weeks. His endocarditis did not relapse after 6 months' treatment. (Case 2) A 71-year-old man who had a past medical history of enterococcal endocarditis was successfully treated with intravenous ampicillin and subsequent atrial valve replacement. He was admitted to our hospital because of fever and back pain. Prosthetic valve endocarditis was diagnosed because blood cultures revealed *C. striatum*, and evidence of metastatic lesions. While intravenous vancomycin and oral rifampin (600 mg/day) were initiated, several complications, such as pseudoaneurysm of ascending aorta, splenic artery aneurysm followed by a rupture, and cerebral hemorrhage occurred. The patient's refusal of a re-operation rendered prolonged medical treatment necessary for 16 weeks. He died 20 weeks after the diagnosis of *Corynebacterium* endocarditis.

Conclusion. The same antibiotic treatment regimen resulted in opposing outcomes in our two patients. To the best of our knowledge, only 22 cases were previously described in English literature. However, there was no well-established medical treatment against this pathogen. Our experience might be beneficial for similar patients worldwide.

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180. Klebsiella pneumoniae and K. oxytoca Bacteremia: Differences in Host, Source, and Antibiotic Susceptibility

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Session: 37. Bacteremia, CLABSI, and Endovascular Infections
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Background. *Klebsiella* species (KS) bloodstream infection (BSI) is often caused by *K. pneumoniae* (KP). *K. oxytoca* (KO) is emerging and implicated in antibiotic-associated right-sided colitis. We compared the clinical and microbiological characteristics of KP and KO.

Methods. We reviewed blood culture (BC) results (January 1, 2010–December 31, 2017), selected patients with KS in ≥1 BC, reviewed their medical records, abstracted patient demographics, source of bacteremia, antibiotics susceptibility, and outcome. Each patient was counted once. We compared KP and KO cases. All differences were assessed by the chi-square test and regression analysis, using SPSS.

Results. We encountered KS in 975/14,256 (6.8%) positive BC, representing 611 BSI including 537 KP-BSI (484 patients) and 55 KO-BSI cases (54 patients); each patient was counted once. Mean age and prevalence of diabetes and most comorbidities were similar but KO was less frequent in African Americans (40.7% vs. KP [61.3%]; *P* = 0.005) and in patients with neurological debility (Stroke, paraplegia, multiple sclerosis; 11.1% vs. KP [24.8%]; *P* = 0.03). KO BSI was more frequent in IVC BSI and was absent in pneumonia-associated BSI (table). Antibiotic resistance was rare among KO isolates except for cefazolin-intermediate susceptibility (42.6% vs. 1.7%; *P* < 0.001). CREs were limited to KP. Logistic regression analysis confirmed KO link to IVC (OR = 3.57; 95% CI: 1.89, 6.76; *P* < 0.001) and Caucasian race (OR = 2.46; CI: 1.37, 4.42; *P* = 0.003). Mortality rate was comparable (28.1% [KP] vs. 35.2% [KO]; *P* = 0.3).

Source and antibiotic susceptibility (%) in *K. pneumoniae* and *K. oxytoca* bacteremia

	K. pneumoniae	K. oxytoca	P
Source			
IVC	12.8	33.3	<0.001
UTI	34.9	24.1	0.1
Soft/tissue bone	8.7	11.1	0.6
Abdomen	21.3	14.8	0.4
Pneumonia	8.3	0	0.03
Antibiotics resistance			
Cefazolin	28.6	20.4	0.1
Ceftriaxone	25.2	5.6	0.001
Ciprofloxacin	25.6	1.9	<0.001
Gentamicin	18.2	1.9	0.001
TMP/SMX	25.4	1.9	<0.001
ESBL 25.6	3.7	<0.001	
CRE	4.7	0	0.1

Conclusion. KO and KP BSI differ in the type of host and source, suggesting different colonization dynamics. KO remains antibiotic-susceptible but might be cefazolin less susceptible. Prospective studies are needed to confirm differential cephalosporin susceptibility and delineate host–pathogen interactions.

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181. Antimicrobial Susceptibility Trends and Risk Factors for Antibiotic Resistance in Pseudomonas aeruginosa Bacteremia: A 10-Year Experience at a Korean Tertiary Hospital

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Background. Bacteremia due to *Pseudomonas aeruginosa* is associated with high mortality and inappropriate initial antimicrobial therapy leads to worse outcomes. We

aimed to analyze clinical characteristics of *P. aeruginosa* bacteremia and risk factors for antibiotic resistance and investigate their antimicrobial susceptibility trends.

Methods. We retrospectively reviewed the medical records of patients with *P. aeruginosa* bacteremia admitted to a tertiary hospital between January 2009 and March 2019.

Results. A total of 242 patients were identified and the median age was 70 years [interquartile range (IQR) 57.6–75.4]. Hepatobiliary tract (28.5%) was most common primary site of infection, followed by respiratory tract (20.2%) and urinary tract (15.7%). Out of 197 (81.4%) patients treated with susceptible antibiotics and the median duration of active antibiotic therapy was 10 days (IQR 4–15.5). The percentages of susceptible *P. aeruginosa* to amikacin, aztreonam, cefepime, ceftazidime, ciprofloxacin, colistin, gentamicin, imipenem, meropenem, piperacillin–tazobactam, and ticarcillin-clavulanate were 90.1%, 57.9%, 77.3%, 74.8%, 74.4%, 99.2%, 91.3%, 76.0%, 76.0%, 69.4%, and 51.2%. There were 24.8% carbapenem-resistant *P. aeruginosa* (CRPA), 36.4% multidrug-resistant *P. aeruginosa* (MDRPA), and 15.3% extensively drug-resistant *P. aeruginosa* (XDRPA). Susceptible *P. aeruginosa* to gentamycin and ticarcillin-clavulanate were significantly decreased in 2014–2019 than that in 2009–2013 (both; *P* < 0.001). Resistance rates to carbapenems and fluoroquinolones tended to increase over time. CRPA, MDRPA, and XDRPA were significantly associated with delayed active therapy (>48 h) (all; *P* < 0.001). Independent risk factors for CRPA were urinary tract infection (adjusted odds ratio [aOR], 3.4; 95% confidence interval [CI], 1.5–7.8), underlying hematologic malignancy (aOR, 3.0; 95% CI, 1.1–8.3) and cerebrovascular accident (aOR, 2.6; 95% CI, 1.1–5.9), hospital-acquired infection (aOR, 2.5; 95% CI, 1.0–6.1), and co-colonization with multidrug-resistant organisms (aOR, 2.2; 95% CI, 1.1–4.4).

Conclusion. The identification of risk factors for antibiotic resistance and analysis of antibiotics susceptibility are useful for early initiation of appropriate antibiotics in patients with *P. aeruginosa* bacteremia.

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182. Appropriateness of Treatment Duration for S. aureus Bacteremia (SAB)

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Background. An algorithm-based guide to optimal treatment duration in staphylococcus bacteremia demonstrated a non-inferior rate of clinical success compared with standard of care. The purpose of this descriptive study was to assess appropriateness of staphylococcus bacteremia duration of therapy according to the SAB treatment algorithm.

Methods. IRB approved, retrospective cohort describing antibiotic use in *S. aureus* bacteremia across a health system from January to March 2019. Patients were included if they had at least one blood culture with *S. aureus*. Exclusion criteria included transfer from outside hospital, concurrent osteomyelitis diagnosis, and death within 72 hours of positive culture. The primary outcome was the appropriate duration of antibiotics for uncomplicated SAB. Secondary outcomes included clinical failure, antibiotic adverse effects, 90-day mortality, and hospital length of stay.

Results. A total of 59 patients were included. The median age was 66 years old and 22 patients (37.3%) were female. Diagnosis: uncomplicated SAB 28 (47.5%) and complicated SAB 31 (52.5%); MRSA 32 (%) and MSSA 27 (%). Infectious Diseases Consultation 56 (94.9%). 4 patients died before treatment duration was determined. Breakdown of treatment durations and clinical failures are listed in Tables 1. Appropriate duration occurred in 9 (32.1%) of patients with SAB. Overall, 14 patients experiences antibiotic adverse effects, 11 which occurred in antibiotic use for ≥4 weeks, 4 occurred in patients with uncomplicated SAB treated for ≥4 weeks. Breakdown of adverse effects: acute kidney injury 9, myositis 1, rash 1, nausea/vomiting 1, anaphylaxis 1, hypersensitivity pneumonitis 1.

Conclusion. Excess treatment duration for uncomplicated SAB was common (16%), in this study, inconsistent with best practice recommendations. 79% of adverse effects occurred in patients who received a ≥4 week course. The results of this study suggest more efforts are needed to implement contemporary evidence-based treatment duration algorithms for uncomplicated SAB to minimize unnecessary antibiotic harm.

Table 1: Treatment Duration and Clinical Outcomes

	Shorter Duration (N=4)	Appropriate Duration (N=35)	Excess Duration (N=16)
Diagnosis			
Uncomplicated SAB (n=26)	1 (3.8%)	9 (34.6%)	16 (61.5%)
Complicated SAB (n=29)	3 (10.3%)	26 (89.7%)	--
Clinical Outcomes			
Clinical success	4 (100%)	28 (80%)	13 (81.3%)
Persistent bacteremia	--	7 (20%)	--
Relapse	--	4 (11.4%)	1 (6.3%)
Death	--	--	2 (12.5%)
Therapy change due to inadequate response	--	3 (8.6%)	--

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183. Candidaemia in Children and Importance of Central Venous Catheter Removal

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