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Invited Editorial

Peri-prosthetic joint infection (PJI)

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Peri-prosthetic joint infection (PJI) is a devastating complication that has a huge burden on patients' functionality, time and energy of the health care providers all over the world. Orthopedic surgeons together with all disciplines involved in the management of surgical site infections has put their most effort to find ways of prevention and effective management strategies. While published research and high level evidence lead to more effective management of peri-prosthetic joint infection, there are many questions remained to be answered without strong evidence in the published literature. Group judgment is an acceptable way to find answer for questions and set the best practice when the strong evidence is lacking. Despite all extraordinary discoveries in the fields of microbiology, antibiotics and surgical techniques the battle against surgical site infection (SSI) is still running. Peri-prosthetic joint infection is the fear of every orthopedic surgeon involved in orthopedic arthroplasty practice.

This year the world orthopedic community experienced one of the unique events in the field of PJI named "World Consensus Meeting on PJI". This meeting that was held from July 31st till August 1st 2013 was the conclusion of ten months work of about 400 delegates from world orthopedic community. The goal of this group was to find answers and recommendations for more than 207 questions based on the high level evidence if present or reach to a consensus when there is a lack of high level evidence.

The idea of arranging this international consensus meeting on PJI was first conceived by two world authorities Dr. Javad Parvizi from Rothman Institute, Thomas Jefferson University in Philadelphia and Dr. Thorsten Gehrke, Department of Orthopedic Surgery, ENDO-Klinik, Hamburg, Germany in September 2013. The process of the "international consensus meeting on PJI" had three phases: first through a modified Delphi process, all 400 participants exchanged ideas remotely through social media to identify all questions regarding prevention, diagnosis and management of PJI. Selection of these expert delegates was based on two criteria: publication record and/or clinical interest in management of PJI. The consensus group included orthopedic surgeons, infectious disease specialists, scientists, musculoskeletal pathologists and radiologists, pharmacists, rheumatologists, and experts in many other disciplines. At this 9 month period 400 delegates from 58 countries and 100 societies in 15 groups conducted a comprehensive review of about 3500 publications in current literature relevant to PJI to find out high level evidence for current practices. The cumulative wisdom of 400 delegates from 58 countries and over 100 societies used to reach consensus about practices lacking higher level of evidence.

These groups covered the following areas related to PJI: 1) mitigation and education on comorbidities, 2) patient preparation, 3) perioperative antibiotics, 4) operative environment, 5) blood conservation, 6) prosthesis selection, 7) diagnosis of PJI, 8) wound management, 9) spacer, 10) irrigation and debridement, 11) antibiotic treatment and timing of re-implantation, 12) one-stage versus two-stage exchange, 13) management of fungal or atypical PJI, 14) antimicrobial

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therapy, and 15) prevention of late PJI. At this stage 23,500 communications exchanged and finally a draft was prepared to be presented for vote at the final meeting on 1st of August 2013. The draft included recommendations for management on the basis of high level of evidence if present or consensus of ideas of experts in areas of lacking high level of evidence.

Finally the draft was presented for vote on 1st of August 2013 in Philadelphia. Two hundred thirty six delegates from 52 countries representing 160 different medical institutions voted on those 207 recommendations. This more than 360 page document include is the best practice guidelines for PJI consisting of 207 recommendations and answers for 207 questions. There is no doubt that this consensus document is a pillar for "best practice guidelines" that will serve many of our patients for many years to come.

I was proud to serve as a member of the workgroup on perioperative antibiotic, and hereby, a selection of only 2 questions from more than 50 pages of document answering 22 questions in the field of perioperative antibiotic prophylaxis will be presented in this issue of SOJ as a review article. Selections of the remaining questions will be included in upcoming issues of SOJ.