Prosthetic joint infection

0.6% - 2% per joint per year (knee>hip)

Infection rates after surgical revision are usually considerably higher (up to 40%) than after primary replacement

Types of PJI

- Acquired at implantation
  - Early presentation: within 3 months (~30%)
  - Delayed presentation: 3 months to 1 year (~40%)
- Haematogenous spread at greater than 1 year (~30%)

Types of PJI

- Early presentation:

  Acute onset: e.g. joint pain, effusion, implant site erythema and warmth, fever, cellulitis, sinus tract formation, purulent discharge.

  Virulent organisms: eg *Staphylococcus aureus*, Gram-negative bacilli

- Delayed presentation:

  Subtle presentation: persistent joint pain, fever in >50% cases.

  e.g Coagulase negative staphylococci, *Propionibacterium acnes*

- Haematogenous spread at greater than 1 year
  - Frequent sources of bacteraemia include skin, RTI, dental and UTI.

Investigations – pre-op (IDSA)

- C-reactive protein
- plain radiographs
- **Arthrocentesis and synovial fluid analysis** (total cell count; differential leukocyte count; culture for aerobic and anaerobic organisms; crystals)
- Where patient is stable, **withholding antimicrobial therapy for at least 2 weeks prior to collecting synovial fluid for culture**, increases the likelihood of recovering an organism
- **Blood cultures if fever present**, or acute onset of symptoms, or patient has a condition or pathogen (eg, *Staphylococcus aureus*) that makes the presence of a bloodstream infection more likely
- Imaging studies such as magnetic resonance imaging (MRI) and computed tomography (CT), should *not* be routinely used to diagnose PJI

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Treatment of staphylococcal PJI where prosthesis is removed

- 4-6 weeks intravenous flucloxacillin (if susceptible) or vancomycin (if resistant to oxacillin) or highly bioavailable oral antimicrobial therapy

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Treatment of staphylococcal PJI after debridement and retention

- 2-6 weeks of intravenous flucloxacillin (if S) or vancomycin (if R to oxacillin) combined with rifampicin po
- followed by rifampicin plus a companion oral drug for a total of 3 months for a THA infection and 6 months for a TKA infection
- Recommended oral companion drugs for rifampicin include ciprofloxacin
- Indefinite chronic oral antimicrobial suppression may follow the above regimen with eg cephalexin, flucloxacillin, based on in vitro susceptibility.
- Rifampicin alone for chronic suppression is not recommended

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Issues in treating PJI

- Microbiological diagnosis highly desirable
- ?removal of prosthesis
- Length of treatment
- Combination of agents
  - Rifampicin or fucidin have excellent penetration into bones/joints and can be given orally with excellent bioavailability...
  - ...but their use as monotherapy rapidly results in resistance
  - need to monitor liver function tests
- Quinolones also have good bone penetration and bioavilability po

Psoas abscess

- Suppurative collection in the psoas muscle
- Psoas muscle extends though the retroperitoneal space from the lateral borders of T12 to L5 and inserts on the lesser trochanter of the femur
- Pain may radiate to hip and thigh: suspect if no clear history of trauma/injury
- Hip pain with movement or weight bearing
- Commonly missed/diagnosed late