316. Joint Initiative Between Infectious Diseases and Podiatry in Outpatient Settings Improves Diabetic Foot Infection Patients' Compliance and Outcomes

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Background. Many patients with diabetic foot infections (DFI) face challenges with keeping their follow-up appointments. This can result in recurrent DFI. A joint, Infectious Diseases-Podiatry clinic (JIDPC) that an Infectious Diseases (ID) physician and a Podiatrist see their patients together in wound care center once a week was initiated in January 2017. This study was designed to investigate if JIDPC can improve patient compliance and outcomes.

Methods. A retrospective analysis of the patients admitted to Wheeling Hospital with DFI from March 2013 to December 2017 and required post discharge follow-up by ID and Podiatry was performed. Initially, they were followed by ID and Podiatry in their clinics separately (preintervention group). Beginning January 2017, they were followed together at the JIDPC (postintervention group). Recurrent infection, mortality, and lost to follow-up were compared between the two groups using logistic regression models adjusting for age and sex.

Results. Among 119 patients, 85 patients were in preintervention group and 34 patients were in postintervention group. Surgeries were performed in 47.1% of preintervention group and 85.3% of postintervention group ($P < 0.001$) (Table 1). Risk of recurrence in 6 months was significantly higher in preintervention group (odds ratio [OR] = 3.14 [1.07, 9.24]), but with further adjustment for surgery, *P*-value was 0.05 (OR = 3.08 [0.98–9.62]). Preintervention group was more likely to be lost to follow-up (OR = 3.67 [1.16–11.59]), but the association was attenuated with further adjustment for surgery (OR = 2.17 [0.64–7.41]). Re-admission in 90 days and mortality rate were not significantly different.

Conclusion. Implementation of JIDPC would be effective to decrease the incidence of recurrent infections among DFI.

Table 1: Clinical Characteristics and Comparison Between Pre- and Postintervention Groups

	Preintervention Group (n = 85)		Postintervention Group (n = 34)		
Characteristic	No.	(%)	No.	(%)	*P*-Value
Male sex	66	77.7	26	76.5	0.890
Age ≥65	30	35.3	17	50.0	0.138
Osteomyelitis	66	77.7	28	82.4	0.569
Surgery	40	47.1	29	85.3	<.001
Peripheral vascular disease	28	33.0	11	32.4	0.859
Kidney dysfunction	34	40.0	12	35.3	0.634
Poorly controlled diabetes	37	43.5	14	41.2	0.815
Lost follow-up	27	31.8	4	11.8	0.025
Re-admission	27	31.8	12	35.3	0.711
Death	4	4.7	2	5.9	1.000
Recurrent Infection in 6 months	31	36.5	5	16.7	0.044

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317. Risk Factors for Fungal Prosthetic Joint Infections (PJIs)

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Background. Fungal PJIs are rare and often associated with poor outcome. Risk factors are not well described and thus, we sought to determine such risks among patients cared for at two large academic hospitals.

Methods. This was a retrospective case–control study among patients with PJI from 2006 to 2016. Each fungal PJI case was matched 1:1 with a bacterial PJI control for joint location (hip, knee, and shoulder) and year of diagnosis. We compared demographics (age, sex, and race), co-morbid conditions (BMI, diabetes, immunosuppression, renal disease, and antibiotic use), and clinical characteristics (joint age, wound factors, laboratory data, previous joint surgeries, and previous PJI) between fungal and bacterial PJI groups using chi square/Fisher's exact or Wilcoxon rank-sum test. Risk factors statistically ($P < 0.05$) or clinically significant were included in a multivariable logistic regression (MVR) model in stepwise fashion (SAS 9.4, Cary, North Carolina).

Results. Forty-one fungal PJI occurred over the study period and 61% were due to *Candida albicans*. Median age was 64.7 years, 51% were females, and 87% were White. The hip was involved in 51.2%, followed by the knee (46.3%), and shoulder (2.4%). There were no significant differences in joint age or co-morbid conditions. Compared with bacterial PJI, those with fungal PJI were more likely to have received antibiotics within the past 3 months (70.7% vs. 34%, $P = 0.001$), had wound drainage lasting more than 5 days (48% vs. 9%, $P = 0.0002$), had a lower median CRP (2.95 mg/dL vs. 5.99, $P = 0.013$) and synovial fluid wbc count (13,953 cells/mm^3 vs. 33,198, $P = 0.007$), and a higher proportion of prior two-stage exchanges (82.9% vs. 53.6%, $P = 0.008$). After MVR, controlling for the center, presence of wound drainage for more than 5 days (OR, 7.3; 95% confidence interval [CI], 2.02–26.95) and receipt of antibiotics within the past 3 months (OR, 3.4; 95% CI, 1.2–9.3) were factors significantly associated with fungal PJI.

Conclusion. In our study, *Candida albicans* was the most common species in fungal PJIs. The presence of wound drainage for more than 5 days and receipt of antibiotics within the past 3 months were independent risk factors for fungal PJI among a cohort of PJI patients.

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318. Treatment Outcomes of Prosthetic Joint Infections: An Internal Assessment of Adherence to Best Practice Guidelines

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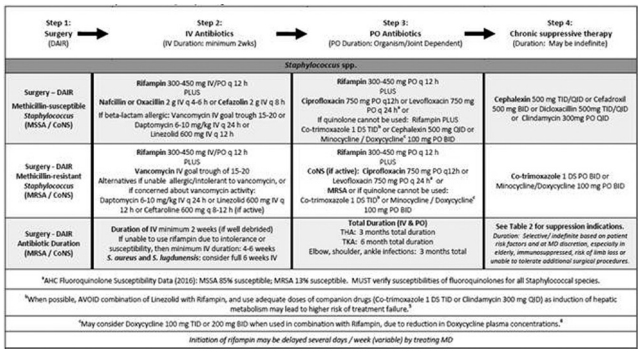
Background. The impact of prosthetic joint infections (PJI) on patient outcomes and health systems is extensive. Patients with PJI may receive nonpreferred antibiotic therapy due to ease of administration, cost, and drug interaction profile. Our objective was to compare treatment of PJI to internal guideline-recommended therapy and assess treatment outcomes.

Methods. To reduce heterogeneity of PJI treatment within a large, integrated health system, our antimicrobial stewardship program and orthopedic surgeons created an internal best-practice guideline for treatment of PJI based on published literature. The guideline is organism and surgery specific (Figure 1). Patients who had total knee arthroplasty (TKA) or total hip arthroplasty (THA) and subsequently developed PJI from July 2016 to June 2017 were identified retrospectively. Recurrent infections were defined as recurrence of primary infections or new infections with other organisms. Rates between patients treated with guideline-concordant and guideline-discordant regimens were compared.

Results. Among 36 TKAs complicated by PJI, fewer patients who received guideline-concordant therapy experienced recurrent infection than patients who received guideline-discordant therapy (1 of 16 patients [6.25%] vs. nine of 20 patients [45%], $P = 0.0219$). Among 25 THAs complicated by PJI, there was a trend toward fewer recurrent infections when patients received guideline-concordant therapy (2 of 12 patients [16.7%] vs. 5 of 11 patients [45.5%], $P = 0.1775$). Common deviations from the guidelines included daptomycin use for methicillin-susceptible *Staphylococcus* spp. with implant retention due to ease of administration in outpatient settings and avoidance of rifampin due to tolerability or drug interactions.

Conclusion. Deviation from treatment guidelines for PJI following TKA and THA may increase the risk of recurrent infection. Barriers to utilizing guideline-recommended antibiotics in the outpatient setting should be addressed. Institutions should develop internal consensus on PJI treatment with prospective surveillance.

Figure 1. Treatment recommendations for *Staphylococcus* spp. After Debridement and Implant Retention (DAIR)—one element of the comprehensive internal guideline



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319. Is Chronic Vertebral Disk Infection With Low Virulence Bacteria a Common Cause of Back Pain?

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Background. In 1998 Modic described changes in vertebral body marrow with magnetic resonance imaging, and related those changes to pathological findings in the