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Abstract (oral session)

Gastrointestinal colonisation by KPC-producing Klebsiella pneumoniae following hospital discharge: duration of carriage and transmission potential

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Objectives: Our aims were 1) to examine the duration of carriage of KPC-producing Klebsiella pneumoniae (KPC KP) following hospital discharge, 2) to study the risk factors for persistent carriage and 3) to investigate transmission to family members. Methods: A cohort of KPC KP carriers were followed monthly between 3 to 6 months after discharge from an acute-care hospital. Rectal sample and data were collected at baseline and at each visit. Family members and caregivers in the same household were also tested by rectal samples. KPC KP was detected by culture and direct blaKPC PCR. Acquisition time was regarded as the earliest date of KPC KP isolation. Resolution of carriage was defined as a negative KPC KP tests in at-least 2 consecutive samples. Analyses were separated for recent (<3 months) (REC) and remote (>3 months) (REM) acquisition groups. Risk factors for persistent carriage were examined by survival analyses (log rank test) for the REC group and by the Chi-square and t-test for the REM group. Results: A total of 125 patients were included, 75 and 50 in the REC and REM groups, respectively. The mean (SD) age of patients was 67.5 (19.3) years and 49.6% were males. The numbers (%) of persistent carriers were 46 (61%) and 14 (28%) in the REC and REM group, respectively ($p<0.001$). Significant risk factors for persistent carriage identified in both the REC and REM groups were the presence of any catheter and a low functional status (Barthel index) score ($p<0.05$). Unique risk factors identified in the REC group included the use of antibiotics during the month prior to study entry ($p=0.053$), longer hospitalization ($p=0.043$), admission from a long-term care facility (LTCF) ($p=0.001$) and a discharge from acute care to LTCF ($p=0.002$). Out of the entire 100 patients who had at least one negative sample, only 65 remained negative. Family members and caregivers (n=32) were followed for up to 3 months with 102 rectal samples collected; all tested negative for KPC KP. Conclusion: Persistent carriage of KPC KP is more common in patients with recent acquisition, and is related to LTCF stay. A single negative KPC KP test is insufficient to exclude persistent carriage. The potential for transmission of KPC KP to close family members and caregivers is low.