

Risk Factors for Infection in Joint Arthroplasty



Increased Risk of Infection

Risk Factors	Increased Risk of Infection	Clinical Source
Obesity	THA = 4.2x TKA = 6.7x	Surgical Site Infection Prevention and Control: An Emerging Paradigm, AAOS Surgeons Patient Safety Committee and Richard P. Evans, JBJS Am. 2009;91:2-9.
Revision Surgery	THA = 15% due to infection TKA = 25% due to infection	Bozic, Kevin J. et al. The Epidemiology of Revision Total Knee Arthroplasty in the United States. Clin Orthop Relat Res (2010) 468:45-51. Bozic, Kevin J. et al. The Epidemiology of Revision Total Hip Arthroplasty in the United States. JBJS Am. 2009;91:128-33.
Persistent Wound Drainage	THA = 42% TKA = 29%	Factors Associated with Prolonged Wound Drainage After Primary Total Hip and Knee Arthroplasty, Vipul P. Patel, Michael Walsh, Bantoo Sehgal, Charles Preston, Hargovind DeWal and Paul E. Di Cesare, JBJS Am. 2007;89:33-38.
Methicillin Sensitive Staphylococcus Aureus Colonization Rate	35% in surgeons vs 18% in high-risk patients at one high volume academic medical center in New York	Prevalence of Methicillin Sensitive Staphylococcus Aureus in Orthopedic Surgeons and their patients, Ran Schwarzkopf, Richelle C. Takemoto, Igor Immerman, James D. Slover, Joseph A. Bosco, JBJS Am. 2010;92:1815-1819.
Rheumatoid Arthritis	THA & TKA = 2-3x	Surgical Site Infection Prevention and Control: An Emerging Paradigm, AAOS Surgeons Patient Safety Committee and Richard P. Evans, JBJS Am. 2009;91:2-9.
Blisters can lead to infections and wound complications	13-35% incidence of post surgical blistering is commonly seen in TKAs and THAs	Ravenscroft MJ, Harker J, Buch KA. A prospective, randomised, controlled trial comparing wound dressings used in hip and knee surgery: Aquacel and Tegaderm versus Cutiplast. Ann R Coll Surg Engl. 2006;88:18-22.



Cost of Infection

AQUACEL[®]
SURGICAL
Hydrofiber[®] dressing

AQUACEL[™] Agⁱ
SURGICAL
Hydrofiber[®] dressing with silver

Example

Surgery	Infection Rate ¹	Annual number of joint replacements	Annual number of infections	Cost per infection ²	Total cost of infection
Primary	1.25%	500	6.2	€14,300	€88,660
Revision	2.37%	50	1.2	€14,300	€17,160
					€105,820

Your Hospital

Surgery	Infection Rate	Annual number of joint replacements	Annual number of infections	Estimated cost per infection	Estimated total cost of infection
Primary	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Revision	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
					<input type="text"/>

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Annual number of
joint replacements

Cost of one
AQUACEL[®]/
AQUACEL[®] Ag
SURGICAL DRESSING

Number of
dressings
per patient

Total annual cost of
AQUACEL[®]/AQUACEL[®]
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for your hospital

Time to onset of infection

80% in first 2 months³

36% during hospitalization, 95% within 90 days⁴

Phillips conducted a study of 10,577 patients. A deep infection occurred in 75 patients.

A superficial infection treated with anti-biotics before the deep infection developed occurred in 31 (41%) of patients.⁵

References:

1. Lecuire F. Rev Chir Orthop Reparatrice Appar Mot. 2003 Oct; 89(6): 479-86.
2. Jodra VM. Excess Length if Stay Attributable to Surgical Site Infection Following Hip Replacement: A Nested Case-Control Study. Infection Control And Hospital Epidemiology; December 2006, Vol.27, No.12.
3. Debarge R., Surgical Site Infection after total knee arthroplasty: a monocenter analysis of 923 first-intention implantation. Rev Chir Orthop Reparatrice Appar Mot. Oct 2007; 94:368-75.
4. Castella A et al. Incidence of surgical-site infections in orthopaedic surgery: a northern Italian experience. Epidemiol. Infect. Cambridge University Press. 2010.
5. Phillips JE. et al. The Incidence of deep prosthetic infections in a specialist orthopaedic hospital. A 15 year prospective survey. JBJS BR Vol.88-B, No.7, July 2006. p.945.



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