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O0048 Surveillance of extended-spectrum beta-lactamase-producing Enterobacteriaceae isolates from gut in haematological patients

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Background: The aim of the study was to estimate the rate of ESBL-E colonization in patients receiving treatment for hematological malignancies.

Materials/methods: The prospective study was performed from April 2013 to October 2014 and included patients with newly diagnoses acute myeloid leukaemia (AML) and lymphoma. Rectal swabs were obtained at admission and every week up to 6 months. ESBL-production was confirmed by phenotypic tests. The presence of genes *bla*$_{TEM}$ and *bla*$_{CTX-M}$ was confirmed by PCR.

Results: A total of 98 patients (median age 43 years) were included in this study (AML n=33, lymphoma n=65). For study period 88 ESBL-E were isolated (*E. coli* 59%, *K. pneumoniae* 24%, other – 17%) in 75 (76.5%) patients. Genes *bla*$_{CTX-M}$ were detected in 69% of isolates, *bla*$_{TEM}$ – in 49%, both genes - in 36%. At admission 27% patients were colonized with ESBL-E (24% AML, 28% lymphoma). From admission to our center median detection of ESBL-E colonization was 25 (5 – 175) days in lymphoma and 68 (5-163) – in AML. Six-month probability of intestinal colonization with ESBL-E was 91% in patients with lymphoma and 84% - in patients with AML (Figure A). Six-month probability of persistent ESBL-E carriage was 30.3% (Figure B). Probability of recurrent ESBL-E colonization was 49.4% (Figure C). The rate of bacteremia caused by ESBL-E in patients colonized with subsequent microorganisms was 7% (5/75) and none cases occurred in non-colonized patients.

Conclusions: ESBL-E colonization of gut was identified in 27% of patients at admission and in 84-91% on chemotherapy. ESBL-E colonization increased during hospital stay but it was not permanent in all patients for 6 months. Bacteriemia with ESBL-E was associated with gut colonization with the same microorganism.

Figure. Probability of intestinal colonization with ESBL-E (A), probability of persistent ESBL-E carriage (B), Probability of recurrent ESBL-E colonization (C).