

**215. Multidrug-Resistant Gram-Negative bacilli Prosthetic Joint Infection: A Worrisome Scenario**

Taiana Ribeiro, Medical<sup>1</sup>; Gisselle Klautau, Md<sup>2</sup>; Mauro Salles, Md<sup>2</sup> and Infectology Santa Casa-SP; <sup>1</sup>Infectology, Santa Casa de São Paulo, Sao Paulo, Brazil, <sup>2</sup>Santa Casa de São Paulo, Sao Paulo, Brazil

**Session:** 45. Clinical: Bone and Joint Infection  
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**Background.** The spectrum of the microbial etiology of prosthetic joint infections (PJIs) is changing, with a higher occurrence of Gram-negative bacilli (GNB) nowadays. In Latine America, GNB infections are usually caused by strains that produce multiple resistance mechanisms, making antimicrobial treatment increasingly difficult, especially for these biofilm-associated infections. We aimed to demonstrate the higher frequency of PJIs caused by GNB.

**Methods.** We performed a retrospective observational study with adult patients with a diagnosis of knee and hip PJIs. Patients included were submitted to an exchange of total hip and knee prostheses between September 2010 and December 2016, in two Brazilian hospitals. It was included only patients with microbial diagnosis performed using either sonication fluid cultures of retrieved implant and conventional tissue cultures of periprosthetic tissues. The Infectious Disease Society of America (IDSA) definition was used to establish the diagnosis of PJIs. Multidrug-resistant (MDR) organisms were defined as acquired resistance to at least one agent in three or more antimicrobial categories.

**Results.** Were included 130 adult patients with a median age of 65.5 years, in which 60% were female. Infected hip arthroplasty was more frequent than knee infections (69% vs. 31%) and 61% were classified as late infection according to Zimmerli's classification. One hundred twenty-three microorganisms were isolated on the tissue and sonication fluid culture. Despite the Coagulase-negative *Staphylococci* was the predominant microorganism (35%), Gram-negative bacilli had an expressive frequency of 30% of positivity on culture. Amongst them, 23% showed resistance to carbapenems and 38% were MDR-bacteria. The predominant microorganism was *Pseudomonas* spp., followed by *Enterobacter* spp., *Acinetobacter* spp., *Escherichia coli*, *Stenotrophomonas maltophilia* and *Klebsiella pneumoniae*, *Proteus* spp. and *Serratia marcescens*. There was no statistical difference on the resistance profile of the GNB isolated on tissue and sonication fluid culture.

**Conclusion.** We have shown an alarming high frequency of MDR-Gram-negative bacilli PJIs in two Brazilian centers, performing microbial diagnosis using sonication and tissue cultures.

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

**216. Clinical Outcomes of Antipseudomonal vs. Non-Antipseudomonal Therapy in Patients with Osteomyelitis**

Jeffrey W. Jansen, PharmD<sup>1</sup> and Ryan P. Moenster, PharmD, FIDSA<sup>1,2</sup>; <sup>1</sup>Pharmacy Services, VA Saint Louis Health Care System, Saint Louis, Missouri, <sup>2</sup>Pharmacy Practice, St. Louis College of Pharmacy, Saint Louis, Missouri

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**Background.** Osteomyelitis (OM) in diabetics is frequently a polymicrobial infection that rarely involves *Pseudomonas* (4–5% of cases). Bone cultures have a low-positive yield of 34–50% and, as a result, many patients receive antimicrobial regimens which include antipseudomonal (AP) therapy.

**Methods.** A retrospective cohort analysis of adult Veterans with OM treated with AP compared with non-antipseudomonal (NAP) therapy was conducted. Patients managed by the VA St. Louis outpatient parenteral antimicrobial therapy (OPAT) service from 1/1/2009 to 7/31/2015 were identified and screened for inclusion. Patients with culture negative (CN) or non-pseudomonal superficial swab cultures (SCx) were included. Figure 1 presents the study profile and exclusion criteria. The primary outcome was clinical failure, defined as a composite of: (1) extension of antibiotics beyond 1 week of the planned duration, (2) recurrence of OM at the same anatomical site within 12 months, or (3) any unplanned surgery or amputation at the anatomical site within 12 months of ABx completion.

**Results.** Overall, 104 patients with 109 OM encounters were included; there were 29 CN encounters and 80 SCx encounters. Table 1 presents baseline demographics. The overall failure rate was 55/109 (50.5%). The results of the analysis are shown in Table 2. While not included in the primary analysis, *Pseudomonas* was isolated from 8/88 (9.1%) swab cultures and 5/33 (15%) deep cultures.

**Conclusion.** Empiric AP therapy did not improve clinical outcomes in patients with either CN or SCx OM.

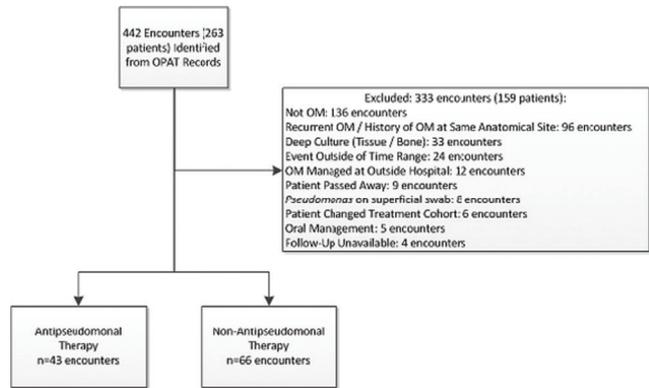
Table 1: Demographics

	AP (n = 43)	NAP (n = 66)	P-value
Age, years (mean ± SD)	62 (±8.60)	62 (±9.60)	0.93
Male	42	64	1.00
White	34	55	0.57
Creatinine clearance, ml/minute (mean ± SD)	65.2 (±27.7)	62.8 (±27.4)	0.65
History of OM	6	14	0.34
Diabetes (DM)	40	55	0.14
Peripheral vascular disease (PVD)	12	26	0.22

Table 2: Analysis

	Clinical Cure (n = 54)	Clinical Failure (n = 55)	P-value
DM	46	49	0.54
PVD	20	18	0.64
History of OM	12	8	0.30
MRSA therapy	33	35	0.77
AP therapy	19	24	0.37
Surgical intervention	30	21	0.07
<i>Clostridium difficile</i> infection	4	4	0.97
MRSA on SCx	8 / 39	7 / 41	0.69
Infection Site			
Lower extremity	46	53	
Upper extremity	3	1	0.52
Other	5	1	
Planned Duration ≥ 6 weeks	51	52	0.98
Microbiology			
CN	15	14	
Monomicrobial	13	9	0.40
Polymicrobial	26	32	

Figure 1. Trial profile.



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**217. Predictive Factors for Successful Treatment in Candidial Bone and Joint Infection**

Wooyong Jeong, MD<sup>1</sup>; In Young Jung, MD<sup>1</sup>; Heun Choi, MD<sup>1</sup>; Jinnam Kim, MD<sup>2</sup>; Se Ju Lee, MD<sup>2</sup>; Hye Seong, MD<sup>2</sup>; Jung Ju Kim, MD<sup>2</sup>; Nam Su Ku, MD<sup>1,3</sup>; Jun Yong Choi, MD, PhD<sup>1,3</sup>; Young Goo Song, MD, PhD<sup>1,3</sup>; June Myung Kim, MD, PhD<sup>1,3</sup> and Su Jin Jeong, MD/PhD<sup>1,3</sup>; <sup>1</sup>Division of Infectious Disease, Department of Internal Medicine, Yonsei University College of Medicine, Seoul, Korea, Republic of (South), <sup>2</sup>Department of Internal Medicine, Yonsei University College of Medicine, Seoul, Korea, Republic of (South), <sup>3</sup>AIDS Research Institute, Yonsei University College of Medicine, Seoul, Korea, Republic of (South)

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**Background.** Candidiasis is a major cause of morbidity and mortality, causing a diverse spectrum of clinical diseases. Candidial bone and joint infection (CBJI) is a rare clinical disease, although it is one associated with significant morbidity. As most prior studies were limited to individual cases and small case series, there were insufficient data on the epidemiology and outcome of CBJI. The aim of this study is to identify the predictive factors for successful treatment in CBJI.

**Methods.** A retrospective review was performed on 33 patients with Candida confirmed on culture, among patients diagnosed with bone and joint infection between January 2006 and December 2016 at a 2400-bed tertiary hospital in South Korea. Unfavorable outcome was defined as recurrence following completion of treatment or mortality. Clinical characteristics, treatment outcome, and medical records were reviewed.

**Results.** Of the 33 patients, 15 (45.5%) had unfavorable outcomes; recurrence (n = 9) and mortality (n = 6). Median age was 64.0 years (range, 50.5–71.5 years) and there were 14 (42.4%) males. Seventeen (51.5%) patients had arthritis and 16 (48.5%) osteomyelitis. *Candida albicans* constituted 48.5%, *C. parapsilosis* 24.2%, *C. tropicalis* 6.1%, and *C. glabrata* 6.1%. Mechanisms of infection were hematogenous dissemination (57.6%) and direct inoculation (42.4%). There were no significant differences between the favorable outcome group and the unfavorable outcome group for the underlying diseases. The neutrophil percentage in complete blood count at the time of diagnosis showed a difference between the two groups (68.0% vs. 79.6%, P = 0.016). There was a significant difference in neutrophil-lymphocyte ratio (2.2 vs. 4.8, P = 0.023), erythrocyte sedimentation rate (ESR) (40.5 vs. 72.4, P = 0.024) and C-reactive protein (CRP) (15.3 vs. 86.3, P = 0.001) at the end of treatment. The duration of antifungal therapy showed a significant difference (124.9 days vs. 44.3 days, P = 0.041), but there was no