METHICILLIN-RESISTANT *STAPHYLOCOCCUS AUREUS*: AN OVERVIEW OF BASIC AND CLINICAL RESEARCH

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Introduction. Staphylococcal infections are the leading cause of healthcare-associated infections globally as well as in Republic of Moldova. According to different studies – this pathogen is highly spreading among surgical and intensive care units' inpatients. Making part of normal microbiota *Staphylococcus* spp. can populate skin and upper respiratory ways and as a result – it can be transmitted by different routes.

An extra issue represents acquired antibacterial resistance of pathogens. The mostly common one is Methicillin-resistant *Staphylococcus aureus* (MRSA). Thus, it is very important to study this issue in order to detect and treat these infections faster and more efficient. Nowadays, different methods of bacteriological and immunological investigation, as well as new technologies of drug industry are available.

Material and methods. The objective of the study was to perform an analysis of the scientific literature related to etiology, epidemiology, diagnostic methods and prevention measures of MRSA infections. The bibliographic search was performed on the evidence-based sources, on the mostly relevant data bases – such as PubMed, HINARI, Google Scholar and other relevant sources.

Results. More studies have shown large affections within MRSA infected patients. MRSA bacteremia is a serious infection resulting in 20-50% 90-day mortality. Some authors do declare that vancomycin (VCM), the current standard therapy for MRSA, make treatment difficult. The use of vancomycin has been increasing since the mid-1980s, resulting in the emergence of MRSA with reduced susceptibility to vancomycin.

Another paper have shown that the prevalence of *S. aureus* and MRSA among healthcare workers (HCWs) was found to be 22.7% and 32.8% respectively. Regarding survival rate without and with VCM therapy, was 53.1 and 82.1% in the non-intervention and intervention groups, respectively. And meanwhile one paper says the only other approved drug for treatment of MRSA bacteremia, daptomycin, has not been shown to be superior to VMC, another one pretends that linezolid could be better than VMC.

Conclusions. Since 1980s – the first option for the treatment of invasive MRSA infections is the glycopeptide vancomycin, which continues to be the reference standard approach in this context. Anyways it has its limitations, which makes actual necessity of developing more efficient and harmless drugs.

Based on the combined analysis of randomized controlled trials, the efficacy of linezolid should be better than that of vancomycin in the treatment of infections caused by MRSA, but conclusions still need to be further validated by more well-designed randomized controlled trials of a large sample.