Determination of agr gene type in Staphylococcus aureus with multiple antibiotic resistance

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Abstract agr gene typing in multi drug resistance isolates of Staphylococcus aureus Introduction. Staphylococcus aureus is an opportunistic pathogen and causative agent of a wide range of infections in humans. Many isolates of this bacterium are resistant to antibiotics. The aim of this study was to investigate the drug resistance pattern of Staphylococcus aureus isolated clinical specimens in Rasht and to determine the type of agr gene in multidrug resistance isolates. Materials and Methods. Clinical isolates of Staphylococcus aureus were collected medical laboratories in Rasht. With biochemical and molecular tests, 85 strains of Staphylococcus aureus were identified. Antimicrobial resistance pattern of these isolates was investigated by disc diffusion method and agr gene type was determined by PCR. Results. All tested isolates were found as multidrug resistant. The most sisceptibility of the isolates were to vancomycin and the most resistance to amoxicillin. Of the 85 tested isolates, in 74 strains of Staphylococcus aureus, agr gene was identified using primers of the 4 types of this gene.64 isolates (86.5%) were identified as agr type 1, 5 isolates (6.8%), agr type 2, 3 isolates (4%), agr type 3 and 2 isolates (2.7%) agr type 4. In 11 isolates non of types of this gene was detected. Conclusion. This study shows the high prevalence of Staphylococcus aureus strains with multiple resistance and the dominant role of agr1 in clinical isolates in Rasht. Key words. Staphylococcus aureus, multiple antibiotic resistance, agr gene

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