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P1299 Retrospective cohort of *Serratia marcescens* KPC-2 producer isolates from southern Brazil

Cezar Vinícius Würdig Riche*[1], Renato Cassol[2], Islam Maruf Ahmad Maruf Mahmud[3], Patrícia Reis Pereira[2], Cícero Dias[1], Diego Rodrigues Falci[4]

[1] Federal University of Health Sciences of Porto Alegre, Porto Alegre, Brazil, [2] Hospital Nossa Senhora da Conceição, Porto Alegre, Brazil, [3] Lutheran University of Brazil, Canoas, Brazil, [4] Hospital de Clínicas de Porto Alegre, Porto Alegre, Brazil

Background: *Serratia marcescens* (SM) has been associated with high morbidity and mortality, and often identified as a multiresistant pathogen, harboring carbapenemases. A major threat is its intrinsic resistance to polymyxins, which further narrows therapeutic options. Our goal was to evaluate incidence, clinical characteristics, antimicrobial susceptibility profile and outcomes in patients colonized or infected by carbapenemase-producing (KPC-2) SM isolates in a tertiary-care public hospital located in Southern Brazil.

Materials/methods: This was a historical cohort study, extended from December 2010 to December 2017. Patients with positive cultures to carbapenemase-producing SM were included. Bacterial identification was performed by Vitek-2 (bioMérieux, France). Antimicrobial susceptibility testing (AST) was performed by Vitek-2, and meropenem and imipenem gradient strips (bioMérieux, France). Carbapenemase detection was made by modified Hodge test and confirmed by real-time PCR. Patient data were retrieved from electronic medical records.

Results: A total of 77 SM isolates were included. A linear trend indicating decrease in incidence rates was demonstrated (p=0.006; Cochran-Armitage test) data in table. Clinical isolates represented 50/77(64.9%): urine 13(26.0%), soft tissue 13(26.0%), respiratory tract 11(22.0%), blood 9(18.0%) and abdominal fluid 4(8.0%). 27(35.0%) patients present positive vigilance cultures only. Patients were predominantly male (79.2%), median age was 64y. (IQR 54-70y.), Charlson score median was 4 (IQR 3-5), and 67(87.0%) had received antimicrobials 30 days previously to positive cultures, mostly amoxicillin-clavulante (41.7%). ATS: amikacin 76.0%, gentamicin 40.0%, meropenem 18.0%, imipenem 2.0%, ciprofloxacin 30.0%, trimetoprim-sulfametoxazole 62.0% and tigecycline 40.0%. The most common therapy were aminoglycosides (28.9%); combination therapy was used in 28.9%, most frequently meropenem plus polymyxin B. 30-day mortality rate was 29.8% and hospital mortality was 41.5%. Chronic pulmonary disease was the only variable independently associated with 30-day mortality (OR 4.07; CI 95%: 1.06-17.13).

Table: Incidence of cases per year.

Year	2010	2011	2012	2013	2014	2015	2016	2017
Incidence rate	0.041	0.027	0.080	0.065	0.033	0.029	0.011	0.026

Incidence rate expressed in isolates per 1000 patient-days.

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Conclusions: We observed high 30-day mortality in this study – associated to chronic pulmonary disease. Amikacin was the mostly active agent and a reasonable treatment in this setting. Even though incidence seems to be decreasing, treatment of these conditions is still challenging, as β-lactam-avibactam combinations and imipenem-relebactam are not widely available in low and middle-income countries. Best strategies to manage infections caused by carbapenem and colistin-resistant organisms are still to be determined.