The prevention of orthopaedic implant and vascular graft infections.


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Abstract: The infection rate for any surgical prosthesis insertion should be less than 1% in the first postoperative year. If infection occurs the patients will lose their new found mobility, lose their independence, be hospitalized with sepsis, both local and systemic, and perhaps die. Preoperative and intraoperative measures to prevent infection are well established in orthopaedic surgery but less scientifically applied in peripheral vascular surgery. In both specialties the problem of late infection has promoted research on the protection of the peri-prosthetic environment against both bacteria and biofilm. In orthopaedics, the incorporation of various antibiotics into bone cement is well accepted in revision surgery, but still debated for the primary operation. On-going research on bioresorbable ceramics and the incorporation of antibiotics more effective against coagulase-negative staphylococci should eventually counter late infections. As HIV-positive patients increasingly present with sepsis around implanted prostheses this need will increase. In vascular surgery as the risk factors for biomaterial infection are better understood, new generations of protein-sealed grafts are permitting ionically compatible antibiotic coatings. Large well-designed clinical trials have begun and are needed to confirm the forecast of improved long-term clinical outcomes.

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