

عنوان مقاله:

Investigation of the frequency of MDR Staphylococcus aureus strains in of hospital food and stool samples in patients with diarrhea in three hospitals of Tehran

محل انتشار:

بیستمین کنگره بین المللی میکروب شناسی ایران (سال: 1398)

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خلاصه مقاله:

Introduction and objectives: Increased frequency of Methicillin-resistant S. aureus (MRSA) infections imposes a high and increasing burden on healthcare resources. The epidemiology of MRSA is constantly changing, which results in variation in its drug-resistance patterns throughout regions and countries. We aimed to investigate the frequency of multidrug-resistant S. aureus (MDR-SA) in the hospital food and stool samples in patients with diarrhea. **Materials and Methods:** A total of 258 faecal samples from patients with diarrhea and 35 food samples were used to investigate infection with S. aureus. Methicillin-resistant S. aureus (MRSA) was characterized by the cefoxitin disk diffusion method in Mueller Hinton agar medium supplemented with 1% NaCl. PCR amplification of enterotoxin genes (sea, sec, and see) was carried out on all S. aureus. Susceptibility to 11 antimicrobial agents were analyzed by the standard disk diffusion method according to CLSI guidelines. **Results:** S. aureus was detected in 22.09% (57/258) of the stool samples and 14.28% (5/35) of food samples. Nearly, 10.5% (6/57) and 8.7% (5/57) of the strains from stool samples and 20% (1/5) and 20% (1/5) of the strains from food samples were characterized as MRSA and MDR, respectively. Resistance to most of the antibiotics was <20%, while highest one detected against tetracycline (24.5%). Low frequency of MDR patterns (3DR, 4DR, 5DR, and 6DR) were detected in the fecal and food S. aureus isolates. Among them, panta-drug resistant S. aureus was detected in 3.5% of the patients' isolates and triple-drug resistant phenotype was the only MDR pattern was detected in the food samples (2.8%). Nearly, 43.8% (25/57) of the strains carried the enterotoxin genes; the most common was sea+ (17.5%), sea+/see+ (5.2%), sec+(15.7%), sea+/sec+ (3.5%), and sea+/sec+/see+(1.7%). These genes were significantly higher among MDR compared to non-MDR S.

aureus strains isolated from the fecal or food samples (100% vs 39.2%). Conclusion: Involvement of MDR and enterotoxigenic S. aureus strains in the occurrence of gastroenteritis and their carriage in medical food samples highlighted the importance of food controls in prevention of gastrointestinal diseases, both in the community and clinical settings.

کلمات کلیدی:

.MDR-SA, MRSA, Enterotoxigenic S. aureus, Diarrhea

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