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Polymerase chain reaction in the detection of the methicillin-resistant *staphylococci*

Background: Methicillin resistant strains of *Staphylococcus aureus* (MRSA) were identified shortly upon the introduction of methicillin into the clinical practice. Rapid detection of MRSA is desirable.

Methods: *S. aureus* strains were isolated from hospitalized patients, including intensive care wards and other units. The identification of the *S. aureus* strains was made by phenotypic methods and automated methods (Vitek2Compact BioMerieux). The *MecA* gene of the clinical isolates detection has been unfold by PCR. The PBP2' latex agglutination test, Cefoxitin E-test and Oxacillin MIC as phenotypic methods of MRSA detection are evaluated and compared with the *mecA* detection by PCR, as the standard method to identify the MRSA strains.

Results: 57.5% of the isolated strains from different pathological products were MRSA and 42.5% were MSSA. The PBP2' latex agglutination test detected PBP2a in 55.3% of the tested strains leading to a sensitivity of 96.3% using *mecA* gene detection. Most of the MRSA isolates were multi-resistant to antibiotics, being resistant to β -lactamins, Aminoglycosides, Macrolides and Ciprofloxacin.

Conclusions: Molecular methods which detect the *mecA* gene are replacing the Oxacillin MIC method as the reference one. The comparison of the phenotypic methods with PCR reveals that among the first of them, PBP2a latex has a high sensitivity (97.9%), being used as an alternative phenotypic method for the MRSA detection. Following the resistance profiles of the strains, identified by these methods, we observe the existence among them of some different clones that reveal the importance of the correct identification of the MRSA strains for the infection therapy and its prophylaxis.

Biography

Lia Monica Junie is an MD, Ph D, Professor, Head Microbiology Department, "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj Napoca, Romania. She is a Coordinator of resident doctor's in the Laboratory Medicine specialty and Leadership PhD doctor's thesis in Medicine field. She is a Board Member of European professional Societies ESCMID (ESGCP Study Groups), Society of Chemotherapy, Scientia Parasitologica Pro Vita and is a Reviewer of international reviews, Member of International organizations, Director/Coordinator in research projects. She has more than 63 papers published in full in international journals and is an editorial board member of national reviews. She is an Organizer/President, Keynote, Invited Speaker and Chair of International and National Congresses.

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