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Challenges In Managing Paediatric Osteomyelitis In The Developing World: Experience Of A Tertiary Referral Centre In Tanzania

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Introduction: Delay in the presentation and treatment of acute osteomyelitis due to a lack of availability of primary and secondary healthcare services in the developing world often results in progression to chronic disease. The literature on paediatric osteomyelitis in the developing world is sparse, and further characterisation of the condition in a range of countries is important for guiding local service delivery. Kilimanjaro Christian Medical Centre (KCMC) is a tertiary referral centre in Tanzania serving a population of 11 million people.

Objectives: 1) To assess the demographics of paediatric patients admitted to KCMC with osteomyelitis
2) To determine the stage of osteomyelitis at the time of presentation to KCMC
3) To characterise organisms responsible and their antibiotic sensitivities
4) To assess whether there is an association between time to treatment and outcome, as defined by recurrence of infection

Methods: We retrospectively identified all children aged 18 and under who were admitted to KCMC between 1st January 2008- 31st December 2010 with a recorded diagnosis at discharge of osteomyelitis (ICD-10 classification system) through a manual search of admission logbooks. The notes for these patients were collected and the following information obtained: age, sex, nature of admission (direct or referred from a district hospital), site of osteomyelitis, stage of osteomyelitis (defined as either acute, acute with x-ray changes, chronic localised or chronic systemic), time from symptom onset to presentation at KCMC, history of trauma, duration of stay at KCMC, treatment given, follow up time and outcome, organisms isolated and antibiotic sensitivities.

Results: 63 patients were identified, notes available for 55: 40 males, 15 females, mean age of 11 years. The most common sites were the tibia and femur with other sites including the skull, humerus and foot. At presentation, 8 cases were categorised as acute, 5 as acute with x-ray changes, 40 as chronic localised and 2 as chronic systemic.

11 patients were treated with antibiotics only, 11 with incision and drainage and 30 with surgical debridement. Bacterial cultures were available in 11 cases: all S.Aureus tested were gentamicin-sensitive but at least one patient had S.Aureus resistant to cloxacillin, erythromycin, co-trimoxazole, tetracycline or a combination of these.

Of 29 patients attending follow-up, 20 made a full recovery and 9 developed
recurrence of infection. 8 out of 9 with recurrence had time from symptom onset to presentation of >3 months. 12 out of 13 with time from symptom onset to presentation of <2 months did not develop recurrence.

Conclusions: Delayed presentation of osteomyelitis is associated with recurrence of infection. Major challenges facing this centre include failure to attend follow-up and lack of availability of bacterial cultures. This is, to our knowledge, the second largest study of paediatric osteomyelitis in the developing world.