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Symposium: Proceedings of the 2015 Musculoskeletal Infection Society

Editorial Comment: Proceedings of the 2015 Musculoskeletal Infection Society

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Periprosthetic infections are associated with considerable morbidity and present an increasing burden on patients, healthcare providers, and society. Many questions remain unanswered and we need thoughtful research to help us understand, prevent, diagnose, and treat this challenging problem.

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Prevention of infection is greatly preferred to treatment, and several interventions are being undertaken with the aim to reduce the risk of postoperative infections. Preadmission chlorhexidine skin preparation appears to decrease the risk of periprosthetic infection, but it is unclear which patient groups may benefit. Administration of perioperative antibiotics is a well-established preventive measure, however the agent of choice in different clinical scenarios will vary and often is the topic of debate.

The diagnosis of periprosthetic infection remains difficult, especially in chronic infections caused by low-virulence organisms or in the setting of prior antibiotic administration. Recent developments in this field include the application of strict criteria for the definition of periprosthetic infection and the use of synovial fluid biomarkers, such as alpha defensin, to facilitate diagnosis. In the setting of a periprosthetic infection treated by two-stage revision arthroplasty, it is extremely important to assess resolution of infection before proceeding with reimplantation. However, our current diagnostic modalities have less than ideal sensitivity to rule out persistence of infection in this setting.

Periprosthetic infections are associated with biofilm formation on implanted material. Bacteria growing in biofilms are highly resistant to antibiotics and host defense mechanisms; therefore antibiotic therapy and limited débridement with


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implant retention fail to eradicate chronic infections and have limited efficacy in acute infections. Potential ways to improve efficacy of antibiotics against biofilm-associated bacteria may include achieving higher local levels, increasing exposure time, and combining antibiotics with electrical stimulation of implants or with other interventions. To this point, much of the work on this topic is still relatively fundamental, but one hopes that soon it will cross the bridge into clinical application.

Our proceedings—consisting of basic and clinical research presented at the 25th annual meeting of the Musculoskeletal Infection Society (MSIS) in Cleveland, OH, USA in 2015—convey both the promise and the challenges that remain on the topic of periprosthetic infections. The annual MSIS meeting serves as a forum for education, presentation of novel research, promotion of scientific dialogue, and incubation of multidisciplinary innovation in the field. We are proud to share our proceedings with readers of *CORR*®, and we hope that they will stimulate further investigations.