

P1115 **Detection of acquired OXA-type carbapenemases in *Acinetobacter baumannii* isolates from blood culture in patients with hematological malignancies**

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**Background:** The aim of this study was to evaluate susceptibility for carbapenems among *A.baumannii* and to determine carbapenem resistance genes.

**Materials/methods:** Prospective multicenter study included *A. baumannii* isolated from blood culture in hematological patients in 7 Russian hospitals from January 2002 to December 2015. Minimum inhibitory concentration (MIC) for meropenem and imipenem were determined by broth microdilution method (CLSI 2017). All *A. baumannii* isolates were investigated by multiplex real-time PCR for presence of acquired carbapenemase genes (*bla*<sub>OXA-23-like</sub>, *bla*<sub>OXA-24/40-like</sub>, *bla*<sub>OXA-58-like</sub>, *bla*<sub>NDM-like</sub>, *bla*<sub>VIM-like</sub> and *bla*<sub>IMP-like</sub>).

**Results:** A total of 74 *A.baumannii* were examined of those 55 (74.3%) were non-susceptible to meropenem and/or imipenem. In carbapenem non-susceptible isolates MICs for meropenem ranged from 0.5 mg/l to 128 mg/l (MIC<sub>50</sub>=16 mg/l; MIC<sub>90</sub>=128 mg/l) and MICs for imipenem ranged from 2 mg/l to 128 mg/l (MIC<sub>50</sub>=16 mg/l; MIC<sub>90</sub>=64 mg/l). Genes of acquired carbapenemases were detected in 71% (39/55) non-susceptible isolates. None of carbapenemases genes were identified in carbapenem-susceptible isolates. The prevalent type of carbapenemases was OXA-24/40-type (20/39; 51.3%), followed by OXA-23-type (15/39; 38.5%) and OXA-58-type (4/39; 10.3%). Such carbapenemases as NDM-, VIM- and IMP were not detected in any isolates. The values of MIC<sub>50</sub> and MIC<sub>90</sub> for meropenem and imipenem according to carbapenemase genes detection are present in Table. The MIC<sub>50/90</sub> values for meropenem and imipenem were higher in carbapenemase producing *A.baumannii* isolates in comparison with carbapenem non-susceptible isolates without acquired carbapenemases. Meropenem and imipenem had the lower activity against OXA-24/40-producing *A.baumannii* compared to OXA-23-positive isolates.

**Conclusions:** A high rate of non-susceptible to carbapenems *A.baumannii* isolated from blood culture in patients with hematological malignancies was observed. Among acquired OXA-type carbapenemases, OXA-24/40-type were prevalent (51.3%).

Table. Meropenem and imipenem MICs among non-susceptible to carbapenem *A. baumannii* isolates

Acquired carbapenemase among carbapenem non-susceptible <i>A. baumannii</i>	No of isolates	MIC (mg/L)			
		meropenem		Imipenem	
		MIC <sub>50</sub>	MIC <sub>90</sub>	MIC <sub>50</sub>	MIC <sub>90</sub>
Absent	16	16	32	4	16
Present	39	64	128	32	128
OXA-23-type	15	16	64	16	64
OXA-24/40-type	20	64	128	64	128
OXA-58-type	4	16	64	32	32

