Incidence of Carbapenem Resistant Enterobacteriaceae (CRE) Bacteremia in Patients Colonized with CRE

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Methods

• Using our Laboratory Information System all bacteremias caused by CRE performed between January 2014 and January 2016 were identified.

• During the same time period all rectal screens for CRE (both positive and negative) were also identified.

• Growth on selective media was confirmed by modified Hodge test, colistin and tetracyclin E-tests, and sent to reference laboratory for additional testing.

• Sensitivities were performed by Vitek2 using EUCAST breakpoints and confirmed by reference laboratory.

• Demographic characteristics, patient outcomes, and infection control precautions taken were recorded.

Results

• There were 18 positive blood cultures from 13 patients.

• 7/13 (54%) were male, mean age 75.5 years (range 38-90).

• 9 patients have died, deaths occurred between 1-567 days post bacteremia, 5 deaths occurred within 30 days of bacteremia, & within 90 days.

• 7 patients had no rectal screening performed, 3 patients had screening performed and screens were negative.

• 3 patients had positive rectal screens prior to development of bacteremia, all developed bacteremia with the same organism. In one patient, the rectal screen revealed a second CRE, Citrobacter amalonaticus.

• The majority of blood stream isolates were K. pneumoniae (12), others were Serratia marcescens [4], Enterobacter aerogenes [1], Escherichia coli [3] (Figure 2).

  • The S. marcescens was isolated from a patient transferred from hospital care in Spain.

Antimicrobial susceptibility of blood stream isolates is presented in table 1.

Conclusions

• In our experience, there is a low incidence of bacteremia in patients colonized with CRE. There was also incidences of bacteremia in the absence of proven colonization.

• Almost half of the patients who developed bacteremia had not been screened, and may not have been recognized as being at risk. Further study is required to identify risk factors for the development of CRE bacteremia in this patient group.

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