

P1003 **Clonal diversity of *Acinetobacter baumannii* isolates from blood culture in patients with hematological malignancies in Russia**

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Background: The aim of this study was to investigate clonal diversity of *A.baumannii* isolates from blood culture in hematological patients.

Materials/methods: Prospective multicenter study included *Acinetobacter baumannii* isolates from blood culture in hematological patients in 7 Russian hospitals from January 2003 to December 2015. Susceptibility testing was performed by the broth microdilution method (CLSI 2017). Genes of acquired carbapenemases (*bla*_{OXA-23-like}, *bla*_{OXA-24/40-like}, *bla*_{OXA-58-like}) were detected by real-time PCR. PCRs for identification of sequence type groups (G1-G14) were performed to evaluate clonality of *A.baumannii* isolates. This method contained two multiplex PCRs that selectively amplify group 1 or group 2 alleles of the *ompA*, *csuE* and *bla*_{OXA-51-like}.

Results: A total of 74 *A.baumannii* were examined of those 55 (74.3%) were non-susceptible to meropenem and/or imipenem. PCR analysis revealed that 39/74 (52.7%) isolates carried acquired carbapenem resistance determinants: *bla*_{OXA-24/40-like} – 27%, *bla*_{OXA-23-like} – 20,3%, *bla*_{OXA-58-like} – 5.4%. Acquired OXA-type carbapenemases were detected only in carbapenem non-susceptible isolates.

A total of 8 sequence groups were identified among 74 *A.baumannii* isolates (Table). The majority of isolates (52.7%) were assigned to G1 group (international clone II, IC II). From carbapenem non-susceptible isolates 63.6% were clustered into G1 (IC II). *A.baumannii* susceptible to carbapenems showed more genetical diversity than non-susceptible isolates. OXA-24/40-producing *A.baumannii* isolates belonged to 3 sequence groups: IC II (13/20; 65%), G8 (5/20; 25%) and G4 (2/20; 10%). OXA-23-producing *A.baumannii* isolates belonged to 4 sequence groups: IC II (6/15; 40%), G12 (5/15; 33.3%), G9 (3/15; 20%) and G2 (1/15; 6/7%). *A.baumannii* with OXA-58-type carbapenemases clustered into G4 (3/4) and G12 (1/4).

Conclusions: This study showed that *A.baumannii* isolated from blood culture in patients with hematological malignancies belonged mainly to IC II, which related to major clusters of epidemic strains spreading in worldwide.

Table. Sequence type groups among susceptible and non-susceptible *A.baumannii* isolates.

| Sequense group | <i>A.baumannii</i> isolates | |
|----------------|------------------------------------|--|
| | Susceptible to carbapenems n=19 | Non-susceptible to carbapenems n=55 |
| G1 (IC II) | 4 (21.1%) | 35 (63.6%) |
| G2 (IC I) | 1 (5.35%) | 1 (1.8%) |
| G4 | 0 | 5 (9.1%) |

| | | |
|--------------|-----------|-----------|
| G5 | 1 (5.3%) | 0 |
| G7 | 1 (5.3%) | 0 |
| G8 | 0 | 5 (9.1%) |
| G9 | 6 (31.6%) | 3 (5.5%) |
| G12 | 3 (15.8%) | 6 (10.1%) |
| Not detected | 3 (15.8%) | 0 |