Prospective Study Into Short-term Intravenous Antibiotic Treatment of Acute Septic Arthritis and Acute Osteomyelitis In Children

Aiman Muneer1, Rajeev Kanwar1, Christopher E. Bache1, H.Kerr Graham2
1Paediatric Orthopaedics, Birmingham Children’s Hospital, Birmingham, United Kingdom; 2Paediatric Orthopaedics, Melbourne Children’s Hospital, Melbourne, VIC, Australia

**Introduction:** Septic Arthritis & osteomyelitis has traditionally been managed by intravenous antibiotics for 4 to 6 weeks. This requires a prolonged in patient stay, inconvenience to parents, morbidity and unnecessary cost. A number of authors have suggested that shortened course of intravenous antibiotics 7-10 days are effective.

**Materials and Methods:** In 2001 we started to prospectively evaluate a shortened 3 day of intravenous antibiotic regime. We prospectively treated 36 cases of acute osteomyelitis and 30 cases of acute septic arthritis in children. These were confirmed by positive blood culture, positive aspirate culture, raised WCC in joint aspirate for septic arthritis or positive bone scan/culture for osteomyelitis. These patients were treated with a shortened course (3 days) of intravenous antibiotics following surgical drainage when required. Serial measurements of inflammatory markers and clinical status were recorded. On Day 4 of admission if clinical and biochemical parameters improved patients commenced high dose oral antibiotics. If no improvement they continued IV abx and consideration for repeat washout given. Patients discharged with three week course of antibiotics. Endpoint analysis of duration of IV administration, inpatient stay, readmission/ reoccurrence was undertaken.

**Results:** 43 of the 66 (66%) patients received were discharged by Day 5 after receiving 3 full days of intravenous antibiotics. Mean in-patient stay was 5.5 days. There was one re-admission for intolerance of high dose antibiotics. 6 septic patients required a repeat washout (Day 4-7 of admission). At 3 months there were no patients with ongoing infection.

**Discussion:** We suggest the vast majority of acute suppurative skeletal infection can be managed safely with shortened course of intravenous and oral antibiotics following surgical drainage (in the case of intra articular infection). About 25% of patients will need longer courses of antibiotics and possibly repeat washout. This subgroup can be identified by careful clinical evaluation and measurement of inflammatory markers.

**References:**


