On 29 and 30 September 2017, the 47th DGZI International Annual Congress was held in Berlin, Germany. 60 speakers from eight countries had been invited to discuss the rather provocative question of “Does biology still matter?” taking a closer look at the controversial topic from all its facets. The scientific board was chaired by DGZI President Prof. Dr Herbert Deppe and DGZI Vice President Dr Roland Hille.

Congress opening

The congress opened on Friday in presence of numerous associated professional societies in the area of dental implantology. Delegates from Japan, the Eastern Europe, North America and the Arabian region joined the event.

In their welcome speech, Prof. Dr Herbert Deppe and Dr Roland Hille referred to one of the main topics of the congress which was conventional vs digital workflow. They posed the question of whether the conventional workflow is still contemporary or has the digital workflow already taken over the lead. However, there were still some problems to solve, as they concluded. Another important point of discussion was the multi-morbidity of patients with regards to extensive medication prescription. In this context, the scientific committee pointed out the importance of dentists’ to consciously look at the oftentimes complex pathology of their patients. Considering this, they would be better able to estimate individual risks regarding planned surgeries.

Subsequently, Prof. Dr Stefan Wolfart and Dr Christian Mehl gave a closer insight into the dispute of conventional vs digital workflow. Using impressive images and well-documented case examples, they discussed advantages and disadvantages of both practices. Each speaker concluded in his lecture that dentists can feel at home in both worlds—depending on the availability of equipment and material, and their individual educational level. “What is significant is the improvement of the treatment quality,” Prof. Dr Wolfart stated, and simultaneously advised his colleagues: “Don’t let the industry fool you that you necessarily need to buy this or that!”
DGZI past President Dr Friedhelm Heinemann spoke about fixed restorations made from full-ceramics—tension-free and efficient. "There is a lot that works, however, you have to do it in the right way," with this initial statement Dr Heinemann had the auditorium on his side. Oftentimes, dentists have to decide between a tension-free cementation that may be fraught with biological difficulties (cementitis), and screwing that comprises aesthetic disadvantages and may cause tensions. He proposed a solution using both procedures: fabrication of the crown with a hole, cementing, and screwing.

Dr Victor Clavijo who had been travelling from Brazil to the German capital, divided his lecture into three parts: experiences, evidence, and reproducibility. In his lecture, he focused on the maxillary anterior teeth which are an aesthetically relevant zone. Thereby, he pointed out differences in the prosthetic treatment. His first take-home message was: "Keep the maxillary anterior teeth as long as possible!" If implants cannot be avoided any longer, he suggested to use diameter reduced implants preceded by a soft- and hard-tissue augmentation. His second take-home message was: "Always change an unfavourable initial situation to a favourable one, and only afterwards talk about implants!"

After the opening session, the congress participants had ample opportunities to visit different podiums; they could choose between the main podium, the international podium, and the corporate podium.

Biology and medication

In the afternoon of the first congress day, one of the first lectures was presented by DGZI President Prof. Dr Deppe. He referred on benefits and limitations of dental implants in patients with systemic diseases. Thereby, he concentrated on cardiovascular diseases, diabetes, and immunodeficiency diseases. Despite inconsistent guidelines and advices, Prof. Deppe concluded that patients with these diseases may be well treated with dental implants given the respective disease is under control. The same applies to old patients in a good overall condition.

Prof. Dr Weischer perfectly rounded off the lecture of his previous speaker by emphasising the meaning of biology in implant treatment of patients having pre-existing diseases. In case of patients undergoing an antiresorptive therapy, the individual risk potential limits the decision of inserting dental implants—especially in long-term and intravenous administration. Another risk for implant treatment is caused by long-term and high administration of cortisone. Thus, a careful anamnesis, well-balanced indication, and pre-operative antibiosis is crucial for the implant.
success, Prof. Dr Weischer concluded. Taking into account these factors, implants could be a therapeutic alternative even in tumour patients.

In the following, Dr Dr Frank Halling talked about relevant side effects and interactions of the 50 frequently prescribed medications in Germany. In his thoroughly researched presentation, he pointed out that an over 65-year-old patient averagely takes four different agents. In view of this fact, polypharmacy and polymorbidity are also a relevant issue and considerable challenge for dentists. Thus, dentists are obliged to consult the respective general physician or internist before they carry out a complex surgery.

After having heard a lot of interesting lectures, congress participants concluded the day with a special event. During the live show “Stars in Concert”, DGZI guests enjoyed a memorable time from best seats, and meet a lot of stars, amongst them Elvis Presley, the Blues Brothers, and Elton John.

Biological aspects in implantology

The second congress day was opened by a presentation of Prof. Dr Siegfried Heckmann. He introduced a study on immediate implants and immediate restoration in the aesthetically relevant zone. Thereby, he clearly stated: “One has to decide either for a consequent immediate implantation and restoration, or for a delayed implantation and restoration. Do not mix these procedures! Do not use mixed procedures!”

Subsequently, Prof. Dr Constantin von See addressed the question of how implants that are currently available, still make sense under a biological point of view. Following years of stagnation, a new variety in terms of implant design and form has been developed, as Prof. Dr von See stated. Thereby, a great importance is attached to the crown-implant ratio and implant stability. DGZI board member Prof. Dr Kai-Olaf Henkel followed this topic in a perfect manner by talking about the force flux at the implant that
Implants are crucial for implant success. He concluded that it has to be of highest priority to consider the surface, and pressure and tension forces.

As an expert in the field of ceramic implantology, Dr Michael Gahlert referred to biological aspects of ceramic dental implants. Ceramic implants are not merely a passing trend but a real alternative to titanium implants, he stated. Especially, with a view to biological aspects in dentistry. The following speaker Prof. Dr Max Heiland dealt with pre-implantological augmentation in the maxilla. Thereby, he focused on bone regeneration in the edentulous maxilla—based on options in the single-tooth replacement, and to avoid removable dentures. In his presentation, he specifically concentrated on the possibilities of 3-D diagnostic and 3-D support in such augmentation procedures.

Dr Daniel Thoma referred on biomaterials as alternative to autologous soft tissue implants. In his explanations he followed the credo: Biomaterials are worthwhile, and have been established as alternative to conventional procedures using autologous materials. Subsequently, Prof. Dr Thorsten Auschill focused on a both relevant and demanding topic under the headline “Update peri-implantitis therapy according to changed guidelines”. After having thoroughly described important definitions and addressed nomenclatorial questions, he concentrated on the latest therapy options in the treatment of peri-implantitis.

**Different ways—DGZI controversy**

Besides scientific lectures, the second day of the DGZI annual congress is traditionally dedicated to a controversial exchange and discussion. For this year’s podiums discussion, the scientific board succeeded to win two German top-class experts in the area of maxillofacial surgery: Prof. Dr Robert Sader and Prof. Dr Wilfried Wagner. The speakers discussed the question: “Are shorties the all-purpose weapon in implantology?” In their initial statement, both experts confessed that they as patients would agree to short implants, if the appropriate conditions were met.

During the debate it became evident that previous differences on the subject, which seemed in part irreconcilable, have ceased. Oral surgeons do not longer insist on bone blocks as the ultimate solution, and sceptics of augmentative procedures are more and more aware that their preferred procedures have their limits. Both experts agreed that today the following factors are crucial: a clear analysis of the individual patient conditions, a good pre-implantological diagnosis, a reliable command of the insertion technique used in each case, and, last but not least, implantological troubleshooting.

Closing the two-day event, participants, speakers and all those responsible looked back on a highly informative congress. In view of this successful event, those interested can look forward to 2018 and the 48th DGZI International Annual Congress which will be held on 28 and 29 September 2018 in Düsseldorf, Germany.

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From 11 to 14 October 2017, the 66th Annual Educational Conference of the AAID (American Academy of Implant Dentistry) was held in San Diego, USA. More than 1,000 implant dentistry professionals came from across the globe to attend the event. As AAID representatives stated, this was a record number. The many international attendees gathered to learn from fellow practitioners and the industry’s most renowned experts. The German Association of Dental Implantology (DGZI) was also present with its 1st Vice President Dr Rolf Vollmer, the international representative Dr Mazen Tamimi and the DGZI US representative Prof. Dr Suheil Boutros.

Dr Frank Liebaug, who also came from Germany, visited the AAID Annual Conference for the first time. “I came here to get some new ideas, and I’ve been able to confirm that over the past 20 years I’ve been on the right track”, Dr Liebaug said. “You cannot find success without education. And, we especially need to transfer more knowledge from one continent to the other.” He also said that he was looking forward to seeing some of the latest high-tech devices and instruments at the exhibition hall.

More than 130 companies attended the exhibition in the Hilton San Diego Bayfront Conference Center. They offered hands-on opportunities for practitioners to examine some of the industry’s most advanced and innovative tools and techniques. The attendees were able to learn through didactic and hands-on sessions, and through interaction with peers and at the social events.

Impressive presentations

During the four-day event, congress participants had the possibility to hear a lot of interesting lectures by renowned experts. Amongst others, impressive presentations were held by Dr Michael Pikos (“The use of rhBMP-2 for alveolar ridge augmentation”) and Dr O. Hilt Tatum (“Predictable restoration of alveolar bone”). Corporate-supported courses offered the opportunity to learn about latest innovations in implant dentistry.
dentistry directly from those who are developing the newest techniques and technologies. One of those courses was given by DGZI member and specialist Prof. Dr Suheil Boutros on “Narrow diameter implants for narrow ridges in the aesthetic zone”. In his presentation, Dr Boutros demonstrated the placement of narrow diameter implants (NDI) in a narrow ridge to avoid the need for a large ridge augmentation.

In another workshop, Dr Boutros showed that bone management is one of the key elements for achieving success in implant dentistry. Implant site development at the time of tooth extraction should be considered to prevent bone loss and allow for ideal implant placement. The presentation demonstrated how to perform an atraumatic tooth extraction and how to do socket preservation/ridge augmentation. Afterwards, the decision tree in selecting the appropriate grafting materials was discussed. The second part of the presentation discussed how to successfully grow bone through Guided Bone Regeneration (GBR) as well as ridge expansion by bone splitting with especially developed chisels and wedges.

Dr Paulo Malo, founder and president of the Malo Clinic, reported about “Recent advancements in graftless solutions, zygomatic, and tilted implants”. In his lecture, he discussed the goals in surgical and prosthetic therapy when using the All-on-4 treatment concept to restore the fully-edentulous and failed-dentition patient. The most recent advancements of this graftless solution to approach the severely resorbed maxilla and mandible were covered. Clinical management of patients were presented by demonstrating data gathering process, diagnosis, treatment planning, surgical protocols, fabrication of both provisional, and definitive implant-retained prostheses. The indications for the use of the modified technique using zygomatic implants to manage the severely resorbed maxilla cases were impressively demonstrated.

Another topic that was discussed by Prof. Dr Boutros was “Trabecular Metal™ Technology from orthopaedics to dental implantology”. Hereby, he explained the indications for this new mix of two materials. Trabecular Metal™, a porous (80%) tantalum biomaterial with a trabecular like structure for three-dimensional bone in-growth, has been used for more than a decade in orthopaedic surgery. As a result of great success in orthopaedics, a new tapered, threaded titanium dental implant with a trabecular metal midsection has been developed and tested in animal models followed by human cases for over five years. Clinical cases presenting the trabecular metal dental implant for enhanced secondary stability in poor bone quality and its indication in compromised sites in addition to medically compromised patients were presented.

Scientific joint lecture

Another highlight of the meeting was the scientific joint lecture of Dr Elisabeth Jacobi-Gresser, DGZI specialist with 38 years of experience in oral surgery, implantology and environmental medicine, and Prof. Dr Daniel Gustavo Olmedo, specialist and head professor in oral pathology at the University of Buenos Aires, Argentina. The lecture was titled “Risk factors in titanium implantology: Reasons to consider zirconia implants”. Prof. Dr Olmedo and Dr Jacobi-Gresser stated that over the past 50 years, oral implants fundamentally influenced reconstructive concepts in dental medicine. Due to its excellent biocompatibility titanium is still the preferred metal not only in dental implantology but also in orthopaedic joint replacement.
However, it seems that the risks of inserted titanium implants still remain underestimated. Titanium debris from the implant surface as result of frictional wear and corrosion (tribocorrosion) has been known for decades. Side effects from the incorporation of micro- and nanoparticles in biological systems has been mostly ignored, as titanium is widely considered to be inert. The chemically active metal ions or particles released from an implant surface, may bind to the surrounding tissues but may also bind to proteins, and be disseminated to distant organs in the vascular and lymphatic systems.

In this regard, research in human samples has shown the presence of titanium particles in:

- peri-implant tissue around failed human dental implants
- oral mucosa in contact with implant cover screws
- cells exfoliated from peri-implant oral mucosa around titanium dental implants
- reactive lesions in the peri-implant mucosa

In addition, the lecturers’ studies in experimental animal models demonstrated a deposition of titanium microparticles (MPs) and nanoparticles (NPs) and the presence of a tissue response to these particle deposits. The development of special immune assays in the past ten years gave an insight into previously unknown immunological effects resulting from titanium wear debris. Histoimmunological stainings of peri-implant hard- and soft-tissue impressively confirm the presence of immune cells like macrophages, T- and B-lymphocytes reacting to disseminated titanium particles.

Local, as well as systemic immunological responses, by proliferation of phagocytosing cells and subsequent liberation of proinflammatory cytokines have been verified through specific laboratory immune assays. In this regard, results obtained in the clinical study confirmed a statistically significant higher amount of pro-inflammatory cytokine release in patients with failed implants than in those with
long-term implant success. Moreover, multiple worldwide gene association studies have shown that individual genetic risk profiles, in respect to inflammatory high-responder reactions, influence long-term implant success. An adequate individual risk assessment should be considered before insertion of titanium devices or application of ceramic implants should be preferred.

Dr Jacobi-Gresser showed well-documented clinical case reports with immunological, genetic and histological findings and summarised: In respect to a specific immune reaction, titanium is—compared to other metals—well tolerated and does not induce allergies. Titanium, however can induce adverse signs of inflammation and lead to mucositis, peri-implantitis and peri-implant bone loss due to particle debris, mostly associated with bacterial adhesion. The reason of an individual titanium intolerance is an excessive, genetically determined proinflammatory reactivity of macrophages to corrosion particles. The microbiological risk is less on zirconia surface because the biofilm adhesion is less compared to titanium.

**Lasting memories**

Dr Alessandro Pozzi from Rome, Italy, presented the topic “How to maximise function and aesthetics with a tilted minimally-invasive approach”. The computer-guided implant surgery introduced a minimally invasive concept in the treatment of partially or totally edentulous patients, with new perspectives based on bone graft-free rehabilitation and low morbidity implant surgery. Diagnostic data obtained from CBCT and extra- and intraoral optical surface scanning showed a different digital pathway based on facially driven virtual diagnostic waxing, prosthetically driven surgical plan, digitally printed surgical template, and prefabricated implant-supported screw-retained interim restorations. The challenging interplay with the surrounding gingival framework supported by tilted implants were emphasised through a step by step clinical protocol to deliver a natural gingival architecture, a direct pink-free prosthesis emergence profile and learning to differentiate when immediate loading is feasible.

Dr Istvan Urban was the highlight of Saturday morning explaining "Vertical and Horizontal Ridge Augmentation". Dr Urban explained that vertical and horizontal augmentation presents one of the greatest challenges of bone regeneration in implant dentistry. Dr Urban recognised patient selection, patient preparation for surgery, precise surgical techniques, and postoperative management as the key factors in reducing the rate of bone graft complications. The detailed surgical anatomy of the floor of the mouth, the modified lingual flap, as well as the technique for protecting the mental nerve, was presented in detail. Recent research of the “Sausage Technique™” as well as minimally invasive soft tissue reconstruction were presented. Utilising these procedures may reduce the need of harvested autogenous bone and may generally lead to decreased morbidity, and therefore increased patient comfort and satisfaction associated with these regenerative procedures and keratinised tissue after ridge augmentation.

The participants liked wandering around not only at the welcome reception on Wednesday at sunset on the Hilton Bayfront’s Promenade Plaza. They also enjoyed the reception and celebration of the leaving AAID President. It was easy to hear a wide variety of languages and accents engaged in lively discussions about implants, football, shopping, dining and everything else, with remaining memories for all._

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Under a blue Spanish sky and with temperatures soaring above 30 degrees, the 26th Annual Scientific Meeting of the European Association for Osseointegration (EAO) was held at the Feria de Madrid fairgrounds. Attendees had little time to enjoy the sun, however, as the event had plenty to offer from 5 to 7 October. With over 600 papers, guests could learn more about the latest concepts and clinical techniques in dental implantology and oral rehabilitation.

More than 50 clinical experts from all over the world were speaking at this year’s event. Among them were prominent figures in dentistry, such as Prof. Mariano Sanz from Spain, Dr Christian Coachman from Brazil and Dr Christoph Hämmerle from Switzerland. In the guest country session, that was held on Saturday, clinicians from Latin America presented their research to a professional audience for the first time. While most of the papers had been delivered in English, they were simultaneous interpreted into Spanish for some of the sessions.

At the opening ceremony, EAO President Prof. Alberto Sicilia Felechosa welcomed everyone to this year’s congress and thanked the Spanish society of prosthodontic and aesthetic dentistry (Sociedad Española de Prótesis Estomatológica y Estética; SEPES) for co-organising the event. Over 4,000 dental professionals had registered for the three-day conference, which was in Spain for the second time since the first edition took place in 1992. Spanish attendees were then addressed by SEPES President and congress chair Dr Nacho Rodríguez Ruiz. Also during the ceremony, several members of the EAO were awarded honorary membership of the EAO, including past President Dr Franck Renouard from France.

In addition to the educational offering, attendees could try out the latest products and technologies in their field at the trade exhibition. Over 130 manufacturers and dealers, including international heavyweights like Nobel Biocare, Straumann and Dentsply Sirona, showcased their latest innovations. Attendees could also learn about products and clinical solutions at industry symposia running concurrently with the main programme.

Founded in 1991 by leading dentists interested in osseointegration, the EAO is now a worldwide authority in the fields of reconstructive surgery and prosthetic rehabilitation. In addition to its large annual event, the association holds master clinical courses throughout the year. It furthermore offers members and non-members the opportunity to obtain a postgraduate diploma in implant dentistry.

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* All prices include VAT, shipping and handling (within Germany).
Implantologists, maxillofacial or oral surgeons interested in bone regeneration should save the date for a special event in the upcoming year: On 28 April 2018, the new edition of the “Frankfurt Implantology Days” (FIT) will take place in Frankfurt/Main.

Under the proven scientific chairmanship of Prof. Dr Dr Frank Palm, Constance, Germany, 15 international speakers will share their experiences and insights in guided tissue and bone regeneration with the participants. Under the motto “Science meets Practice”, they are going to present their latest scientific results paired with clinical case reports and practical solutions for daily surgical work. Furthermore, participants can network with like-minded colleagues and take the opportunity for an international exchange of experiences.

All interested can register and join an exciting educational event within international atmosphere where science meets practice.

Fig. 1: Prof. Dr Dr Frank Palm, scientific chairman of FIT.

This CME-certified top-class event is supported by curasan AG, Germany. The full agenda and registration details can be found on the website www.curasan.com.