2293. Revival of Polymyxins: A Single-Center Historical Cohort of Critically Ill Patients in Brazil

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Background. The epidemiological scenario of multidrug-resistant bacteria has brought polymyxins back to medical prescriptions, as they are last-line therapy against carbapenem-resistant bacteria. There is a lack of knowledge of which is the best way to use this drug, especially in critically ill patients. We aimed to evaluate polymyxin use in an intensive care unit (ICU) in a university hospital and to describe its epidemiological characteristics.

Methods. This historical cohort included all consecutive patients who used polymyxins to treat ventilator-associated pneumonia from January 1, 2017 to January 31, 2018, during hospitalization in an ICU from a public university hospital, endemic for carbapenem-resistant bacteria, in Londrina, Brazil. Microbiological processing for diagnosis followed the guidelines from the Clinical and Laboratory Standards Institute (CLSI). Statistical analyses were performed using MedCalc for Windows, version 18.9 (MedCalc Software, Ostend, Belgium) and significance level adopted was 0.05.

Results. There were 179 patients; median of age was 57 years (IQR: 40.0 - 70.75). Polymyxin B was the most prescribed polymyxin (97.2%). Most of the patients had comorbidities (72.6%). Age was higher in the group of patients who died (60.0 vs. 36.5 years, $P < 0.0001$). Comorbidities prevalence was higher in non-survivors (80.7% vs. 38.2%, $P < 0.0001$). Sequential Organ Failure Assessment (SOFA) score on polymyxin prescribing day was higher in non-survivors (8.0 vs. 7.0, $P = 0.0093$), as well as Simplified Acute Physiology Score 3 (SAPS 3) score (70.7 vs. 59.35, $P = 0.0003$). Thirty-day mortality was 43%. Analysis of 14-day survival showed a higher mortality for patients who had sepsis (Log-rank test, $P = 0.0284$) and septic shock (Log-rank test, $P = 0.0065$). *Acinetobacter baumannii* was the most common etiologic agent, in 125 samples (73.9%), with 97.6% of resistance to carbapenem and 5.6% of resistance to polymyxins.

Conclusion. Polymyxin B was the most prescribed polymyxin. Age was higher in non-survivors, as well as comorbidities prevalence, SOFA and SAPS 3 scores. Patients with sepsis and septic shock showed a 14-day higher mortality. *Acinetobacter baumannii* was the most isolated agent. Carbapenem resistance was high.

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2294. Comparative Evaluation of Ertapenem and Clindamycin Plus Gentamicin for the Treatment of Postpartum Endometritis

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Background. Clindamycin plus gentamicin (C/G) is the most commonly used regimen for the treatment of postpartum endometritis. With a similar spectrum of coverage and once daily dosing, ertapenem is an attractive alternative. The purpose of this study was to evaluate the efficacy of ertapenem compared with C/G, for the treatment of postpartum endometritis.

Methods. This was a retrospective chart review (IRB-approved) of patients treated with either ertapenem or C/G for endometritis, from July 2017 to July 2018. Patients receiving agents from both groups were excluded. Data collected included: demographics, ante- and intrapartum course, including efficacy parameters and antimicrobial use. Secondary objectives included a safety outcomes and patient quality analysis. Appropriate statistical analysis was performed.

Results. A total of 81 patients were included (40 in C/G arm, 41 in ertapenem arm). No differences in mean length of stay (5.98 vs. 5.61 days in C/G and ertapenem, $P = 0.61$), readmission within 14 days, or mortality were seen. No patients developed acute kidney injury, *C. difficile* infection, or ototoxicity. All patients in the ertapenem arm had appropriate dosing, compared with 27.5% in C/G arm ($P < 0.0001$). Inappropriate dosing in 79% of C/G group was attributed to under-dosing of gentamicin. For quality measures, patients in C/G arm had more nighttime interruptions (3 vs. 1 interruptions per patient). 46% of patient in the ertapenem group had no overnight interruptions compared with 0% in C/G group. There were 2 suspected wound infections in the C/G group, but none in ertapenem group.

Conclusion. No difference in efficacy was seen between ertapenem and C/G for treatment of postpartum endometritis Ertapenem was associated with less inappropriate dosing and fewer nighttime interruptions Improvement in patient experience and reduction of nursing workload may outweigh the small additional cost of ertapenem.

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2295. Clinical Characteristics of *Achromobacter* Xylosoxidans Infections in a Korean Teaching Hospital

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Background. *Achromobacter* species are non-fermentous Gram-negative bacilli that are primarily found in contaminated soil or water, but is rare in human. Although their low virulence, *Achromobacter xylosoxidans* is considered one of the emerging nosocomial agents in immunocompromised patients, including those with hematologic malignancy, diabetes, and renal failure. This organisms can cause pneumonia, catheter-related blood stream infection, urinary tract infection, and meningitis. We investigated the clinical manifestations and outcomes associated with *A. xylosoxidans* infection in a mid-sized community-based hospital in Korea.

Methods. We retrospectively analyzed all consecutive episodes of *A. xylosoxidans* in a mid-sized community-based hospital from October 2015 to April 2019.

Results. A total 181 clinical isolates of *A. xylosoxidans* were obtained from 123 patients. Of these, 117 (95%) had nosocomial infection that mostly received previous antibiotic therapy. *A. xylosoxidans* was isolated from respiratory tract (68%, 84/123), peritoneal fluid (11%, 13/123), urine (8%, 10/123) and blood (6%, 7/123). Seven cases of *A. xylosoxidans* bacteremia was associated with intravenous catheter sepsis. Seventy-eight cases (63%) had polymicrobial infection; *P. aeruginosa* ($n = 21$) was most commonly coisolates organisms, followed by *S. maltophilia* ($n = 20$) and methicillin-resistant *S. aureus* ($n = 15$). The main underlying diseases were neurologic disease (41%), diabetes mellitus (36%), and solid cancer (25%). Of these, 53 patients (43%) were categorized as in an immunocompromised state. The in-hospital mortality rate was 23%. Based on multivariate analysis, neurologic disease (hazard ratio [HR]: 1.23, 95% confidence interval [CI]: 0.08–0.67; $P = 0.007$) and the age-adjusted Charlson comorbidity score (HR: 1.31% CI: 1.038–1.65; $P = 0.02$) were associated with increased mortality.

Conclusion. We concludes that, though rare, *A. xylosoxidans* could be pathogenic in immunocompromised patients who are in hospital. *A. xylosoxidans* can cause nosocomial infection and bacteremia is mostly originating from intravenous catheter. The potential impact on the clinical outcome, further investigations are required to delineate the role of *A. xylosoxidans*.

Table. Demographics, clinical characteristics of patients with *Achromobacter xylosoxidans* infection

Variables	Total (*n*=123)
Male, n (%)	70 (56.9)
Age, median (IQR)	71 (57–79)
Length of hospital stay prior *A. Xylosoxidans* isolated, median (IQR)	16 (7–34)
Underlying disease, n (%)	
Neurologic disease	50 (40.7)
Diabetes mellitus	44 (35.8)
Solid cancer	31 (25.2)
Congestive heart failure	27 (22)
Chronic kidney disease	20 (16.3)
Structural lung disease	17 (13.8)
Biliary disease	12 (9.8)
Liver cirrhosis	5 (4.1)
Solid organ transplantation	3 (2.4)
Solid organ transplantation	6 (10.2)
Immunocompromised state	53 (43.1)
Clinical manifestation, n (%)	
Fever (≥ 38.0°C)	88 (71.5)
Shock	18 (14.6)
Age-adjusted Charlson comorbidity index, n (%)	41 (62.1)
0–2	38 (30.9)
3–5	49 (39.8)
≥ 6	36 (29.3)
Laboratory findings, median (IQR)	
White blood cells (/mm^3)	9,800 (7,400–15,100)
Hemoglobin(g/dL)	9.8 (9.1–11.2)
Platelets (10^3/mm^3)	206 (133–278)
C-reactive protein (mg/L)	41.0 (12.0–96.7)
In-hopital mortality	28 (22.8)

IQR = interquartile range.

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