O121

Abstract (oral session)

Nosocomial spread of extended-spectrum beta-lactamases (ESBL)-producing Enterobacteriaceae without contact isolation: a prospective observational study

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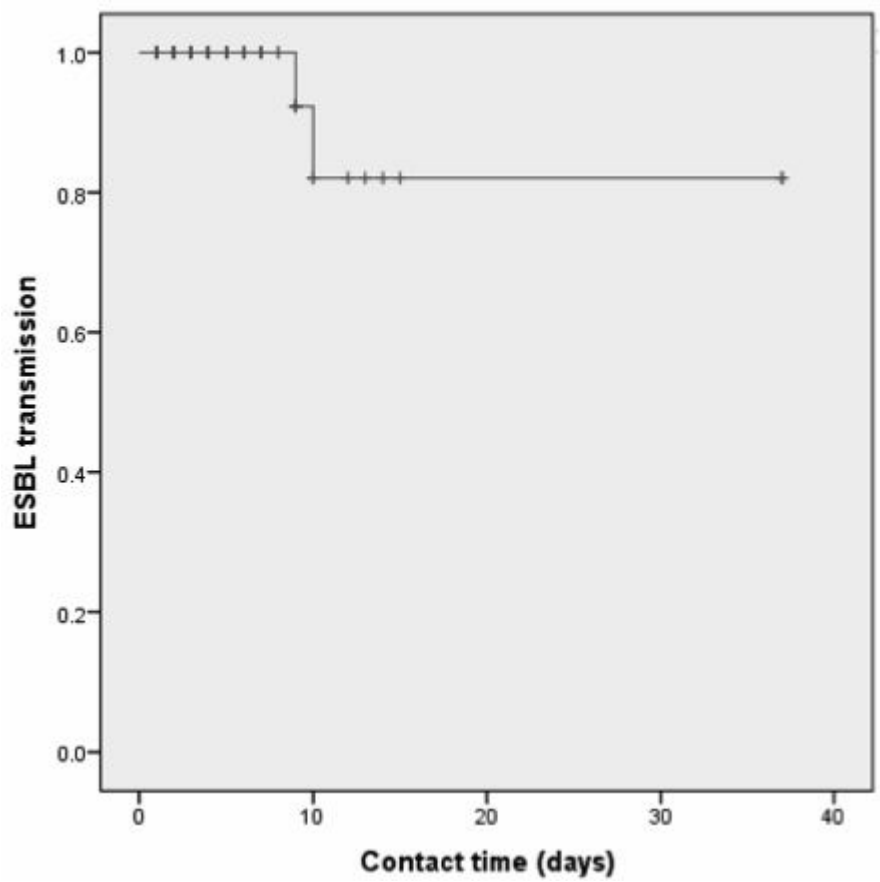
Objectives: Multidrug- resistant organisms, including Extended-spectrum beta-lactamases (ESBL)-producing Enterobacteriaceae, are rapidly emerging worldwide. Contact isolation is recommended by authorities to limit spread of ESBL- however, the rate of transmission without contact isolation in the non-epidemic setting is unknown. In addition, the majority of ESBL cases are community-acquired; likely by commonly ESBL contaminated food. Therefore, we aimed to determine the rate of spread (R0) for ESBL-producing Enterobacteriaceae in a tertiary care-centre with five ICUs over an eleven-year study period using standard precautions without contact isolation. Methods: From June 1999 to April 2011, all patients of the University Hospital of Basel, Switzerland hospitalized in the same room as a patient colonized or infected with an ESBL-producing Enterobacteriaceae for at least 24 hours, were screened for ESBL-carriage by performance of rectal swabs, as well as swabs from any open wounds or drainages, and urinary cultures in patients with indwelling catheters. Nosocomial transmission was assumed when screening for ESBL-carriage of a contact patient was positive and molecular typing by pulsed-field gel electrophoresis (PFGE) revealed clonal relatedness with the strain of the index patient. Results: From June 1999 to April 2011, 324 patients infected or colonized with an ESBL-producing Enterobacteriaceae were hospitalized. Active screening for ESBL-carriage could be performed in 133 consecutive contact patients. A total of 579 contact days were recorded during the study period, with a mean of 4.3 (±4.89), and a median of 3 days (range 1 to 37). Nosocomial transmission with established epidemiologic link, confirmed by PFGE occurred in 2/133 (1.5%) contact patients during an eleven-year study period (Figure 1). There was no evidence of infection of the two patients with ESBL-producing Klebsiella pneumoniae and E. coli, and therefore, detection was interpreted as colonization. Conclusions: The estimated rate of spread of ESBL-producing Enterobacteriaceae is very low in a tertiary care University affiliated hospital with a high level of standard hygiene precautions. The low level of nosocomial transmission and the rapid emergence of community-acquired ESBL, - likely by contaminated meat or vegetables - challenge the recommendation of routine use of contact isolation in a non-epidemic setting to prevent spread.


1.0
0.8
0.6
0.4
0.2
0.0
ESBL transmission
0
10
20
30
40
Contact time (days)