

Brief interview with PD Dr. Andrej Trampuz

“Pain, arthrodesis, amputation: every infection can have devastating consequences”

Three questions to Dr. Andrej Trampuz, Senior Physician, Head of Infectiology and Septic Surgery, Charité Berlin, Germany.

A high proportion of nosocomial infections are surgical site infections. Based on your experience, what are the primary risk factors?

Dr. Andrej Trampuz: Roughly every fourth nosocomial infection is a surgical site infection. The risk factors are extremely diverse here. On the one hand, it is the patient’s health condition that plays a major role: factors such as diabetes, overweight, existing infections and medication with cytostatics can promote infection. On the other hand, perioperative factors such as the length of hospital stay, antibiotic prophylaxis, anaesthesia and the postoperative wound management are relevant to the risk of infection. Here, patients have to face many pathogens, increasingly also multidrug-resistant bacteria; the risk to suffer from additional infections and other complications rises. Hence, well-founded infection control concepts are just as necessary as consistent treatment plans to improve the medical care and promote patient protection.

The implantation of a joint prosthesis is one of the most common type of surgery conducted in Germany. In your point of view, what are the greatest challenges when infections with multidrug-resistant pathogens occur?

Dr. Andrej Trampuz: Antibiotics are no miracle cure – especially when we are speaking of resistant pathogens. However, they can have a big impact with endoprosthetic infections and biofilm – if they are used rationally and in a targeted manner and are combined with the right surgical technique. Multi-resistant pathogens are particularly problematic here. More than two thirds of the infections are caused by staphylococci. Although the MRSA rates slightly decline in Germany, therapy options are greatly limited in case of an infection with the multidrug-resistant bacteria, especially with implants. It is therefore all the more important to exactly identify the pathogen and susceptibility with the help of improved diagnostic tests. Only then we can attune the antibiotic therapy to the individual patient. Such a rational antimicrobial use also prevents new antibiotic resistances in the long run.

What concrete consequences for the patients can infections have?

Dr. Andrej Trampuz: Every infection may involve disastrous consequences for the patient – especially when they are not recognised. Instead of helping the patient gain new freedom of movement and quality of life, pathogens that for example spread in an artificial joint and colonise

the implant as biofilm can cause long-term damage: sometimes it is indicated to conduct an arthrodesis or even an amputation. These are drastic measures.

One of my patients, in her mid-thirties and police officer, was already prepared for losing a leg. After several accidents, she needed parts of her knee replaced and after the surgeries, she complained about chronic pain. The attending physicians were at a loss – even recommended to have the leg amputated. A final step that would have entailed massive limitations with regards to freedom and quality of life. A new treatment concept, which I had developed in Switzerland and use in case of septic endoprosthetic complications, was able to help the patient. This concept is based on the targeted identification of the involved pathogen and a targeted antibiotic therapy to effectively combat the infection. For this, the endoprosthesis is removed and sonicated to release the biofilm. The biofilm is then analysed immediately to identify the bacteria and possible resistances. New, very sensitive molecular methods can detect the genetic material of bacteria. This way, we can use antibiotics intelligently after the endoprosthesis has been implanted again. In case of the police officer, we identified an MRSA infection which we fortunately could treat in time. So, we saved the leg and put an end to the chronic pain of the young woman.

Source

“The operation was successful, but the patient was infected. Antibiotic resistances from the patient’s point of view.”
Speech by Dr. Andrej Trampuz, Senior Physician, Head of Infectiology and Septic Surgery, Charité Berlin, Lunchtime Symposium: “Pathogens resistant to antibiotics: new hygiene strategies along the patient journey”, 17 November 2016, Berlin, arranged by the BODE SCIENCE CENTER, Hamburg, scientific centre of excellence of PAUL HARTMANN AG, Heidenheim.

