Ivoclar Vivadent launches new alloy Callisto CP+

SCHAAN, Liechtenstein: Ivoclar Vivadent has announced the global launch of Callisto CP+, its new palladium-containing, cobalt-based ceramic alloy, featuring low density and high strength. According to the company, the indications of Callisto CP+ range from single-tooth restoration to long-span bridges, also allowing the fabrication of implant superstructures. Because of its high strength, it can also be used in the press technique.

With Callisto CP+, Ivoclar aims to complement its alloy product range, Manfred Tauber, Product Manager Alloys, explains. He also told Dental Tribune that the situation in the dental alloy market has taken its toll on purchase prices, which have increased although the selling price remains unchanged. “With Callisto CP+, we would like to adjust to the current market situation,” he continued. “We offer this alloy at a low reference price, making the purchase price for dentists and dental technicians a predictable factor.”

Owing to the low density of 8.9 g/cm³, both the price and the quantities needed are kept at a minimum, Mr Tauber added.

www.ivoclarvivadent.com

Hydrim C51 wd Hydrim M2

Statim 2000 S

If it isn’t clean, it can’t be sterilised!

Hydrim and Statim, your perfect partners in the sterilisation process

Authorities now recommend that instruments cannot effectively be sterilised unless they have first been cleaned in a mechanical washer. Across Europe guidelines are under review to reflect this advice.

That’s why effective sterilisation begins with the Hydrim® C51wd or M2 instrument washer.

• Hydrim pre-wash removes proteins
• Hydrim uses two high pressure sprays to remove virtually all organic debris
• Hydrim is independently tested for 99.9 – 100% efficacy
• Hydrim perfectly prepares instruments for sterilisation
• Hydrim uses patented instrument protection system
• Hydrim helps protect the dental team against puncture injuries

Following the Hydrim wash cycle, the instrument basket can immediately be transferred into an S class Statim® autoclave cassette for the fastest sterilisation cycle available.

Most instruments, including handpieces can now be sterilised between patients in a Statim 2000S in only 8 minutes. The fast Statim S cycle process fully complies with the latest European standard EN13060 and RKI guidelines.

• Statim, the world’s most popular autoclave, automatically sterilises all solid, hollow, snapped and un snapped loads.
• Statim is 5 times faster than typical B-cycle autoclaves
• Statim is validated to sterilise dental instruments including handpieces
• Statim’s performance is validated by biological and mechanical means
• Statim provides tracking and record keeping via printer or data logger

The compact Statim C51wd and Statim units are designed for benchtop use and are the perfect partnership for the sterilisation area even in the smallest practice. The floor standing Hydrim M2 can process about 100 instrument sets in a 10 hour day and is ideal for the larger, busy practice.

For further information about SciCan products please contact:
China, Taiwan, South Korea, Hong Kong, Vietnam
Patyue Liu +88 2 61910812 or email pliu@scican.com

Australia, New Zealand, India, Malaysia, Singapore, Thailand, Philippines
Eric Bernard +61 7 46816262 or email ebernard@global.co.za

If it isn’t clean, it can’t be sterilised!

Dental Tribune UK moves in ‘leaps and bounds’

Penney Palmer
DT United Kingdom

LONDON, UK: Dental professionals from small practices in the UK are choosing to read Dental Tribune (DT) over any other dental publication, according to a recent survey by the British Dental Trade Association (BDTA). The Dental Readiness Survey, by the BDIA, found that a total of 66 per cent of DT readers are from small practices and half of the dental professionals who read DT say they read it regularly.

More than half of DT’s readers are aged between 35 and 44. This makes DT the second preferred choice for people in this age group.

Penney Palmer, editor of DT UK, said: “We have only been in the market for two years and are already moving in leaps and bounds compared to other stalwarts in the market that have been around for years.”

The survey also found that the British Dental Journal and BDJ News are the dental publications that attract the highest number of readers. A total of 96 per cent of dental professionals believe that dental publications enable them to keep abreast of what is happening in the dental industry; while 77 per cent read dental publications to gain information on the newest techniques.

www.dental-tribune.co.uk

Statim and Statim are registered trademarks of SciCan Limited

AD
The population is ageing rapidly because of the prolonged life expectancy evident in many industrialised countries in the world. Accordingly, the number of bedridden elderly requiring systemic care in residential, dental and nursing homes is increasing. Institutionalised, elderly individuals who need systemic care have poorer oral health than those who live independently at home.1,2 In particular, the oral hygiene of the bedridden elderly is often poor.3 Diminished oral health, in turn, may affect their quality of life.4,5 Moreover, changes in microflora related to poor oral health include an increase in the prevalence of pathogenic and opportunistic agents and a contribution to the development of pneumonia5 as bacteria present in oropharyngeal flora are aspirated into the respiratory tract; therefore, their presence is a risk for the elderly and compromised hosts. As a result, in many countries, dental plaque can be aspirated into the lungs and cause pneumonia.5,6 Amounts of oral micro-organismal hygiene is considered important for controlling oral micro-organisms, including opportunistic pathogens on tooth and mucosal surfaces, and some studies have indicated that oral hygiene treatment of hospitalised elderly patients reduces the risk of nosocomial pneumonia.7,8,9 Thus, professional oral care may be effective for reducing the risk of nosocomial pneumonia in elderly patients. Streptococcus pneumoniae and Staphylococcus aureus have been demonstrated to cause nosocomial pneumonia following oral care.10 In Japan, the number of bedridden elderly individuals who need professional oral care treatment is increasing.27 Twenty-five elderly subjects who had the systemic illness of mutans streptococci and oral cavity in long-term care facility participated in the study. After treatment with oral mucosal care and the physician's care, a significant decrease in the number of MS was immediately achieved after professional oral care with and without oral mucosal care. Number of MS detected on tooth surfaces at zero, one, two, three, six, and 12 months after treatment are shown in Fig. 1. After routine oral care, a significant decrease in the number of MS was immediately achieved after professional oral care with and without oral mucosal care.27

Routine oral care in the institutionalised elderly

Regular and routine dental caries and periodontal disease in humans is associated with tooth loss.28–30 Several species of bacteria, including Streptococcus mutans, Streptococcus sobrinus, Porphyromonas gingivalis, Aggregatibacter actinomycetemcomitans, and Aggregatibacter actinomycetemcomitans, are pathogens related to dental caries and periodontal disease in humans.28–30 The prevention of these diseases requires the control of these pathogens, which exist in an oral biofilm known as dental plaque. The use of antimicrobial agents has been found to be helpful for the prevention of dental caries, periodontal diseases, and pneumonia. Chlorhexidine and poly-oidinone are potent anti-microbial and chemical agents that reduce oral pathogens in the oral cavity. However, their clinical application is limited because they have a bitter taste and can stain teeth with frequent use. Moreover, they induce various adverse reactions, such as anaphylactic shock, and may destroy the balance of normal and microbial flora, including oral streptococci, which exist in high concentration in the elderly, because the causes have broad spectrum to anti-microbial agents. Thus, it is important to use anti-microbial agents that exhibit few or no side-effects in oral cavity, which play a role in resistance to colonisation by invading such agents.11,12 The presence of mutans streptococci has been shown to have an inverse correlation with the presence of Pseudomonas aeruginosa and MRSA in the oral cavity.13 The growth of mutans streptococci is associated inversely with the carriage of pathogenic bacterial species in the oral cavity.13 This indicates that humans required a certain amount of micro-organisms, to survive for the process of evolution in the oral cavity.

The use of anti-microbial agents on oral hygiene

Dental caries and periodontal diseases are a large problem for oral health professionals, and are strongly associated with tooth loss.28–30 Several species of bacteria, including Streptococcus mutans, mutans streptococci and tongue, and opportunistic pathogens in elderly residents of long-term care facilities.

Trends & Applications 21

Effects of professional oral care on oral infection in the elderly

Professional oral care with mucosal care is an important practice for maintaining the oral health of the elderly.28–30 However, little is known about how oral mucosal care controls oral pathogens in the oral cavity. In order to determine an optimum control strategy for oral pathogens, such as mutans streptococci (MS) and Candida spp., with which to maintain the oral health of the elderly, Nishiyama et al. (unpublished) examined the combined role of professional care, oral mucosal care and the physiological effects of professional care, as well as the effects of mucosal care as a method of reducing MS and Candida spp. in the oral cavity during short and long-term care.50 Fifty dependently living, institutionalised, elderly subjects (mean age: 86.0 ± 10.4 years old) participated in the study. After treatment using professional oral care with or without mucosal care, a significant decrease in the number of MS was immediately achieved after professional care with mucosal care and at one to 12 months in all samples, but not following professional care without mucosal care (Fig. 2). No significant difference in total streptococci and lactobacilli was found in any samples in groups with infection, and the ratio of MS to total streptococci was not significant. Inhibition of opportunistic infection with Candida spp. was also observed in cases where oral mucosal treatment was used. Thus, it can be deduced that mucosal care may be more effective in controlling the number of MS on the hard tissues, such as the tooth and tongue, and opportunistic pathogen infections, such as Candida spp., in the oral cavity following professional treatment. The data suggest that mucosal care is an important procedure for the prevention of dental caries and pneumonia.

Effects of systemic immunity on oral microbiological infection

It deteriorates not only systemic immunity, but also oral immunity, because of alternation of the oral environment, for example, a decrease in saliva volume and a change in saliva components. Alternation of the oral environment results in a loss of balance in commensal bacterial flora. Decreased immunity may result in infection by these micro-organisms, and because of this, surgical procedures are thought to increase the risk of infection. Individuals with either inherited or acquired immune deficiency are subject to an increased risk of dental disease.30,31 Many of the protective immune responses of elderly people are impaired, which leads to an increased risk of oral bacterial infections.

Little is known about the interaction between the systemic and oral immune systems. From the results shown in Figs. 1 and 2, it is suggested that routine professional oral care with mucosal care is an effective procedure for maintaining the oral health of the elderly.
and local immune response with regard to oral infections and oral diseases. Kamoda et al. (in press) conducted an epidemiological study of the independent elderly, to determine the relationship between activated natural killer (NK) cells and oral bacterial infections, such as dental caries and periodontal disease. Natural killer cells are instrumental in the innate immune response for the early production of interferon-gamma (IFN-γ) and other cytokines necessary for controlling bacterial, parasitic, and viral infections.\footnote{22, 23} Reports show that products prepared from leech extracts of Gram-positive bacteria, such as streptococci, staphylococci, and lactobacilli, activate human NK cells.\footnote{24, 25}

One hundred independent elderly people aged 77 years old (55 males, 47 females) were examined. Blood samples were drawn and activated NK cells were evaluated using CD16, CD56, and CD69 monoclonal antibodies with flow cytometry. Human blood NK cells responsible for antibody-dependent, cell-mediated cytotoxicity constitutively express CD56 and CD16. In addition, NK cells express C-type lectin receptors, such as CD99, which is an early activation marker.\footnote{26} The majority of CD69/NK cells (CD69/CD56) showed significant correlation with the isolated number of total streptococci (R = 0.409, P < 0.01; Fig. 5a), species numbers of opportunistic pathogens (R = 0.538, P < 0.01; Fig. 5b), numbers of decayed teeth (R = 0.223, P < 0.05), and the amount of bridge work (R = 0.219, P < 0.05). A high proportion of CD69/NK cells is associated with the incidence of dental caries, the number of opportunistic pathogens, and total streptococci in the oral cavity of the elderly. This suggests that determining the proportionate numbers of CD69/NK cells may be a useful indicator of oral infection in elderly subjects.

Following daily professional oral care for a month, the activated CD69/NK cells were measured in the institutionalised elderly. The results showed that the proportion of activated CD69/NK cells was significantly elevated by the treatment in comparison with the primary data of activated CD69/NK cells (Fig. 4). Therefore, it can be deduced that regular professional oral care may stimulate systemic immunity in the institutionalised elderly. This may indirectly control infection by opportunistic pathogens and the balance of the microbiological community, as well as the physical removal of bacteria in the oral cavity. However, further studies are required to explain these mechanisms.

Effects of local immunity on oral pathogens following professional oral care

We examined the amino acid residues 561–586 of Streptococcus mutans surface protein antigen (Pae) and an important region associated with the interaction between S. mutans and salivary components. The Pae (561–586) peptide has been shown to induce an antibody that inhibits the interactions of S. mutans with salivary components on tooth surfaces, which is considered important for the adherence of S. mutans to tooth surfaces. Low and high concentration...
Take control:
Introducing Callisto® CP+

Take control of market fluctuations with a controlled-price noble alloy you can depend on.

- Controlled economics compared to other noble alloys
- Trouble-free casting with both flame and induction equipment
- Technician-preferred composition – nickel-, silver- and copper-free
- A CTE range that is compatible with all types of commonly used ceramics

Beautiful aesthetics and sound economics.
That’s Peace of Mind. That’s Callisto CP+.
tions of the salivary IgA anti-body (PPA) to the PAc(361–386) peptide were found to be positively and negatively correlated with the concentration of MS in saliva from human subjects, respectively. Therefore, salivary IgA is key to controlling oral pathogens. However, little is known about how salivary IgA controls MS colonisation and infection in the oral cavity or about the components present in saliva that are anti-microbiological agents. In order to determine the best dental caries prevention strategy for maintaining oral health of the elderly, we examined the combined role of the PPA during professional oral care and in the physical effects of professional care, as well as the effects of antibody function in reducing MS in the oral cavity during short- and long-term care. Here we studied two groups of elderly patients with PPA present or absent in their saliva. Thirty-nine independently living, institutionalized, elderly subjects (mean age: 75.9 ± 7.5 years) participated in the study.

Following professional oral care, the number of MS decreased significantly after six months in the saliva samples from the group without PPA in comparison with the primary data, whereas in the PPA detected group, a significant decrease in the number of MS was shown immediately after professional care of one month to 12 months in the saliva samples (Fig. 5). The measurement of PPA may be used for preventive instruction at chair side in a clinical office because it provides an effective evaluation of professional oral care to indicate elderly patients at risk of caries.

Conclusion

Healthy oral microflora are ensured by professional oral care with mucosal care, which may stimulate systemic immunological activity, promote local immunological activities to oral pathogens, and play a role in the physical removal of biofilm and micro-colonies formed by oral micro-organisms on teeth and tongue surfaces and mucosal epithelial cells attached to oral micro-organisms. Systemic and local immunities with the support effects of professional treatment that removes biofilm may be more effective in controlling oral micro-organisms in the oral cavity than conventional care that does not completely remove the biofilm. Routine professional oral hygiene using safe anti-microbiological agents is necessary for a healthy environment in the oral cavity in the institutionalized elderly. The microflora, re-established by commensal bacteria, such as α-streptococci, after removing biofilm through routine professional treatment, provide a barrier to opportunistic pathogens. Therefore, routine professional oral care is considered to re-establish or sustain the healthy and non-pathogenic microflora in the oral cavity of elderly people.

Demi™ is half the size and weight of previous Demetron LED curing lights and ergonomically designed to reduce stress on the hand and wrist. Packed with cutting-edge features, Demi is the most advanced light to carry the Demetron name. For more information, log on to kerrdental.com or call 800.KERR.123

©2007 Kerr Corporation

The cure for the common cure.

Contact Info

Hidenobu Senpuku, PhD, DDS, works as Laboratory Chief of the Department of Bacteriology at the National Institute of Infectious Diseases, Japan. He can be reached at hsenpuku@nih.go.jp.