Hypertension related to poor oral hygiene

By DTI

SEOUL, South Korea: High blood pressure, or hypertension, is a common but dangerous condition. Untreated, it can lead to stroke, damage to the heart and arteries, and kidney defects. A recent South Korean study has suggested that the likelihood of developing hypertension may be linked to poor oral hygiene habits.

In the study, the researchers analysed clinical data from 33,960 participants, collected between 2008 and 2010 for the Korea National Health and Nutrition Examination Survey. High blood pressure was determined by use of antihypertensive medication or an average blood pressure greater than 140/90 mmHg. According to these criteria, hypertension was diagnosed in 5,921 persons.

In addition, oral hygiene habits were evaluated by daily frequency of toothbrushing, as well as the use of oral health products, such as dental floss, mouthwash, interdental brushes and electric toothbrushes.

The analyses showed that frequent toothbrushing could be associated with a decreased prevalence of hypertension in individuals with and without periodontitis. Generally, participants with poor oral hygiene habits were found to have higher hypertension frequency.

According to the researchers, this suggests that periodontitis and hypertension may be linked in that inflammation may lead to blood pressure elevation, which would allow for the conclusion that oral hygiene may be considered an independent risk factor for hypertension.

Hence, maintaining good oral health habits may prevent and control the condition.

"Although this subject may require further study, the association between hypertension and periodontitis is reminiscent of the link periodontal disease shares with other systemic conditions, including diabetes and heart disease," remarked Dr Joan Otomo-Corgel, President of the American Academy of Periodontology, on the research findings.

The study, titled “Associations among oral hygiene behavior and hypertension prevalence and control”, was published in the July issue of the Journal of Periodontology.

Potential biomarkers for dental caries found

By DTI

ODENSE, Denmark/VALENCIA, Spain: In order to determine potential biomarkers for dental caries, an international team of researchers has taken a closer look at the human oral metaproteome, the most prevalent proteins found in oral biofilm. Their findings might enable scientists to develop a diagnostic caries test.

The researchers from the Department of Biochemistry and Molecular Biology at the University of Southern Denmark in Odense and from the FISABIO Foundation in Valencia aimed to determine a minimum set of proteins that allow for discrimination between healthy and caries-affected dental plaque samples. They identified 7,771 bacterial and 819 human proteins in 77 individuals.

The study’s metaproteomic analyses of the oral biofilm provided the first protein repertoire of human dental plaque; the researchers stated. Moreover, by using different mass spectrometry approaches, they were subsequently able to quantify individual peptides in healthy and caries-bearing individuals.

Their findings showed that healthy individuals appeared to have significantly higher amounts of enzymes associated with a high acid tolerance.

Other proteins found to be at significantly higher levels in caries-free individuals were involved in exopolysaccharide synthesis, iron metabolism and immune response.

By interpreting the potential biomarkers collectively, the scientists were able to determine the oral health status of the individuals studied with an estimated specificity of over 96 per cent.

Although validation of the findings in larger sample size studies is necessary, the findings could be of use for developing future caries risk screenings, the researchers concluded.

The results of the study were published online ahead of print on 12 August in the PROTEOMICs journal in an article titled "The human oral metaproteome reveals potential biomarkers for caries disease".
Coconut oil pulling reduces gingivitis

By DTI

KANNUR, India: A recent study has shown that oil pulling using coconut oil could be an effective method to reduce plaque formation and plaque-induced gingivitis. Coconut oil is an easily usable and safe substance with minimal side-effects and could thus become an alternative to conventional oral antimicrobial agents such as chlorhexidine, the findings suggested.

The pilot study included 60 adolescents aged 16–18 with plaque-induced gingivitis, half of whom performed coconut oil pulling in addition to their oral hygiene routine over the course of 5 days, while the remainder served as a control group. The researchers observed a steady reduction in both plaque and gingival index values already after one week of therapy. In addition, they noted a 50 per cent decrease in these values in four weeks, which is comparable to the decrease produced by chlorhexidine.

A number of studies have shown that oil pulling or swallowing reduces gingivitis. In 2007, for example, oil pulling with sunflower oil was found to reduce plaque and gingival indices after 45 days. However, the current study is the first to investigate the benefits of coconut oil in this respect.

To date, the mechanism by which oil pulling works is not fully understood. According to the researchers, its plaque-decreasing effect could be attributed to mechanical shear forces that can reduce adherence of plaque. Another possible explanation is the composition of coconut oil: it contains 92 per cent saturated acids, approximately 50 per cent of which is lauric acid, which has proven anti-inflammatory and antimicrobial effects.

Study recommends disinfecting toothbrushes regularly

By DTI

DAVARGERE, India: Toothbrushes are prone to contamination by microorganisms originating not only from the oral cavity but also from the surroundings in which they are stored. Indian researchers have now investigated how different dental disinfectants affect bacterial colonisation.

In order to investigate the impact of disinfectants such as chlorhexidine gluconate, sodium hypochlorite, and potassium iodine on the presence of streptococcal microorganisms, the toothbrushes of 21 children aged 5–12 were evaluated after five consecutive days of twice daily toothbrushing.

Following the five-day trial, the brushes were incubated in Robertson’s cooked-meat broth again after 24 hours, all of the brushes were placed in Robertson’s cooked-meat broth again after 24 hours, and then cultured.

The final analyses showed that treatment with chlorhexidine resulted in a 100 per cent reduction of streptococci colonies, while sodium hypochlorite, and potassium iodine only reduced the macroorganisms by 71 per cent. In contrast, the toothbrushes regularly

By DTI

The results indicate that both chlorhexidine and sodium hypochlorite are effective disinfecting agents. According to the researchers, the significant increase in contamination of the toothbrushes in Group 3 suggests that rinsing one’s toothbrush only in water and air-drying could lead to toothbrush contamination.

In light of the findings, the researchers concluded that it is essential for every individual to disinfect his or her brush at regular intervals, as well as to prevent reinfection and help maintain good oral hygiene and general wellbeing. Since the present approach did not consider all the various microorganisms present in the oral cavity, future research should focus on the survival of other microorganisms, such as other bacteria, fungi and viruses, the scientists stressed. Moreover, they noted that other antimicrobial solutions such as products of the neem plant or salt, other antimicrobial solutions, could potentially be economical, non-toxic and easy to use against alternative substances in their disinfectant properties.

Contaminated toothbrushes are associated with various oral health problems, including dental caries, gingivitis and stomatitis. Health organisations such as the America Dental Association, recommend changing toothbrushes every two to three months.