JOI: Gene combination identified as risk factor in success of dental implants

The health of the surrounding tissue affects the success of a dental implant. Identifying and reducing risk factors is therefore a key step in the implant process. Now a combination of genes has been identified as a possible indicator of greater tissue destruction leading to negative outcomes for implants.

The authors of an article in the Journal of Oral Implantology report on a study of individuals with the combination of interleukin (IL)-1 allele 2 at IL-1A−889 and IL-1B+3954. These people are “genotype positive” and susceptible to increased periodontal tissue destruction. Peri-implantitis, or the process of tissue inflammation and destruction around failing implants, is very similar to periodontal disease. The researchers sought to find any association of these genotypes with the severity of peri-implantitis progression and the effect of this combination on treatment outcomes.

This study compared two groups of patients, all of whom had implants. The first group consisted of 25 patients with peri-implantitis, while the second group of 25 patients had healthy tissue. Seventeen patients from the first group and five from the second group were genotype positive.

Patients in the first group, those with peri-implantitis, took part in a treatment and maintenance program. The genotype-positive patients in this group experienced greater periodontal tissue destruction and increased discharge from tissues. The genotype-negative patients responded better to treatment. Statistically significant differences were noted between the groups.

The combination of these two alleles in patients with inflamed periodontal tissues denotes a risk factor that can lead to further tissue destruction. Patients with the specific genotype can have exaggerated local inflammation. Gene polymorphism may affect the outcomes of treatment for peri-implantitis in genotype-positive people and affect the long-term success of implants.


About the Journal of Oral Implantology
The Journal of Oral Implantology is the official publication of the American Academy of Implant Dentistry and of the American Academy of Implant Prosthodontics. For more information about the journal or society, visit www.joionline.org/ormonline/?request=index-html.

INDUSTRY CLINICAL

Clinical and diagnostic advantages of PreXion 3-D imaging system

By Dan McEwen, DDS

For nearly 100 years, dentists have relied on 2-D radiographic imaging for diagnosis and treatment planning. With the 1999 introduction of cone-beam computed tomography (CBCT), all dentists now have tools available for more accurate diagnosis and treatment.1 The ability to look at a tooth in any direction and orientation, as well as in 3-D, eliminates much of the guesswork commonly experienced with 2-D radiographs.

We have been limited in most cases to only a buccal-lingual view provided by periapicals, bitewings and panoramic radiographs with the occasional axial view of an occlusal film. Medical CT scans and images began in the early 1970s and were sometimes used by dentists, offering our first multi-planer views.2

The adoption of 3-D cone-beam imaging is appropriate and has important advantages for all modalities of dentistry. From every specialist to the general dentist, the increased amount of radiographic information as well as increased accuracy will aid in the most sound diagnosis possible.

CBCT description

CBCT is a single or partial rotation of an X-ray source around the head, capturing X-rays on various flat panel arrays and sensors. The information is converted to a series of axial slices by computed tomography and stored as arrays and sensors. The information is converted to a series of axial slices by computed tomography and stored as digital files, enabling the user to manipulate and easily review the data. The images can be viewed in a variety of positions, planes, and magnifications.

In addition to its many advantages, CBCT can be used for a variety of diagnostic and treatment planning applications. One of the most common applications is to provide 3-D information for guided implant surgery. Preoperative evaluation of the potential bone volume and morphology can be performed to determine the best possible placement of implants. The use of CBCT also allows for more accurate and efficient placement of implants, reducing the need for postoperative adjustments.

CBCT is also useful for evaluating the extent of bone loss and determining if there is enough bone present to support an implant. This information can be used to plan the placement of bone grafts before implant placement, ensuring that the final result will be successful.

CBCT is also useful for evaluating the proximity of nearby structures, such as the maxillary sinus, nerve, and blood vessels. This information can be used to plan the implant placement to minimize the potential for complications such as resorption, infection, or nerve damage.

CBCT is a valuable tool for dental professionals, offering many advantages over traditional 2-D radiographic imaging. It allows for a more accurate and efficient evaluation of the jawbone and surrounding structures, providing valuable information for diagnostic and treatment planning applications.

Windy City welcomes ICOI Implant Prosthetic Symposium in August

The International Congress of Oral Implantologists (ICOI) will return to one of its favorite locales for its 14th annual Implant Prosthetic Summer Symposium. The dates to add to your calendar are Aug. 18-20, and the venue will be the Downtown Marriott Hotel on Michigan Avenue in the heart of Chicago. Just steps from the famous Navy Pier and the excitement of summer in the city, this meeting promises both educational enrichment and social opportunities.

ICOI returns to Chicago

Chicago is the site for the ICOI’s 14th annual Implant Prosthetic Summer Symposium. (Photo/Christiane Ferret, Dental Tribune)

The Chicago program’s goal is about education for everyone on the implant team. Formulated with the original vision of ICOI’s Implant Prosthetic Symposium, the mission is to highlight the restorative
aspects of implant dentistry, with a focus on expanding technologies that enhance the daily practice for the GP, the specialist, dental auxiliary and dental laboratory technician.

The scientific program will begin on Thursday afternoon, Aug. 18, with a focus on the latest in esthetics and prosthetic reconstruction techniques. Friday will feature recent innovations in guided surgery applications and treatment of the atrophic patient as presented from the clinician and laboratory technician perspective.

The program will conclude on Saturday with presentations on occlusion, over-denture concepts, complications and advancements in restorative components.

Dr. Scott Ganz has arranged the scientific program, which features speakers including Drs. Natalie Wong, Michael Moskovitch, Philippe Russe, Lampert Stumpel, Thomas Balshi, Dwayne Kareteew, Michael Pikos, Jack Krauser, Konstantinos Valavanis, Barry Goldenberg, Aldo Leopardi, Carl Misch, Paul Wiegell, Marius Steigmann, Hom-Lay Wang, Ady Palti, Zeve Ornianian, Roberto Marra and dental technicians Stephen Balshi, Renzo Casellini and Ulrich Hauschild and many more.

The ICOI is an ADACRP and AGD PACE Recognized Provider. This symposium is designated for 19 continuing education credits.

Preceding the general session, there will be six pre-symposium workshops on Thursday morning offered by the two Gold sponsors, Nobel Biocare and Osstell, and the five Silver sponsors, BioHorizons, Dentsply Tulsa Dental Specialties, Implant Direct, Osteogenics and PreXion. For complete information on these courses and on the meeting in general, visit ICOI’s web site at www.icoi.org.

In addition, ICOI will continue to hold its Table Clinic/Poster Presentations at the meeting for delegates at all levels of experience. These will take place Thursday evening during the Welcome Reception in the Exhibition Hall.

ICOI’s auxiliary section (ADIA) will also hold a two-and-a-half-day program (in tandem with the doctors program), which will include its full-day certification programs for hygienists, dental assistants and practice management staff members.

Delegates should make sure to contact the host hotel, the Downtown Marriott on Michigan Avenue, as rooms are going fast.

To contact the Marriot, call (800) 266-9432, or visit www.icoi.org, and make reservations online. But do so today.

We want to see you this August in that Tuddelin’ Town, Chicago.

Tell us what you think!

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