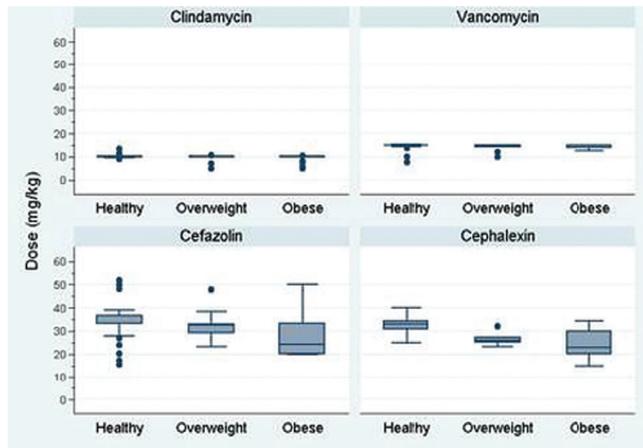


optimize first-generation cephalosporin dosing in obese children suffering from AHO. These data also call for future studies to determine the clinical outcomes in obese children with AHO in relation to dosing adequacy.



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### 200. Septic Arthritis of Native Joints: Are Outcomes Better with Medical or Surgical Management?

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**Background.** There is limited evidence to support medical vs. surgical management of native joint septic arthritis (SA) with no established guidelines for care. Advantages of medical (antibiotics with or without serial needle aspiration) and surgical (arthroscopic or arthrotomic drainage) treatments are unknown.

**Methods.** We conducted a single-center retrospective chart review of veterans diagnosed with SA over 10 years at the West Haven VA Hospital. Demographic, clinical, laboratory, imaging, and outcome data were extracted. Cases meeting inclusion criteria (positive culture or synovial fluid WBC >50,000) were stratified by surgical vs. medical management. Evaluated outcomes included joint recovery, time to recovery, sterilization of synovial fluid, duration of antibiotics, length of stay, recurrence of SA, and mortality. Odds ratios were calculated by multivariate analyses for correlation of outcomes to risk factors and to management approach taken.

**Results.** Sixty-one cases of SA met inclusion criteria. Average age was 67, 95% of patients were men, 89% White, 11% Black, 43% diabetic, and 43% had preexisting joint disease. 69% (41/61) of cases were managed surgically. Average length of stay for surgical group was 20 days compared with 14 days for medical group ( $P = 0.28$ ). Duration of antibiotics was longer in surgical group (60.3) than medical group (35.4), ( $P = 0.09$ ). *S. aureus* was the most common pathogen isolated (56%), followed by *Streptococcus* (11%) and gram-negative organisms (8%). Six (10%) patients had culture-negative SA. Mortality rate at 1 year was 3.2%. Full recovery of joint function at 1 year was achieved equally in both groups ( $P = 1.0$ ), by 15/20 medically managed (75%) and 31/41 surgically managed (76%), with no significant differences by pathogen. Full recovery at 3 months was noted in 10/20 (50%) medically managed vs. 8/41 (19.5%) surgically managed ( $P = 0.02$ ). Poor outcomes were not associated with joint location, pathogen, type of joint drainage, number of days to OR, or duration of antibiotics. Blacks had increased odds of poor outcome (OR 9.5; 95% CI 1.3–65.4).

**Conclusion.** We detected no statistically significant difference in outcomes at 12 months between patients managed medically vs. surgically for native joint septic arthritis. Full recovery at 3 months was significantly higher among the medical group.

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### 201. Assessment of Musculoskeletal Infection Society (MSIS) Diagnostic Criteria as Predictors of Treatment Success in Hip Arthroplasty Infections Treated with Two-Stage Exchange

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**Background.** Prosthetic joint infection (PJI) is a grave complication of total hip arthroplasty (THA). Predicting outcome is difficult. Musculoskeletal Infection Society (MSIS) criteria are sensitive and specific for the diagnosis of PJI. In prior work, we systematically studied the value of each MSIS criterion as a prognostic marker among

a large cohort of patients with infected hip and knee arthroplasty treated with debridement, antibiotics, and implant retention (DAIR) at our specialized orthopedic hospital. We found that sinus tract drainage and culture positivity predicted explantation within 2 years of DAIR; the minor MSIS criteria were not predictive. Here, we sought to evaluate the utility of MSIS criteria in predicting outcomes of infected THR PJI treated with two-stage exchange arthroplasty. We sought to evaluate whether MSIS criteria can predict outcome of infected THR PJI treated with two-stage exchange arthroplasty.

**Methods.** A retrospective cohort of PJI from 2007 to 2014 treated with two-stage exchange was identified via an administrative database. Two-year implant retention was the primary outcome. Collected data included demographics and comorbidities, duration of symptoms, implant age, and pathogen. Continuous variables were assessed using the Mann-Whitney  $U$ -tests and categorical variables using the  $\chi^2$  test and Fisher's exact test when appropriate.

**Results.** One hundred and thirty patients who underwent two-stage exchange for THA PJI meeting MSIS criteria were identified. Ninety percent remained infection free after 2 years of observation. Neither of the major criteria [the presence of sinus drainage ( $P = 0.5416$ ), and >1 positive culture ( $P = 0.1052$ )], nor any of the minor criteria, reached statistically significant association with treatment outcome.

**Conclusion.** Individual MSIS diagnostic criteria, which do have prognostic utility in hip and knee PJI treated with DAIR, may not be powerful predictors of outcome of hip PJI after two-stage exchange, likely in part because of the high success rate of this procedure.

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### 202. Factors Associated with Success in Revision Surgery for Infected Hip and Knee Arthroplasties

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**Background.** Patients with prosthetic joint infections (PJIs) often fail treatment. We aimed to describe the characteristics and outcomes of PJIs managed at a tertiary institution in Canada.

**Methods.** We assembled a cohort of patients undergoing surgical revision for hip or knee PJIs from January 1, 2010 until December 31, 2014 at our referral hospital by searching procedure descriptions from operative listings. Patient characteristics were abstracted by chart review. Treatment failure (TF) was defined by PJI recurrence requiring surgery, receipt of suppressive antimicrobials, amputation, excision or death.

**Results.** 243 individuals with a PJI undergoing a revision surgery were included. Median age was 69 years, 111 (46%) were males, 118 (49%) involved hips, 125 (51%) were knees, incision and drainage was performed in 53 (22%), a two-stage procedure was undertaken in 168 (69%), and a one-stage procedure in 18 (7%). Most PJIs were monomicrobial (50%); with coagulase negative staphylococci (35%) and *Staphylococcus aureus* (18%) the most common. TF occurred in 85/171 (47%): 53 (62%) required revision surgery, 23 (27%) chronic suppressive antimicrobials, 5 (6%) amputation, and 4 (5%) died (Table 1). On univariate analysis incision and drainage was associated with failure (OR 2.8, 95% CI 1.3–5.8,  $P = 0.002$ ) while a two-stage procedure (OR 0.4, 95% CI 0.2–0.8,  $P = 0.009$ ) and chronic symptoms (OR 0.4, 95% CI 0.2–0.8,  $P = 0.008$ ) were protective. No risk factors for TF were identified on multivariable analysis.

Table 1. Characteristics and PJI treatment outcome.

Characteristic	Success (n = 96)	Failure (n = 85)	P
Age (median, IQR)	71.5 (60–76)	68 (62–76)	0.88
Male sex	50 (52%)	33 (39%)	0.07
Joint type			
Hip	46 (48%)	44 (52%)	0.60
Knee	50 (52%)	41 (48%)	
Indication			
Osteoarthritis	63 (66%)	57 (67%)	0.29
Trauma	13 (14%)	14 (17%)	
Rheumatoid arthritis	4 (4%)	9 (11%)	
Other	16 (17%)	5 (6%)	
Prosthetic joint			
Primary	38 (40%)	33 (39%)	0.92
Revision	58 (60%)	52 (61%)	
Procedure			
Incision and drainage	13 (14%)	28 (33%)	0.002
Two stage	72 (75%)	48 (56%)	0.009
One stage	9 (9%)	7 (8%)	0.79
Knee spacer type			
Dynamic	22 (58%)	10 (42%)	0.21
Static	16 (42%)	14 (58%)	
Symptoms >21 days	83 (87%)	60 (71%)	0.008

**Conclusion.** PJIs are challenging to eradicate. New treatment paradigms are needed.

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