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| **ANMC Pediatric Acute Hematogenous Septic Arthritis/Osteomyelitis Guideline** |
| **Signs and Symptoms** | **Initial Work Up** | **Kocher Score for Septic Arthritis** Reference: Roberts KB. Urinary tract infection: clinical practice guideline for the diagnosis and management of the initial UTI in febrile infants and children 2 to 24 months. Pediatrics. 2011;128(3):595-610. |
| * Fever
* Joint warmth, swelling, and/or tenderness

(Frequency: Knee>hip>ankle>elbow=shoulder)* Refusal to bear weight or range extremity
* Pseudo-paralysis in infants
 | Labs: * CBC, ESR, CRP
* Blood culture if non-weight bearing and febrile

Radiology: X-Rays of the affected area | Assign 1 point each:* Non-weight bearing
* Temperature >101.3F (38.5 C)
* ESR >40mm/hr or CRP >2.0 mg/dL
* Peripheral WBC >12,000 cells/mm3
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| **Kocher Score Interpretation** |
| **Risk of Septic Arthritis**  | **Initial Management of Kocher Score ≥2** |
| Score = Risk of Septic Arthritis:1 = 3%2 = 40%3 = 93%4 = 99% | ***Urgent diagnosis and management is critical to prevent long-term joint damage.**** Make NPO and start IV fluids
* Collect blood culture if not already obtained
* Consult orthopedics *immediately*
* STAT MRI\* with contrast of wide region of suspicion
* Aspiration considered for joint effusion
* Surgical drainage considered for: sub-periosteal abscess, intramedullary abscess, soft tissue abscess or necrotizing fasciitis, septic joint.

 **-**If NO SURGERY: consider needle aspiration of joint effusion or area of osteomyelitis* Send sample for cell count, gram stain, and culture.
* **Initiate empiric antibiotics as soon as culture is obtained.**
* Admit to the hospital including infectious disease consult
* Narrow to targeted antibiotic therapy based on specimen results
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| **Initial Management of Kocher Score ≤1** |
| Candidate for close outpatient observationIbuprofen 10 mg/kg q6h PRN painRepeat workup if no improvement or wosening in 2-3 days |
| Synovial fluid WBC Counts Typically Seen in Septic Arthritis:  >25,000cells/microL (hip), >50,000cells/microL (all other joints); PMN predominance |
| **Antibiotic Selection** |
| Common Organisms: *Staphylococcus aureus,* Beta-hemolytic Streptococci, *Haemophilus influenza a, Kingella kingae* |
|  | **Preferred Therapy** | **Type I PCN allergy** | **IV to PO Conversion Criteria** |
| **Empiric therapy**¥ | **Vancomycin** – initial dose 15 mg/kg/dose IV q6h (Max 4g/day; pharmacy will manage dosing)**AND****Ceftriaxone** 100 mg/kg/day IV q24h (Max 2g/dose) | **Vancomycin** initial dose 15 mg/kg/dose IV q6h (Max 4g/day; pharmacy will manage dosing)**AND****Gentamicin** 5-7.5 mg/kg/day IV (pharmacy will manage dosing) | * Afebrile x48h
* CRP <3 mg/dL
* Susceptibility of organism reveals adequate oral therapy option
* No further surgery planned
 |
| **Treatment Duration and Follow-up** |
| **Septic Arthritis** | **Osteomyelitis** |
| * At 3 week visit: CBC, ESR, CRP and x-ray
* If evidence of osteomyelitis by x-ray or ESR >20 mm/hr or CRP >1 mg/dL, extend therapy to 6 weeks
* End of therapy: Stable x-ray, ESR <20mm/hr, CRP <1mg/dL
 | * At 3 week visit: CBC, ESR, CRP
* At 6 week visit: CBC, ESR, CRP and x-ray
* End of therapy: Stable x-ray, ESR <20mm/hr, CRP <1mg/dL
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| **Considerations** |
| \* If sedation required for MRI, with appropriate coordination MRI and surgery can often be performed under one anesthesia If delay to antibiotics of >6 hours, consider empiric antibiotics in discussion with orthopedics and pediatrics¥Empiric antibiotics selected to *cover MRSA, MSSA, beta-hemolytic streptococci, Haemophilus influenza a, Kingella, and enteric GNRs**Antimicrobial Stewardship Program Approved 2018; Updated April 2019* |

