

Figure 1

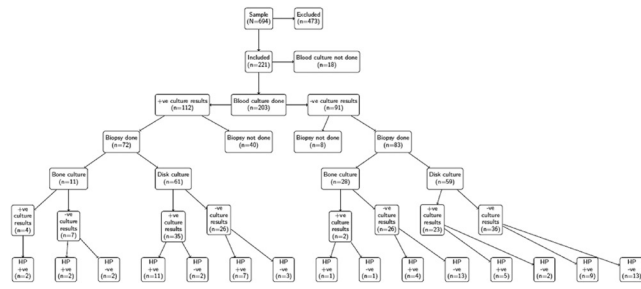
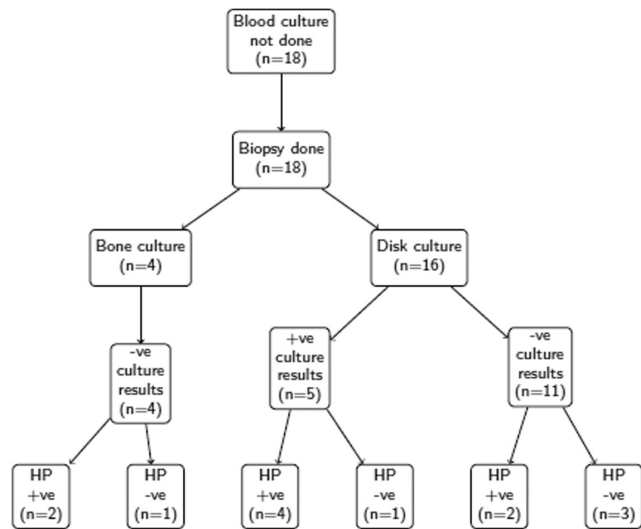


Figure 2



Disclosures. All authors: No reported disclosures.

308. Identification of Prosthetic Hip and Knee Joint Infections in Administrative Databases

Christopher Kandel, MD¹; J. Roderick Davey, MD²; Nick Daneman, MD, MSc³ and Allison McGeer, MD, MSc⁴; ¹Department of Infectious Diseases, University of Toronto, Toronto, ON, Canada, ²Department of Surgery, University of Toronto, Toronto, ON, Canada, ³Division of Infectious Diseases and Clinical Epidemiology, University of Toronto, Toronto, ON, Canada, ⁴Laboratory Medicine and Pathobiology, University of Toronto, Toronto, ON, Canada

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Background. Canada lacks a prosthetic hip and knee joint infection (PJI) registry, leaving active surveillance to be orchestrated by individual hospitals, which is limited by cost and narrow scope. Administrative databases are potentially an ideal instrument for infection surveillance, but detection algorithms relying solely on PJI diagnostic codes alone have been hampered by low specificity. There is a need to develop improved strategies to efficiently and accurately identify PJIs using health administrative databases.

Methods. Combinations of International Classification of Disease, Tenth Revision, diagnostic and procedure codes were used to create testing cohorts among individuals treated at two institutions in Toronto, Ontario, from April 1, 2015 until March 31, 2016. These cohorts were compared with a reference standard of PJIs, which were identified by chart reviews of every individual who underwent a hip or knee revision operation at these institutions during the study period. The primary outcomes were the performance characteristics of each algorithm.

Results. Over the 1-year study period, there were 471 revision operations for 405 patients, of which 155 (33%) were performed for the treatment of a PJI. Of the 405 individuals, 108 (27%) had a PJI as the surgical indication; there were 57 (53%) two-stage procedures, nine (8%) single-stage procedures, 34 (31%) incision and drainage procedures with implant retention, and eight (7%) excisional arthroplasties. The combination of a revision operation code plus a PJI diagnosis code was the most robust detection method: sensitivity 0.86 (95% confidence interval, 0.79–0.91) and specificity 0.99 (0.98–1.00). Coupling codes for a revision operation and insertion of a peripherally inserted central catheter yielded a sensitivity of 0.45 (0.37–0.53) and specificity of

1.00 (0.98–1.00). PJI codes alone had a sensitivity of 1.00 (0.86–1.00) and specificity 0.50 (0.23–0.77).

Conclusion. The combination of a revision operation procedure code and a PJI diagnosis code is sensitive and specific for the detection of a PJI in administrative databases. This is a promising avenue for national PJI surveillance and has the potential to facilitate future research in the prevention and management of PJIs.

Disclosures. All authors: No reported disclosures.

309. The Infected Spacer: The Impact of Spacer Exchanges and Debridements on Two-Stage Exchange Arthroplasty Outcomes

Michael Henry, MD¹; Celeste Russell, MPH¹; Allina Nocon, PhD²; Geoffrey Westrich, MD²; Barry Brause, MD¹ and Andy Miller, MD³; ¹Hospital for Special Surgery, New York, New York, ²Complex Joint Reconstruction Center, Hospital for Special Surgery, New York, New York, ³Infectious Disease, Weill Cornell Medical College, New York, New York

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Background. Prosthetic joint infection (PJI) is a grave complication of total joint arthroplasty (TJA). Data on patients who require further surgery for infection between explantation and reimplantation (i.e., while the spacer is in place) are limited. We investigated the effect of spacer exchange or irrigation and debridement (I&D) on clinical outcomes in patients undergoing two-stage exchange for PJI.

Methods. A retrospective cohort of hip and knee PJI treated with two-stage exchange was identified by query of hospital coding records from 2009 to 2014, with subsequent chart review. All cases met Musculoskeletal Infection Society International Consensus criteria for PJI. The primary endpoint was defined as prosthesis retention for 2 years from reimplantation. Spacer intervention was defined as undergoing a spacer exchange or I&D for infection purposes prior to reimplantation. Descriptive statistics were completed using the Fisher's exact test for categorical variables and the Mann-Whitney U test for continuous variables.

Results. Three hundred patients undergoing two-stage exchange for TJA PJI were identified (141 hips and 159 knees). The average age was 66 years and 42% were female. Forty-two patients (14%) underwent spacer intervention, 22 knees (14%), and 20 hips (14%). 34 of these underwent spacer exchange. Of the 42 patients with spacer intervention, 28 (67%) met the primary endpoint. In univariate analysis, there was an association between spacer intervention and outcome ($P = 0.02$). Comorbidities including age, sex, and BMI were not associated with outcome. The association appeared more pronounced among the TKA subgroup. Patients who underwent spacer intervention were 2.1 [CI: 1.11–4.42] times more likely to fail than TKA patients who did not require such an intervention ($P = 0.02$).

Conclusion. We present 2-year outcomes on a large cohort of TJA PJI treated with two-stage exchange arthroplasty. Patients requiring spacer exchange or I&D after TJA explantation have worse outcomes than their counterparts who do not. Because patients who fail two-stage exchange arthroplasties often proceed to arthrodesis or amputation, our findings may help guide clinical decision-making prior to reimplantation.

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310. Assessment of MSIS Diagnostic Criteria as Predictors of Treatment Success in Total Knee Arthroplasty (TKA) Infections Treated With Two-Stage Exchange

Andy Miller, MD¹; Celeste Russell, MPH²; Allina Nocon, PhD³; Geoffrey Westrich, MD² and Michael Henry, MD²; ¹Infectious Disease, Weill Cornell Medical College, New York, New York, ²Hospital for Special Surgery, New York, New York, ³Complex Joint Reconstruction Center, Hospital for Special Surgery, New York, New York

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Background. Prosthetic joint infection (PJI) is a grave complication of total knee arthroplasty (TKA); 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 two 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 TKR PJI treated with two-stage exchange arthroplasty. We sought to evaluate whether MSIS criteria can predict the outcome of infected TKR PJI treated with two-stage exchange arthroplasty.

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. Collected data included demographics and comorbidities, duration of symptoms, implant age, and pathogen. All cases met Musculoskeletal Infection Society International Consensus criteria for PJI. The primary endpoint was defined as prosthesis retention for 2 years from reimplantation. Descriptive statistics were completed using the Fisher's exact test for categorical variables and the Mann-Whitney U test for continuous variables.