Results. 159 patients who underwent 2-stage exchange for TKA PJI meeting MSIS criteria were identified. 116 patients (73%) remained infection-free after two years of observation. Neither of the major criteria [presence of sinus drainage ($P = 0.6$); >1 positive culture ($P = 1.0$)], nor any of the minor criteria (individually or in composite) reached statistically significant association with treatment outcome.

Conclusion. Individual MSIS diagnostic criteria, which have prognostic utility in TKA PJI treated with DAIR, are not powerful predictors of outcome of TKA PJI after two-stage exchange.

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311. Low Rate of Microbiologic Relapse in Two-Stage Exchange for Knee Prosthetic Joint Infections

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Background. Prosthetic joint infection (PJI) is a grave complication of total knee arthroplasty (TKA). Historically, two-stage arthroplasty exchange has been considered to be the definitive approach to eradicating infection and preserving joint function. However, patients are increasingly presenting with higher rates of comorbidities traditionally associated with poorer orthopedic surgical outcome, including advanced age, obesity and diabetes. We investigated whether two-stage exchange remains effective for TKA PJI in this population, and evaluated the microbiology of repeat infections.

Methods. A retrospective cohort of TKA PJI treated with two-stage exchange was identified by query of hospital coding records from 2009 to 2014, with subsequent chart review. The primary endpoint was defined as prosthesis retention for 2 years from reimplantation. Microbiologic relapse was defined as a recurrence of a previously treated organism. Descriptive statistics were completed using the Fisher's exact test for categorical variables and the Mann–Whitney *U* test for continuous variables.

Results. One hundred fifty-nine patients who underwent two-stage exchange for a TKA PJI meeting Musculoskeletal Infection Society International Consensus criteria were identified. The average age was 66 years, and 37% were female. One hundred forty-one underwent reimplantation; 24 of these (17%) had recurrent infection. Of the 24 patients who developed infection after reimplantation, only four relapsed with the same microbe; the other 20 (83%) were diagnosed with new, microbiologically distinct organisms. Thee of these four recurrences were due to *Staphylococcus aureus* infection. The likelihood of microbiologic relapse was low among reimplanted patients (3%). In univariate analysis, no associations were found between outcome and age, comorbidities, or BMI.

Conclusion. Two-stage exchange arthroplasty for TKA infection is associated with a very low rate of microbiologic relapse. However, those patients able to undergo reimplantation remain at risk of subsequent infections with new microbes. It remains important to continue to modify risk factors in patients who have undergone a two-stage exchange for PJI.

Disclosures. **All authors:** No reported disclosures.

312. Comparison of Short Course and Long Course of Antibiotics in Patients With Osteomyelitis: A Systemic Review and Meta-analysis

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Background. Current guidelines for treatment of osteomyelitis (OM) suggest antibiotics for 3–6 weeks. However, recent studies provided conflicting evidence about the benefits of the prolonged use of antibiotics. We conducted a systemic review and meta-analysis to assess the outcomes of short- and long-term antibiotics in patients with OM.

Methods. We used three queries to retrieve literature of vertebral OM, chronic OM, and diabetic foot OM from PubMed and Embase databases until December 2017. Each query comprised medical subject headings, title/abstract keywords, and exclusion terms. Two reviewers independently screened literature for three rounds and disagreements were resolved by a third reviewer. Quality of a cohort study and that of a randomized control trial (RCT) were assessed by Newcastle-Ottawa Quality Assessment Form and a modified Jadad scale, respectively.

Results. A total of 7,192 studies were retrieved (Figure 1). Eleven observation studies and five RCTs were included for analysis, including seven articles about vertebral OM, two chronic OM, five pediatric OM, and two diabetic foot OM. Of the 11 observational studies, only five were graded as good or fair quality. Thirteen studies demonstrated no significant difference in outcomes between short- and long-term of antibiotics, while three studies showed favorable outcomes in patients taking long-term antibiotics. The aggregate odds ratio (OR) of mortality was 0.46 (95% CI, 0.21, 1.02) for observational studies and 0.90 (95% CI, 0.58, 1.41) for RCTs, showing no significant benefits of long-term antibiotics in patients with OM (Figure 2). In patients with vertebral OM, outcomes were comparable between short- and long-term of antibiotics (OR 0.51, 95% CI, 0.26, 1.01). In seven studies where only intravenous (IV) antibiotics were used, there was no significant benefit of long-term antibiotics (OR 1.12, 95% CI, 0.68, 1.83). However, in the remaining nine studies where antibiotics were transitioned from IV to oral form, there was marginal benefit of long-term oral antibiotics (OR 0.44, 95% CI, 0.22, 0.91).

Conclusion. Both RCTs and observational studies demonstrated that long-term antibiotics use did not generate significantly better outcome as compared with short-term antibiotics in patients with all-cause or a specific type of OM.

Figure 1. Flow diagram for selection of articles for systemic review

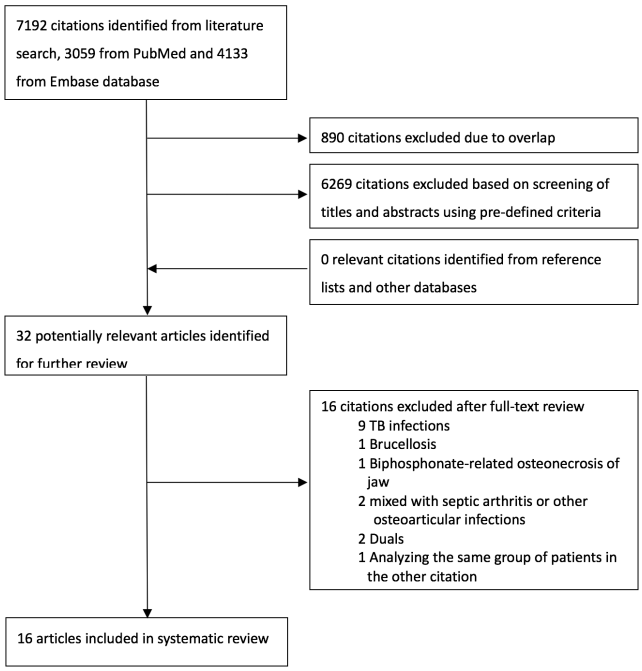
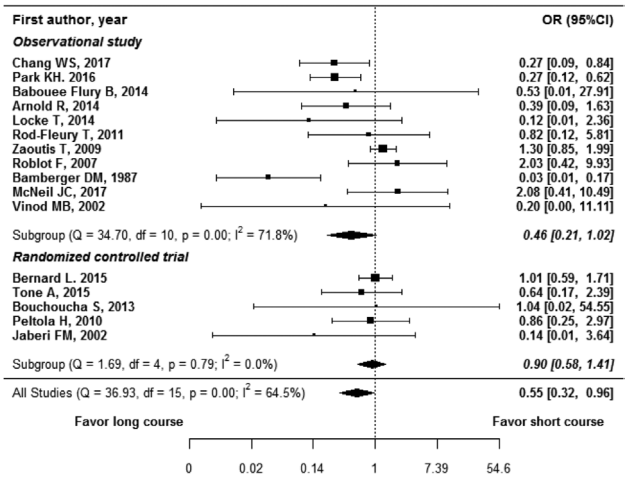


Figure 2. Forest plot



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