E Petinaki et al., J Med Microb Diagn 2017, 6:2 (Suppl)
DOI: 10.4172/2161-0703-C1-008

Molecular characterization of *Staphylococcus aureus* isolated from Greek adults with Soft Skin Tissue Infections (SSTIs)

E Petinaki[1], S Mastraftsi[1], K Pantelidi[2], A Skoulakis[2] and A Roussaki[1]
[1]University Hospital of Larissa, Greece
[2]University of Thessaly, Greece

Statement of the Problem: *Staphylococcus aureus* is the most common cause of SSTIs worldwide, while a substantial rate is associated with methicillin-resistant *S. aureus* (MRSA). Although a large number of expert opinions, guidelines and recommendations for the management of SSTIs have been published over the last decades, the change of epidemiology of staphylococcal infections may lead sometimes to the failure of antibiotic therapy. The purpose of this study is to determine the rate of resistance to various antimicrobial agents and the molecular characterization of *S. aureus* isolated from SSTIs of adults in Thessaly, Central Greece, in order to understand the current epidemiology of *S. aureus* and so to establish a more targeted empiric therapy.

Methodology: Between 2015-2016, a total of one hundred twenty three *Staphylococcus aureus* isolates were collected from adult-patients with SSTIs in Thessaly, Central Greece. The isolates were tested for susceptibility to various antimicrobial agents and for the presence of various resistance and virulence determinants. Molecular typing of isolates was done by Multi Locus Sequence Typing (MLST).

Findings: Resistance rates to cefoxitin, fusidic acid, erythromycin, clindamycin, tetracycline, ofloxacin and gentamycin were 22%, 36.6%, 29.3%, 26.8%, 22%, 7.3% and 4.8% respectively, whereas, all were susceptible to vancomycin, teicoplanin, linezolid, mupirocin and daptomycin. The presence of *ermA*, *tetM* and *aac(6')-Ie-aph(2")* genes were found in erythromycin/clindamycin, tetracycline and gentamicin-resistant isolates respectively. Molecular characterization of isolates revealed the presence of two clones among MRSA (ST80 and ST225), while, among MSSA twelve different STs (ST1, 15, 45, 72, 7, 22, 728, 34, 59, 10, 398, 1153) were identified. The Panton-Valentin Leukocidin gene was detected in 39 strains, 18 MRSA which belonged to ST80, and 21 MSSA, which belonged to ST72 and ST728. The Toxic Shock Syndrome Toxin gene was found in ST34 MSSA strains.

Conclusion & Significance: In Greece, the increasing rate of resistance to clindamycin, erythromycin, fusidic acid and tetracycline must be taken under serious consideration in the initiation of empiric treatment of SSTIs.

Biography

E Petinaki is a Clinical Microbiologist, Professor and Head of Department of Microbiology of the University Hospital/Medical School of University of Thessaly in Larissa (Central Greece). Her research interest is focused on the epidemiology of nosocomial infections, on the characterization of mechanisms of antimicrobial resistance and on the application of molecular methods for the identification of etiological agent of infectious diseases. She is responsible for the teaching of Microbiology in several Under-graduate and Post-graduate programs of Greek Universities and she is Coordinator in many national research studies.

petinaki@med.uth.gr

Notes: