The **DEVASTATING** Impact Of

Periprosthetic Joint Infection (PJI)

ZIMMER BIOMET

What is PJI?

PJI is one of the most common complications after total joint replacement, often resulting in prolonged hospitalization and considerable patient morbidity.[1]

The five-year mortality rate for patients with PJI is higher than [6]

Breast Cancer
Melanoma
Hodgkin's Lymphoma

What is PJI Costing Your Facility?

PJI is a significant economic burden to the overall health care system and considered the largest challenge in orthopedics today.[2] PJI places major financial stress on the patient, the payer and healthcare systems.[1]

$60,000 – $100,000
cost per PJI treatment[1]

$1.62 billion
annual PJI cost projected by 2020[2]

What Causes PJI?

The aging population, pre-existing comorbidities such as diabetes and obesity, and antimicrobial resistance has led to an increase in generalized musculoskeletal infection, including PJI.[1] Changes in antimicrobial resistance has resulted in[1]:

- Higher rates of treatment failure
- Longer hospitalizations
- Worse overall outcomes

Biofilms Contribute to Antimicrobial Resistance

Biofilms are made up of bacteria that produce an Extracellular Polymeric Substance (EPS) to shield themselves from both mechanical and chemical attack.

- Over 90% of all bacteria exist in biofilms[4]
- EPS shielded bacteria can be 1000x more resistant to antibiotics than planktonic bacteria[7]
- Periodic release of planktonic bacteria from biofilms have been linked to chronic relapsing infections[8]

References

1. Gutowski, C. J., *et al*. The Incidence and Socioeconomic Impact of Periprosthetic Joint Infection: United States Perspective. Kendoff, D. *et al*. (eds). Periprosthetic Joint Infections: Changing Paradigms. Springer International Publishing Switzerland, 2016.
2. Kurz, S. M., *et al*. Economic Burden of Periprosthetic Joint Infection in the United States. The Journal of Arthroplasty 27(8):61-5, 2012.
3. Springer, B. CORR Insights®: The Alpha-defensin Test for Periprosthetic Joint Infection Responds to a Wide Spectrum of Organisms. Clinical Orthopaedics and Related Research. 473:2236-7, 2015.
4. Osmon, D. R., *et al*. Prosthetic Joint Infections. In Cierny III, G. et al. (eds). Orthopaedic Knowledge Update. Musculoskeletal Infection. AAOS, 2009.
5. Bedair, H. *et al*. The Mark Coventry Award: Diagnosis of Early Postoperative TKA Infection Using Synovial fluid analysis. Clinical Orthopaedics and Related Research. 469:34-40, 2011.
6. Maryam Rezapoor MS, Javad Parvizi MD, FRCS. Prevention of Perioprosthetic Joint Infection. The Journal of Arthroplasty. Volume 30, Issue 6, June 2015
7. Montana State University. (n.d.). Biofilm Basics: Section 1. Retrieved from http://www.erc.montana.edu/biofilm-basics/what_are_biofilms.html.
8. Costerton, J. W., Stewart, P. S., & Greenberg, E. P. (1999). Bacterial biofilms: a common cause of persistent infections. Science (New York, N.Y.), 284(5418), 1318-22.

ZIMMER BIOMET
Moving You Forward.™

1604.2-US-en Issue Date 2023-10