DHS gathers over 270 dental professionals from MEA region during Dubai Dental Week

By Dental Tribune MEA / CAPPmea

DUBAI, UAE: Dental Hygienist Seminar was organized as a new partnership between CAPP and Colgate Oral Care Academy on 05 November 2016 at Jumeirah Beach Hotel in Dubai. The event was organized as part of the 8th Dental Facial Cosmetic Intl Conference on 04-05 November 2016 under the constantly expanding umbrella ‘Dubai Dental Week’- November edition which gathered over 2,500 dental professionals from around the world.

DUBAI Dental Week – November edition incorporated several continuing dental education events organized by CAPP. Over 15 multidisciplinary hands-on courses, 2-day Conference & Exhibition and the Dental Hygienist Seminar all took place between 01-07 November 2016 at Jumeirah Beach Hotel with over 49 CME attainable from local health authorities as well as ADA CERP CE credits as CAPP is an ADA CERP Recognized Provider of continuing education. During 04-05 November 2016, the Jumeirah Beach Hotel in Dubai was enlightened by the positive energy of the dental experts who came here, for brightening and modernizing their independent dental practices during the two days of conference and exhibition. Its stunning and inspiring structure was the main location where professionalism meets quality in a spectacular way.

Colgate was the title sponsor of the Dental Hygienist Seminar which took place on 05 November 2016 and will be remembered as remarkable for all dental hygienists from MEA region, Pakistan, India and several other countries who were treated to a lineup of interesting lectures. The event was organized as a joint partnership between CAPP and Colgate Oral Care Academy with the support of the International Federation for Dental Hygienists (IFDH). It was designed to increase the level of enlightenment of all passionate dental professionals. Dental virtuosos from around the world featured throughout the day including:

- Mrs. Robyn Watson, IFDH, Australia (President of the International Federation of Dental Hygienists)
- Dr. George Sanoop, UAE (Dental Faculty Higher Colleges of Technology, Dubai & Sharjah Women’s College)
isms may increase their virulence exchange” among the microorganisms living nearby in a neighborhood setting. This “friendly exchange” among the microorganisms may increase their virulence level and antibiotic resistance in multiple folds compared to them existing separately in planktonic state. Thus, mechanical removal is still the mainstay of treatment for biofilm-initiated conditions like caries, gingivitis and periodontitis.

Dental plaque represents a true biofilm, and its existence can easily be revealed to the patients using disclosing agents (Figure 1). Its potential to calcify to form calculus increases the difficulty for removal and makes it all the more important to eradicate it in a timely or prophylactic manner. Conventional removal of sub-gingival plaque includes the use of ultrasonic scalers or hand instrumentation, while rubber cups with prophylaxis polishing agents can be used to remove supra-gingival plaque. The types of abrasive particles incorporated in the polishing pastes include pumice, aluminum oxide, silicon carbide, garnet, feldspar, zirconium silicate, emery, perlite etc. These conventional treatment modalities have been shown to be effective in plaque removal and restoring patients back to gingival health. However, there have been concerns regarding extensive tooth hard-substance loss and patient comfort and experience during treatment which may affect patient compliance to proceed with the maintenance phase after initial periodontal therapy. Thus, extensive research and technological innovations have been carried out in recent years to come out with a more novel approach for biofilm removal.
The risks that carbonated soft drinks, alcoholic mixers and wine pose to your patients’ teeth are well-known – increased consumption of acidic food and drinks can lead to tooth erosion and hypersensitivity.

However, even your patients following a healthy lifestyle may be at risk due to the acidic nature of fruit juices and sports drinks. Hypersensitivity results when the tiny dentine channels directly linking to nerves in the tooth become exposed and is associated with pain and discomfort triggered by heat, cold or touch.

Addressing hypersensitivity is crucial for providing relief to your patients.

**COLGATE® SENSITIVE PRO-RELIEF™ TOOTHPASTE TARGETS HYPERSENSITIVITY FOR FAST PAIN RELIEF**

The Pro-Argin™ Technology of Colgate® Sensitive Pro-Relief™ toothpaste physically seals dentine tubules with a plug that contains arginine, calcium carbonate and phosphate. The plug effectively reduces dentine fluid flow reducing sensitivity and relieving pain in seconds.*2,3

**COLGATE® SENSITIVE PRO-RELIEF™ IS CLINICALLY PROVEN TO RELIEVE PAIN IN SECONDS**

In a double-blind, parallel group study, 120 patients directly applied either Colgate® Sensitive Pro-Relief™ toothpaste, a regular desensitising toothpaste† or a regular toothpaste‡ to sensitive teeth. Change in hypersensitivity was assessed using air blast sensitivity scores, where a lower score indicates better pain relief.

Not only did Colgate® Sensitive Pro-Relief™ provide instant relief of dentine hypersensitivity, both immediately after direct application and after 3 days of use, but it also provided superior pain relief when compared with the other toothpastes.

**INSTANT AIR BLAST SENSITIVITY RELIEF IN VIVO**

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<th>Sensitivity relief</th>
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* p < 0.05 compared to baseline
• p < 0.05 compared to control

In a double-blind, parallel group study, 120 patients directly applied either Colgate® Sensitive Pro-Relief™ toothpaste, a regular desensitising toothpaste† or a

Recommend Colgate® Sensitive Pro-Relief™ to your patients suffering from hypersensitivity due to acidic tooth erosion – clinically proven to treat hypersensitivity and relieve pain fast.*2

* When toothpaste is directly applied to each sensitive tooth for 60 seconds.
† Containing 5% potassium nitrate and 1450 ppm fluoride as sodium fluoride.
‡ Containing 1450 ppm fluoride as MFP.

References:
Air Polishing Devices: Basic Principles

The basic concept for air polishing is nothing new. In fact, it was first introduced in the dental market in 1945 for cavity preparation using aluminum particles [1]. Modern air polishing devices use pressurized air and water to deliver a controlled stream of powder in a slurry through a handpiece nozzle. There are usually 2 concentric openings, with the air and powder through the inner one and water through the outer one [2] (Figure 2). This is directed towards the tooth surface to remove surface stains, dental plaque and other soft deposits.

The ability of the combination of air, water and powder to remove substrates on the treated surface is dependent on several factors and we can broadly classify them under hydropneumatic factors, abrasive media related factors and user-related factors [3].

Hydropneumatic factors:
- Air pressure
- Abrasive media related factors:
  - A) Powder removal
  - B) Grain size
  - C) Grain shape
  - D) Grain hardness
- User-related factor

A) Distance between nozzle and treated surface
B) Angulation of nozzle
C) Instrumentation time

To explain briefly, for example, the higher the air pressure, the higher for substance removal Large [4] has pointed that the unangled edges and higher molar hardness may also require a higher abrasive hardness.

The tables below (Table 1-2) illustrate the molar hardness values of various materials used for polishing, and how they vary when compared with the hardness of tooth structures as well as with the hardness of treated materials. Conventional material used as polishing media such as pumice, silicon carbide or aluminum oxide all have a higher molar hardness value compared to tooth structures and restorative materials. Prolonged usage can result in irreversible and atomic agglutination of enamel, dentin and composite resins. In addition, restorative materials can be intermixed and roughened, and this can cause them to be more prone to wear in the long run.

Sodium bicarbonate powder (e.g. EMS ClassicPowder) has been used in the dental market since the 1980s. It is non-toxic and water soluble, although up to 8% of silicon oxide or tricalcium phosphate is usually incorporated to enhance hydrophilicity, an important characteristic to sustain powder flow when mixed with water. It is commonly used for removal of supragingival stains and plaque from intact enamel surface because it is safe and effective when used clinically for the significant surface alternations. Sodium bicarbonate media has been shown to be effective when air polishing using sodium bicarbonate takes only three times the time required for supragingival stain and plaque removal compared with hand instruments or rubber cups with polishing paste [6]. However, sodium bicarbonate powder should not be used for subgingival plaque removal. Experimental results have demonstrated substantial root surface loss when it is directed towards denuded root surface [7]. In addition, it has also been documented to cause severe epithelial erosion when it is directed towards the soft tissues [8]. Thus, usage of sodium bicarbonate for subgingival plaque removal should always be avoided.

Glycine powder (e.g EMS Perio Pow-
PATIENT SENSITIVITY CAN BE GONE IN SECONDS.

COLGATE® SENSITIVE PRO-RELIEF™ WITH PRO-ARGIN™ TECHNOLOGY PROVIDES INSTANT AND LONG-LASTING RELIEF.

Extensive scientific research has shown that Colgate® Sensitive Pro-Relief™ protects against the triggers and causes of sensitivity, and is proven to occlude dentin tubules in 60 seconds.*

Finally, a way to quickly improve your patients' satisfaction and comfort.

The Relationship between Periodontitis and Atherosclerosis and Diabetes

By Sunstar GUM

Heart attack is the leading cause and diabetes is the sixth-leading cause of death in the United States. What goes relatively unnoticed, however, are their respective relationships with oral health, especially periodontal bacteria that breed inflammation. This Sunstar E-Brief explores the cell-to-cell interactions behind the inflammation process and features insight from an expert on the subject.

In exploring how periodontal bacteria trigger inflammation in tissues far removed from the oral cavity, oral health professionals need to understand several underlying concepts and the direct role they play in periodontal diseases. Jepsen, DDS, MD, MS, PhD, a professor and chairman of the Department of Periodontology, Operative, and Preventive Dentistry at the University Hospital of Bonn in Bonn, Germany says three things are most important to understanding cell-to-cell communication relative to this oral systemic link.

First, periodontal bacteria are disseminated into the body’s circulatory system. “Especially in cases of advanced periodontitis,” Jepsen notes, “periodontal bacteria are dis- seminated into the body’s circulatory system. First, periodontal bacteria are disseminated into the body’s circulatory system. ‘Especially in cases of advanced periodontitis,’ Jepsen notes, ‘periodontal bacteria are disseminated into the body’s circulatory system.’ The second key component of this cell-to-cell communication, according to Jepsen, is that systemic inflammation can promote atherosclerosis.

‘Systemic inflammation can also lead to impaired blood sugar control,’ Jepsen says, ‘which may have negative effects on the periodontal tissues.’ And, the third consideration concerns the effects of oral health professionals’ work. ‘Oral health professionals should be aware that periodontal therapy may positively impact these conditions,’ Jepsen points out.

Inflammation and Arteries

In periodontitis, the inflammatory response is caused by the spread of microbes. These microbes can trigger a similar inflammatory response in arterial tissues that sets the stage for the hardening of the arteries, or atherosclerosis, which can lead to heart attack. Additionally, fatty streaks are caused by white blood cells that travel into blood vessel walls and become macrophages. Macrophages assist in the uptake of low-density lipoprotein (LDL) cholesterol or ‘bad cholesterol.’ The absorption of LDL, cholesterol, facilitated by periodontal bacteria, creates foam cells that eventually die and form a dead core within the fatty deposits. Other immune cells are added to the deposits, which causes the artery to narrow further. This process gradually robs heart tissues of vital nutrients and oxygen.

The substances created by periodontal bacteria can harm the underlying connective tissue within the arteries. The vascular deposits eventually break up and leave a wound that allows blood to coagulate, facilitating blood clot formation. The blood ves- sel is increasingly narrowed by the clot formation and can completely close the blood vessel, raising the risk of heart attack and stroke. The bloodstream continues to transport the inflammatory substances produced by the damaged endothelial cells throughout the body, triggering a generalized inflammatory response.

Effect on Sugar Metabolism

Periodontitis and diabetes tend to exacerbate one another. Type 2 diabetes is also related to the general inflammatory reaction caused by bacteria associated with periodontitis. Such inflammation can negatively affect the regulation of blood sugar, or glucose.

Blood sugar levels are regulated by the hormone insulin, which is produced in the pancreas. Insulin binds to insulin receptors located on cell membranes. In turn, the binding activates glucose transporters that take blood sugar into cells, where it is processed for energy or storage. In a healthy body, this mechanism causes blood sugar levels to drop. This mechanism is disrupted, however, in the presence of generalized inflammation, which creates substances that inhibit the binding of insulin and reduce the cell’s uptake of sugar. This leaves the body’s glucose levels high. Inflammatory substances that are by products of periodontitis appear to play a special role in this disruption.

Even when diabetes is absent, a severe case of periodontitis can in- crease the body’s blood glucose levels. This condition eventually can make the body’s cells unresponsive to messengers, leading to insulin resistance. Diabetes not only affects blood glucose levels, it can also negatively impact periodontal status.

When blood sugar remains elevated, significant numbers of proteins adhere to the excess sugar that has attached to hemoglobin in red blood cells. This process creates advanced glycation end products (AGEs). Glycation occurs when insulin does not properly metabolize sugars, thereby promoting the destruction of collagen in blood vessels. In turn, this causes blood vessels to become brittle and form plaque.

AGEs also promote periodontitis by crosslinking fibers of the connective tissue, impairing periodontal wound healing. The body’s white blood cells and vascular wall cells also recognize AGEs, triggering the formation of messengers that encourage inflammation. The messengers summon inflammatory cells, while disturbing the wound healing process accelerating the destruction of periodontal tissues.

Seeing Is Believing

Sunstar has created a three-dimen- sional (3D) video to better explain these concepts. The 3D video, Cell-to-Cell Communication Oral Health and Systemic Health, for which Jepsen was a creator, outlines specific benefits that are important to oral health professionals. ‘The film illustrates how periodontitis may contribute to systemic conditions such as atherothrombosis or diabetes, or negatively influence their course. It also shows how diabetes negatively impacts the periodontal tissues,’ Jepsen says.

Jepsen describes the video technology as an excellent example of modern science in action. ‘It is hoped that [this video] will help oral health profes- sionals communicate these find- ings to their patients,’ Jepsen adds.

There is more to be learned about cell-to-cell communication that will be an asset to oral health professionals, according to Jepsen. He says that in the future it may be possible to visualize the physio-pathological processes involved in the develop- ment of peri-implant infection/inflammation. ‘The prevalence of peri-implant disease is dramatically increasing, posing an emerging public health problem,’ Jepsen says. ‘The prevention and resolution of peri-implant infection is a new chal- lenge for the oral health care team,’ he adds.

With periodontal diseases affecting more than 70% of some adult popu- lations in the US, the challenge of holding periodontal bacteria at bay persists. Oral health professionals, equipped with the understanding of how these microbes affect the entire body and trained with the clinical skills to address them at the source, will continue to shoulder a consider- able responsibility in helping at-risk patients maintain their oral health.

References
In 2012 CAPP joined a global family of 95 publishers by becoming the proud owner of the Dental Tribune Middle East & Africa edition, and since then we have been delivering 6 print publications to over 20,000 Dental Professionals and in the MEA region, 24 e-newsletters are delivered to more than 41,000 active subscribers, and through an international website the latest industry news reaches the largest dental community worldwide an audience of over 650,000 Dental Tribune readers.