**Introduction**

- Prosthetic joint infections (PJI) are a major complication of arthroplasties. *Staphylococcus epidermidis*, normal flora of healthy skin, is a frequent cause of latent PJI.
- Intrinsic antibiotic resistance and the organism’s propensity to form biofilms on prosthetic joint materials (titanium [Ti], polymethyl methacrylate bone cement [PMMA], and ultra-high molecular weight polyethylene [UHMWPE]) complicate treatment.  
- Antibiotics are used to irrigate infected joints during revision surgery. In an effort to reduce antibiotic usage and prevent development of resistance, we examined the effectiveness of two antiseptics (povidone-iodine [PI] and chlorhexidine digluconate [CHX]) in killing *S. epidermidis* biofilms on Ti, PMMA, and UHMWPE.

**Materials & Methods**

1. Optimal dilutions and exposure times of antiseptics were determined by performing a time-kill assay and assessing biofilm viability using resazurin.  
2. Log phase *S. epidermidis* were incubated with UHMWPE, Ti, or PMMA bone cement disks (anchored together using suture material) in TSB for 24 hours with gentle rocking at 37°C. Disks were then immersed in antiseptic solutions using the optimal parameters established in the time-kill assay.  
3. Disks were rinsed with 20 ml PBS, placed in bottles containing PBS with glass beads, and then shaken for 30 minutes to dislodge biofilms.  
4. Supernatants were serially diluted ten-fold and aliquots plated in triplicate onto trypticase soy agar plates. Plates were incubated at 37°C overnight. Results expressed as the mean log_{10} CFU/mm².

**Results**

**Killing *Staphylococcus epidermidis* Biofilms on Prosthetic Joint Materials with the Antiseptic Agents Povidone-Iodine and Chlorhexidine Digluconate**

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