

**P2411 Analysis of Gram-negative bacteraemia and sensitivity of blood isolates in the ICU department of Moscow (Russia) emergency hospital from 2003 to 2018**Margarita Suvorova<sup>1</sup>, Igor Sychev\*<sup>2</sup>, Andrey Bykov<sup>2</sup>, Elena Burmistrova<sup>2</sup>, Denis Protsenko<sup>2</sup>, Sergey Yakovlev<sup>1</sup><sup>1</sup> I.M. Sechenov First Moscow State Medical University (Sechenov University), Russia, Moscow, Russian Federation,<sup>2</sup> S.S. Yudin Clinical City Hospital of Moscow, Russia, Moscow, Russian Federation

**Background:** As part of the Antimicrobial Stewardship program in our hospital, we constantly monitor the susceptibility of blood pathogens to antibiotics for timely correction of recommendations for empirical antimicrobial therapy. The aim of this study was to analyze the dynamics of the etiological structure of bacteremia in the ICU and sensitivity of Gram-negative bacteria to antibiotics over a 15-year period.

**Materials/methods:** All blood isolates collected in medical ICU department of Moscow emergency hospital from 2003 to 2018 were included in analysis. Species identification and antimicrobial susceptibility testing were performed by automatic system and disk-diffusion method. Susceptibility to antibiotics was interpreted according to EUCAST criteria.

**Results:** A total of 4488 microorganisms were isolated from 12268 blood specimens between 2003 and 2018. The prevalent microorganisms were Gram-positive the whole period of analysis, but the rate of Gram-negatives was significantly increased from 21.0% in 2003 to 38.5% in 2018. The increase in the incidence of Gram-negative bacteremia was owing to *Klebsiella pneumoniae* (from 1.0 to 18.8, 21.0 and 28.1% in 2008, 2013 and 2018) and *Acinetobacter baumannii* (from 0 to 15.7, 12.7 and 24.7%). The resistance rate of *E.coli* and *K.pneumoniae* to 3<sup>rd</sup> generation of cephalosporins (40.0 and 92.6%) in 2018 was very high and did not change in the last 10 years. During the 12-year period the resistance of gram-negatives to imipenem was considerably elevated: from 0 (2003) to 2.3%, 28.4 and 63.4% in 2008, 2013 and 2018 (*K.pneumoniae*), from 0 to 7.5, 90.9 and 97.2% (*Acinetobacter* spp.); the resistance of *P.aeruginosa* to carbapenems during the study period was permanently high (40-75%). The most strains of *Acinetobacter* spp. in 2018 were MDR, the rate of non-susceptibility to ampicillin-sulbactam, amikacin, tigecycline and colistin was 100, 89.7, 36.1 and 0% respectively. The minimum level of resistance of *K.pneumoniae* in 2018 was to colistin, ceftazidime-avibactam and tigecycline – 2.4, 12.5 and 29.0% respectively.

**Conclusions:** The increasing level of resistance of Gram-negative blood isolates to most antibiotics is a matter of great concern. At present the most prevalent blood pathogens – *K.pneumoniae* and *A.baumannii* is characterized as MDR or XDR with very limited appropriate antibacterial treatment options.

