Better dental hygiene to lower hospital infections

A study by the Tel Aviv University in Israel has found that brushing teeth can prevent hospital-borne infections by up to 50 per cent. According to lead researcher, Ofra Raanan, from the University's Department of Nursing, nurses from different medical centres in the country found that brushing the teeth of intubated patients three times a day led to a decrease in ventilator-associated pneumonia (VAP), a lung infection that develops in people who are ventilated.

Hospital-borne infections such as VAP are a serious risk of a long-term hospital stay. VAP is usually caused by harmless bacteria in the mouth that travel in small water droplets through the tube and gain access to the lungs where they colonise. Once in the lungs, the bacteria exploit the patient’s weakened immune system and multiply, causing serious infections that could result in death. Patients who are intubated can be infected with pneumonia only two or three days after the tube is put in place.

Nurses typically use a mechanical suction device to remove secretions from the mouth and throat, or put patients in a seated position every few hours. Raanan said that her recommendations—scheduled for publication in a leading nursing journal—may convince medical centres around the world to invest more resources in the routine practice of brushing their patients’ teeth. “This approach will certainly improve the odds for survival,” she asserted.

 Millions to fight early childhood caries

Corinna Kaarlela

SAN FRANCISCO, CA, USA: The University of California’s School of Dentistry in San Francisco has received a multimillion-dollar grant from the US National Institutes of Health (NIH), to address disparities in children’s oral health and to launch new programmes in preventing early childhood tooth decay, also called ECC. According to the School’s Dean, Dr John Featherstone, the programmes will include new research that will compare methods of preventing dental caries in children and efforts to integrate current scientific understanding across a variety of primary care and social service settings.

The School will also work as coordinating centre, collecting data from randomised trials from two other centres in Boston and Denver.

Dental caries is one of the most prevalent health problems in the United States, and disparities in oral health are evident across the life span. A report by the US National Maternal and Child Oral Health Resource Center states that although more than 90 percent of general dentists in the US provide care to children and adolescents, very few provide care to children under four. Among children and adolescents from families with low incomes, nearly 80 percent of decayed primary teeth have not been restored in children between the ages of two and five.

Disparities also exist according to race and ethnicity, with decayed or filled teeth occurring in 42 percent of Mexican American and 52 percent of black children between the ages of two and five, compared with 24 percent of white children, according to a National Health and Nutrition Examination Survey from the Center for Disease Control in Atlanta, Georgia.

(Edited by Claudia Salwiczek)
In collaboration with Inspektor Research Systems BV in the Netherlands, scientists at the University of Liverpool have developed a new product for identifying plaque build-up in the mouth before it becomes visible to the human eye. The toothbrush-sized device has a blue light at its tip that allows plaque to be easily seen as a red glow when shone around the mouth and viewed through yellow glasses with a red filter.

Dentists currently use disclosing agents in tablet form to indicate tooth decay and plaque, but these often stain the mouth and taste unpleasant. The new product, known as Inspektor TC, has been designed for everyday use in the home and will be particularly useful for those who are vulnerable to dental diseases, especially children and the elderly.

“Early stage plaque is invisible, and so this device will show people the parts of the mouth that they are neglecting when they brush their teeth, enabling them to remove plaque before it becomes a problem,” said Prof. Sue Higham, Director of Research at the University of Liverpool’s School of Dental Sciences. “Inspektor TC is designed so that people can easily incorporate it into their daily dental hygiene routine.”

Her team has already received a Medical Futures Innovation Award that acknowledges significant innovation in science for the product. “We now hope to work with industry partners to develop this prototype, so that people can use it in the home to identify plaque before any serious dental work is needed,” Prof. Higham added.

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Gas effects boosted by hypnosis

The pain-relieving effects of nitrous oxide — laughing gas — may be enhanced by suggestion or hypnosis, according to a new study by University College London (UCL). The study, published online in the journal *Psychopharmacology*, found that the nitrous oxide boosted imaginative suggestibility by approximately 10 percent, despite participants’ expectations regarding the effects of the drug. The findings indicate that dental patients may benefit from being coached to relax while undergoing sedation.

“Nitrous oxide is one of the most widely used yet least well understood anaesthetic gases and until recently, relatively little was known about how it worked inside the body,” Dr Matthew Whalley, Honorary Research Fellow at UCL, stated. “Many dentists use laughing gas to relieve discomfort in their patients, but our study suggests that combining the gas with instructions and suggestions to help them to relax and become absorbed in imagery, for example, might enhance the pain-relieving effect.”

Dr Whalley said that an estimated number of 500 dentists in the UK have been trained to use hypnosis, and find that their patients respond well to being spoken to in a quiet, hypnotic manner. The new findings suggest that these effects could be further enhanced with laughing gas, he added.

Photographs courtesy of Dr. Sushil Koirala
The GC Corporation based in Tokyo in Japan has signed a cooperative agreement with US DuPont to develop new filling materials for the dental market. With the agreement, the two companies will share knowledge in the fields of monomers and composites for improved abrasion resistance with no risk of shrinkage and enhanced aesthetics with chameleon-like effects.

DuPont is one of the largest manufacturers of synthetic materials globally. Among others, the company has created widely used polymer compounds like Nylon, Lycra, Teflon, and Kevlar. GC Corporation has some of the most advanced composite systems on the market, such as GC Grandia and GC Grandia Direct. By collaborating with DuPont, the company wishes to increase development possibilities for new dental composite systems and refine existing ones, officials told Dental Tribune.

“The cooperative agreement with DuPont is a strategic and historic milestone for our company and will definitely have synergistic effects for all concerned—not just for the cooperating partners themselves, but also for dentists and dental technicians,” explained Shoji Akahane, director of the research and development department of GC. “We don’t want to give too much away, but standing shoulder-to-shoulder with DuPont, we are sure GC will soon be causing quite a stir on the filling market. You could say we now have the license for effective marginal adaptation.”

China’s dental implant market grows

According to a report by the Millennium Research Group in Toronto in Canada, new private dental clinics are continuing to emerge in response to increasing demand for dental care from China’s growing middle class and aging population. The establishment of these private dental clinics will enable the dental implant market to reach over US$125 million by 2013, reflecting a compound annual growth rate of more than 20 per cent over the five years.

Dental services in China are offered in government-managed hospitals that deal with an overwhelming number of cases. With new private dental clinics now opening and a growing number of dentists offering dental implant treatment, however, Chinese patients will have increased access to dental implants. Currently, there are more than 5,000 private dentists running clinics operating across China and the success of the dental implant industry will continue to attract both domestic and foreign investment. In addition to the development of new dental facilities, increasing volumes of procedures performed by existing facilities will enable market growth over the next five years.

“The global economic crisis will slow this market in 2009, but only moderately,” says Kevin Flewwelling, Manager of Orthopedic and Dental Research at MRG. “Due to improved clinical coverage of key industry competitors, the Chinese dental implant market will still grow at double-digit rates even at the height of the worldwide economic crisis.”

The China Medicine Corporation in Guangzhou has reported governmental approval for selling dental equipment and instruments in China’s Guangdong province.

Prowhiten, a new Australian company, plans to establish whitening kiosks in shopping malls in the country. The procedure will take up to 20 minutes and cost a little over US$100, company officials stated.

Colgate, through its Colgate-Palmolive (India) Ltd subsidiary, has purchased SS Oral Hygiene Products Pvt. Ltd. in Hyderabad in India. Previously, Colgate held a 75 per cent share in SS Oral Hygiene Products.

A new recruitment agency in Derry in Northern Ireland aiming to attract experienced dentists from across the globe has been established. KMS Dental Recruitment is the first of its kind in the country, which suffers from an ongoing shortage of dentists, particularly in the north-west region. Previous recruitment drives by local health authorities have failed to attract dentists, with many local practices last year closing their doors to patients treated under the National Health Service scheme, DTU UK reports.