Porphyromonas gingivalis (Pg) is considered a major pathogen in destructive periodontal disease. This subgingival bacteria is rarely found in healthy children and is a strong marker of periodontal disease in adults. Studies of Western populations show transmission of this bacteria between spouses. Transmission of the bug from one to another does not guarantee development of the disease; that depends on the susceptibility of the host.

Researcher from The Netherlands are gathering data on a remote population in the village of Java, Indonesia. In this village of 2,000 inhabitants, a tea plantation provides employment, with only emergency dental care provided by a physician. Subgingival plaque samples were evaluated from a total of 158 subjects including parents and children. Of the 105 or 67 percent that cultured positive for Pg, 23 married couples were identified. Thirteen of these couples found both spouses positive for Pg. Of the 105 positive subjects, 30 were children of 13 families. Genetically identical Pg was found more often in siblings than between parents. It seems the bacteria is spread down from the parents to the children rather than between spouses in this population.

Clinical Implications: Treating periodontal disease in adults may be a preventive measure controlling the spread of periodontal pathogens from parents to children.


Obesity can resemble a low grade infection

Levels for obesity remained relatively stable in the 1960s and 1970s with a marked increase since the 1980s. In 2004, 32 percent of adults were considered obese in the United States. In the United Kingdom, obesity tripled between 1980 and 2002. Excess body weight is now the sixth most important risk factor contributing to disease worldwide. Obesity is a multi-system condition associated with both type 2 diabetes and cardiovascular disease. Obesity is also associated with periodontal disease in studies evaluating American and Japanese populations. However, not all study findings agree. Some show younger people more at risk while others see the link with older people. One study found the association in women but not in men. More research is needed in this area to reach conclusions.

Genco et. al., in 2005 suggested that insulin resistance mediates the association between periodontitis and obesity. Adipose tissue is the body’s most prolific endocrine system, as insulin resistance is induced by fat deposited intercellularly and by products secreted by expanding adipocyte mass. Interleukin-6 (IL-6) increases with obesity, with almost one/third of circulating IL-6 derived from adipose tissue. IL-6 controls C-reactive protein synthesis and may resemble a low grade infection. Insulin resistance and abnormal lipid metabolism seen with obesity may be responsible for the tissue breakdown seen in periodontitis.

Researchers in Ireland evaluated a group of men aged 70- to 80-years-old for a link between obesity and periodontitis. Eduntulous and those with six teeth or less were excluded from the study. Twenty-two percent of the group were obese. Current heavy smokers were nearly five times more likely to have signs of periodontal disease than those who didn’t smoke. The obese men were nearly twice as likely to have periodontal disease than those of normal weight.

Clinical Implications: Increase your focus on prevention for smokers and obese patients to help both oral and general health.


Perio bugs are transferred from parents to children

NSAIDs enhance periodontal healing

Periodontal disease is triggered by bacteria, but the greatest tissue destruction is caused by the body’s own immune system. Treatment is expanding to include control of both the bacterial component and the immune response. Several anti-inflammatory drugs have been found to enhance healing when combined with scaling and root planing, including fluriprofen, ibuprofen and acetylsalicylic acid (aspirin). They work by reducing proinflammatory cytokines as measured by elastase levels in gingival crevicular fluid.

Researchers in Turkey compared naproxen and a placebo in combination with scaling, root planing and oral hygiene instructions. No smokers were included in the study. Gingival crevicular fluid samples were taken with paper points from the two deepest probing sites in the maxilla. Clinical indices were also recorded at baseline and six weeks.

The value of personal responsibility for oral health

Prevention of caries and periodontal disease requires the participation of the individual and the advice and encouragement of the dental professional. Providing professional plaque removal may lull people into a false sense of security as a preventive measure. Clearly defining the roles of individual and clinician are essential for successful prevention.

Researchers in Sweden compared four approaches to prevention in a group of 400 young adults aged 20-27 years old. All received a prophylaxis and any necessary restorative work at the beginning of the three-year study. All subjects were given a TePe toothbrush and fluoride toothpaste and TePe triangular wooden sticks and/or J&J waxed floss.

Group One, the control group, was given a questionnaire about dental diseases and preventive measures. They received no further treatment and were recalled yearly to measure plaque and gingivitis.

Group Two were seen every two months throughout the study and once/year for examination. Their oral hygiene was evaluated and instructions were given. Fifty subjects followed this routine every two months. The other 50 in this group received professional plaque removal in two quadrants (25 upper right and lower left, 25 upper left and lower right) at each two-month visit in addition to review of oral hygiene.

Group Three received three individualized prevention education and oral hygiene instruction sessions two weeks apart, using a flip chart and tooth model. They were evaluated on brushing and interdental cleaning in their own mouth as well. This series of preventive education visits was repeated each year of the study.

Group Four received three basic preventive sessions covering the same information as group three, but in a slide presentation given to groups of 10 people. This series of three slide presentation was repeated yearly, in conjunction with the examination visit.

Both groups showed clinical improvement at the end of the six-week study. The test group that received the naproxen showed greater reduction in plaque levels, gingival index and probing depths compared to the placebo group. Gingival bleeding scores were not significantly different between the groups. Elastase levels were lower in the test group compared to the control group at six weeks.

Clinical Implications: Clinical treatment in the future may include an immune system component in addition to the traditional oral hygiene instructions and scaling and root planing for the control of bacteria.


Clinical Implications: The authors suggest replacing the saying “good dental health is a result of good dental care” with one that reflects personal responsibility: “good dental health is a result of good self-care.”


continued on page 6
Smoking cessation programs in the UK

Smoking causes more than 120,000 deaths in the UK and 650,000 deaths in the European Union each year through cancer, heart disease, stroke and lung disease. The U.S Surgeon General stated that quitting smoking would reduce the risk of lung cancer by 50 percent after 10 years and reduce the risk of heart attacks to that of a non-smoker after 15 years. Interventions by health professionals, and the use of nicotine replacement therapy (NRT) and other drugs significantly increased the success of quitting.

Smoking cessation interventions are not a routine part of dental practice, but recent research reviews suggest that oral health care professionals could play an important role in providing tobacco cessation advice. Lack of training, time, funding and doubt of effectiveness are the primary barriers. A survey in 2003 found 73 percent of patients believed dental professionals should provide smoking cessation intervention while 62 percent of dentists felt patients wouldn’t accept such interventions.

Researchers in the UK used a written, 16 item questionnaire to survey more than 350 periodontists and hygienists about their actions and beliefs on this subject. Four percent of both groups were smokers themselves. Periodontists and hygienists seemed to be engaged in the first three steps of the five A’s of smoking cessation: ask, assess and advise. They were lacking in the last two steps: assisting and arranging. Those who had some additional training did spend more time giving advice on smoking cessation. Nearly all asked about smoking, while only 20 percent of hygienists and 35 percent of periodontists actually spent more than five minutes counseling patients.

Clinical Implications: Smoking cessation counseling should be available in all dental offices and hygienists are in a perfect position to take the lead in this area. All five steps need to be included: ask, access, advise, assist and arrange.


Smoking compromises implant success

Smoking is responsible for 90 percent of all lung cancers, 70 percent of all lung disease, 80 percent of myocardial infarctions before age 50 and 30 percent of chronic heart disease and strokes. It is estimated that there are 1.3 billion smokers worldwide and that 4.9 million people die each year from smoking-related diseases.

Besides providing smoking cessation counseling, oral health professionals need to consider the influence of smoking on the success of dental implants. Smoking impairs wound healing by reducing collagen production, blood circulation, and compromising immune response. Smoking is considered one of the most important medical factors contra-indicating implant placement. Despite that fact, many smokers receive implants.

Researchers at the University of Berlin in Germany reviewed 139 research articles published between 1989 and 2005 on smoking and implants to determine the risk involved. Of these, 35 articles provided information that could be compared. It was concluded that smoking increased the risk of implant failure by two and half times. The risk was nearly three-fold in the first year and decreased to 2.3 fold up to five years.

A difference was noted between implants types. Most of the studies dealt with threaded titanium machined with TPS or HA-coated surfaces. Studies on the newer implant designs with microstructured surfaces that are acid etched or particle blasted showed no association between smoking and implant failure.

Clinical Implications: Smoking is a risk factor that must be taken into consideration when treatment planning implants. When implants are placed and smoking continues, more vigilant maintenance is advised to prevent periimplantitis and possible bone loss.