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Basic Science: Pathogenesis

Aetiology of infective endocarditis in Russia

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Objectives. To collect the data on pathogens isolated from patients with infective endocarditis in Russia.

Methods. The study consisted of two parts: a prospective and retrospective. Data on patients with definite and possible infective endocarditis hospitalized in medical institutions in 15 Russian cities were collected during 2011-2013 in the prospective part, and during 2006-2010 in the retrospective part. Due to substantial differences in the susceptibility testing procedures in different institutions only the data on beta-lactams for *Staphylococcus* spp. and on gentamicin for *Enterococcus* spp. were collected concerning the susceptibility of isolated pathogens.

Results. Overall 401 cases of infective endocarditis were included in the study (240 and 161 cases, in prospective and retrospective parts, respectively). In 83.3% of all cases the blood samples for microbiological culture were taken after the initiation of antibacterial therapy. Serological tests and PCR were not done in all cases. Out of all (n=401) cases included only in 36.7% (n=146) the etiology has been identified. The most frequently isolated microorganisms were: *Staphylococcus aureus* – 45.9% (n=67), *Enterococcus* spp. – 15.8% (n=23), coagulase-negative staphylococci – 15.1% (n=22), and *Streptococcus viridans* – 11.6% (n=17). Among 67 strains of *S. aureus*, 48 (71.6%) were MSSA and 19 (28.4%) – MRSA. Among 23 strains of *Enterococcus* spp. (18 – *E. faecalis*, 5 – *E. faecium*) 13 (56.5%) were resistant to gentamicin.

Conclusions. Among microorganisms isolated from patients with infective endocarditis in Russia Gram-positive bacteria were predominant with *S. aureus* accounted in almost half of cases of endocarditis with positive blood culture. High rates of resistance to beta-lactams in *S. aureus* and to gentamicin in *Enterococcus* spp. were noted.