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 Int’l 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.

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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)

Dental Hygienist Seminar
05 November 2016

Theme:
“Dental Hygiene - Challenges & Opportunities for the dental professional”

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isms may increase their virulence exchange” among the microorganisms.

This “friendly neighborhood setting.” This “friendly exchange” among the microorganisms may increase their virulence via quorum sensing, pretty much like how we exchange greetings, marketing tips, and Christmas gifts with the residents 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 plaque 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. These 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.

Biofilm Removal- An Innovative Approach

Air polishing with the appropriate powder: Its indications have been extended from biofilm removal for natural teeth to a new state of preventive, efficient and comfortable care in implant maintenance and management of peri-implantitis.

By Dr. Wong Li Beng, Singapore

Biofilm revisited

It would not be an exaggeration to say that without the formation of biofilms in the mouth, oral hygienists and periodontists would never have existed. The oral cavity is a dynamic environment, where there is a constant accumulation of microorganisms, embedded within an extracellular polymeric matrix, that adhere to the tooth surface or any hard non-shedding material [1]. Within the biofilm, the microorganisms interact via quorum sensing, pretty much like how we exchange greetings, marketing tips, and Christmas gifts with the residents living nearby in a neighborhood setting. This “friendly exchange” among the microorganisms may increase their virulence...
HYPERSENSITIVITY DUE TO TOOTH EROSION CAN BE GONE WITHIN SECONDS* WITH COLGATE® SENSITIVE PRO-RELIEF™ TOOTHPASTE

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* 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 substances on the treated surface is dependent on several factors and we can broadly classify them under hypoeutectic factors, abrasive media related factors and user-related factors [4].

Hypoeutectic factors:
- a) Amount of water
- b) Air pressure

Abrasive media related factors:
- a) Emitted powder mass
- 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 the impact per particle size of 14 µm available in the market. Although the impact per particle size of 14 µm available in the market. Although the impact per particle is extremely low due to its small size, the high powder flow density allows it to effectively remove moderate stains. Figure 3 illustrates the stain removal effect of air polishing powder on a calculus surface.


d) Cleaning prior to placement of dental restorations or hand instruments

c) Cleaning prior to fissure sealant placement

e) Cleaning prior to fluoride application

Clinical evidence and conclusions

In the modern world of evidence-based dentistry, no product can stand the test of time if it is not proven clinical efficacy, benefits and safety cannot be substantiated through rigorous clinical research data. Also clinical trials have been carried out over the years to demonstrate the use of air polishing technology as a modern reliable treatment modality for biologic removal and the results have been mostly positive.

In a clinical trial conducted on patients using air polishing for sub-gingival plaque removal and hard tissues as evaluated by scanning electron microscopy [1] Perio Tribune 1990:34 349-355.


PATIENT SENSITIVITY CAN BE GONE IN SECONDS.

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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 insights 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 circulation “especially in cases of advanced periodontitis,” Jepsen notes, “and these bacteria are able to thereby elicit so-called systemic inflammation.”

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 periodontium.”

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 increase 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. For example, 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-dimensional (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 atherosclerosis 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 education. “It is hoped that [this video] will help oral health professionals communicate these findings 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 development 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 inflammation is a new challenge for the oral health care team,” he adds.

With periodontal diseases affecting more than 70% of some adult populations 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 considerable 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.