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## Occurrence and characterization of bacteria producing beta-lactamases isolated from patients with leukaemia

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Acute leukaemia (AL) is a heterogeneous group of malignant diseases of haematopoiesis. AL is divided into: acute myeloid leukaemia (AML) and acute lymphoblastic leukaemia (ALL). The aim of this study was to carry out active surveillance of antibiotics resistance among enterobacteria isolated from patients with acute leukaemia. 101 clinical strains were isolated from 95 patients from September 2015 to August 2016. Out of these, 26 patients suffered from ALL and 69 patients from AML. Strains were identified using MALDI-TOF. This method was also used for strains typing and dendrograms were created. The susceptibility to antibiotics was assessed by a standard microdilution method. All 101 isolates of enterobacteria were tested for ESBL genes (*bla*TEM, *bla*SHV and *bla*CTX-M) by PCR method. Overall, 101 clinical strains were obtained from 95 patients. The most common material was throat swab (n=35), stool (n=29) and urine (n=18). Most often, *K. pneumoniae* was present (n=31) and *K. oxytoca* (n=10), followed by *E. coli* (n=22), other bacteria (n=38). High clonality among strains was observed. Production of ESBL was detected by microdilution method in 47 isolates. Genes encoding production of TEM, SHV and CTX-M types of beta-lactamases were detected in 40 (39.6%), 33 (32.7%) and 29 (28.7%) isolates respectively. Eleven strains of *Klebsiella pneumoniae* and 1 strain of *Enterobacter cloacae* harbored all three genes. Due to high immunosuppression, the active surveillance is crucial because of infectious complications and antibiotic resistance, which is serious and increasing problem, especially among *Enterobacteriaceae*.

### Biography

Ondrej Holy is an Epidemiologist and Researcher at the Department of Preventive Medicine, Faculty of Medicine and Dentistry, Palacký University Olomouc, Czech Republic. His major interest is in healthcare-acquired infections, problems associated with antibiotics resistance, its prevention and *Cronobacter* spp. strains.

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