYDNEY, Australia: Seeking to strengthen existing ties, the Australian Dental Industry Association (ADIA) and the British Dental Industry Association (BDIA) have signed a cooperative agreement in March. Formalising their informal working relationship of more than 50 years, the new agreement is intended to aid in mutual interests through the sharing of information, working with regulatory offices and promoting their respective members’ products overseas.

“The dental industry in Australia and Britain jointly understand the importance of the role that industry has in supporting dental professionals to deliver optimal oral health. This is achieved through the investment by dental product manufacturers in new and innovative treatment options and in this area there is so much that the ADIA and BDIA memberships can learn from each other,” said ADIA CEO Troy Williams.

ADIA and the BDIA share the policy objective of achieving convergence of the regulations for the market approval of medical devices. According to ADIA, given that in Australia and in Britain the regulatory framework for the approval of medical devices is based upon that of the European Union, the two organisations will benefit owing to a broad understanding and different perspectives on the same regulatory approach.

“In the context of Brexit it’s likely that, in many respects, Britain’s dental product regulatory framework may eventually look increasingly like that of Australia. We expect that in the coming years, just like in Australia, the regulations will be based heavily upon those of Europe but with some opportunities for important changes that reflect local conditions,” said BDIA Chief Executive Edmund Proffitt.

As part of their collaborative work, both organisations will be hosting national pavilions at key international dental trade shows, such as the International Dental Show in Cologne in Germany and the International Dental Exhibition and Meeting in Singapore. The agreement was signed at ADX18 Sydney, Australia’s premier dental event and the nation’s largest healthcare trade show.

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