

P1051 **Risk factors for carbapenem-resistant Enterobacteriaceae (CRE) carriage at the time of hospital admission**

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Background: Carbapenem-resistant Enterobacteriaceae (CRE) are an important emerging threat. Our hospitals in London screen all admissions to ICU, renal, vascular, and haematology, and overnight hospitalisation in the past 12 months or overseas residence are used as screening triggers for all other admissions. Here, we report risk factors for CRE carriage identified at the time of hospital admission.

Materials/methods: All patients screened for antibiotic-resistant Gram-negative bacteria in the first 24 hours or 30 days prior to a hospitalisation (to capture pre-admission screening) between December 2015 and November 2017 were included. A rectal swab was plated onto chromogenic media and antibiotic susceptibility determined. CRE was defined as Enterobacteriaceae resistant to either ertapenem or meropenem. Risk factors for CRE were identified using univariable and multivariable logistic regression.

Results: 1050 (1.4%) of 74319 screened admissions carried CRE; less than half of these were carbapenemase producers. Risk factors for CRE carriage in multivariable analysis were previous hospitalisation at our hospitals in the past 12 months (78% of positive patients had previous hospitalisation; OR 3.3, 95% CI 2.8-3.8) and admitting speciality. Compared with vascular patients, patients admitted to renal (OR 2.0, CI 1.4-2.9), haematology (OR 2.1, CI 1.5-3.2), and paediatrics (OR 1.9, CI 1.2-2.8) were more likely to carry CRE, and patients admitted to cardiology (OR 0.5, CI 0.3-0.8), the emergency department (OR 0.6, CI 0.4-0.8), oncology (OR 0.6, CI 0.4-0.9), and surgery (OR 0.4, CI 0.3-0.7) were less likely to carry CRE. Patient age was not significantly associated with CRE carriage. The number of screens and the rate of CRE detected increased progressively (from 2 per 1000 patient days in December 2016 to 5 in October 2017).

Conclusions: Renal, vascular, and haematology patients are higher risk for CRE, and paediatrics could also be considered a high risk speciality. Previous hospitalisation is also an important risk factor for CRE identified at the time of hospital admission. We lacked information on exposure to antibiotics, which will be included in future analyses. Increased screening detected more cases, suggesting that CRE was going undetected previously. Prospective surveillance studies are required to understand the epidemiology of CRE.