

Prospective validation of cessation of contact precautions for ESBL-producing *E. coli*

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Objectives

Transmission rates of ESBL-producing *Escherichia coli* were low at our university-affiliated tertiary care centre in contact patients who were not yet assigned to isolation precautions while culture results were pending - challenging the routine use of contact precautions in non-epidemic settings.¹ Based on our findings and recent data suggesting that ESBL-*E. coli* is predominantly acquired in the community, we abandoned contact precautions for patients infected or colonized with ESBL-*E. coli* at our institution, as well as at an affiliated long-term-care centre. To validate this practice, all contact patients, hospitalized in the same room as a patient with ESBL-*E. coli*, were screened to determine rates of transmission in both institutions.

Methods

This prospective observational cohort study was performed at two affiliated institutions in Switzerland: The University Hospital Basel, an academic tertiary care centre with 855 beds and the Felix Platter-Hospital - a 450-bed, university-affiliated geriatric and rehabilitation centre. Patients were included after routine contact precautions were abandoned for patients infected or colonized with ESBL-*E. coli* from June 2012 to December 2013 at the University Hospital Basel and from January 2012 to December 2013 at the Felix Platter-Hospital.

All contact patients defined as patients hospitalized in the same room as a patient colonized or infected with an ESBL-*E. coli* for at least 24 hours were prospectively screened by performance of rectal swabs, swabs from any open wounds or drainages, as well as urine cultures given the presence of foley catheters. Transmission was regarded to have occurred when screening for ESBL-carriage of a contact patient was positive and the PCR subtype as well as molecular typing by pulsed-field gel electrophoresis (PFGE) revealed identity with the strain of the index patient.

Results

During the study period, 231 contact patients (151 from the acute care hospital and 80 from the geriatric/rehabilitation hospital) were screened for carriage of ESBL-*E. coli* after a median contact time of 4 days (interquartile range [IQR] 3-6 days) at the acute care hospital and 15 days (IQR 9-23 days) at the geriatric/rehabilitation hospital. ESBL-*E. coli* was recovered from a total of 24 contact patients, 12 from each institution. Identity of strains – as determined by PFGE – was confirmed in 11 cases, accounting for an overall transmission rate of 4.8% (11/231). Documented transmission rates were low with 2.6% at the acute-care hospital and 8.8% at the geriatric/rehabilitation hospital. Contact time was longer for patients in which transmission occurred (median 13 days, IQR 10-14 days versus 5 days, IQR 4-10 days, $p=0.003$). Proportions of transmission over contact time are represented in the Figure.

Conclusion

Discontinuing contact precautions for ESBL-*E. coli* in healthcare settings is associated with low transmission rates providing short exposure times and state-of-the-art infection control.

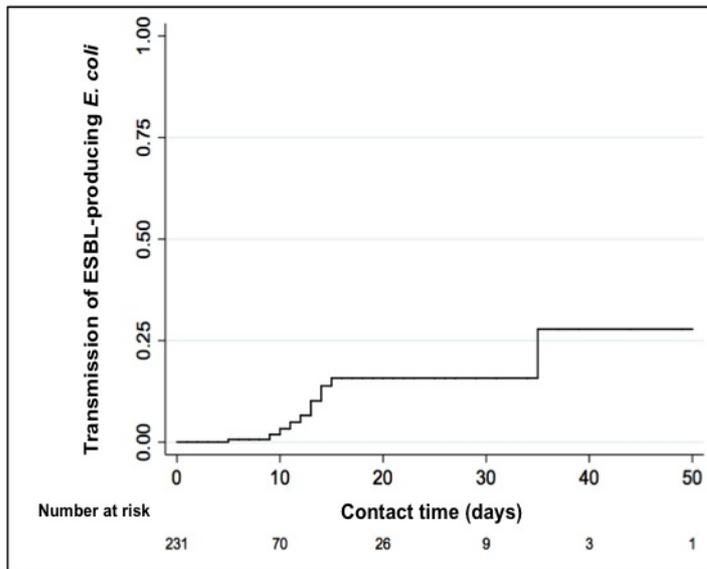


Figure: Transmission of ESBL-*E. coli* over contact time