Prevalence and Resistance of Staphylococcus Aureus Isolated from Milk by Using PCR Method in Rafsanjan, Iran

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The zoonotic diseases are important factors in hygiene and health of each society. *Staphylococcus aureus* is considered as the third factor in levels of prominence of nutritional diseases.

The purpose of this descriptive-sectional study was to evaluate the prevalence and microbial resistance of this pathogenic factor in Rafsanjan.

To achieve this purpose, we randomly collected 240 cases from organizations of milk gathering. In Rafsanjan from April 2011 to March 2012 and they were transferred into the laboratory beside ice pieces with standard instructions. The volume of sampling 240 cases was determined by $n = Z^2 \times P \times (1-P)/d^2$ then nutrient broth and blood agar culture media had been prepared according to instruction of manufactory (Merck Laboratories, Germany) and after that the cases were transferred into these media. Separation and chemical tests were conducted by standards of department of standard and researches of Iran. Positive cases were used via molecular method (PCR) by means of DNA extraction site made by Cinnagen Company. In addition, we used special primers as defined by Kim, et al. to make polymerase chain reaction. Then antibiogram was conducted as disk diffusion by common antibiotics (tetracycline, penicillin, ampicillin, amoxicillin, gentamicin, cephalexin, cotrimoxazole, nalidixic acid, ceftriaxone). Antibiotic resistance model of separated linageages was determined by Kirby bauer baller standard method.

Each case was classified according to its inhibition zone into three categories: sensitive, semi sensitive and resistant. Finally gathered data were statistically analyzed via SPSS-17.1 statistical software, χ^2 test and Fisher's exact two-tailed test analysis were performed and differences were considered significant at values of $p<0.05$. In this study, 73 cases (30.41%) were positive after chemical tests and 62 cases were positive in molecular examination. This study also demonstrates that all of the positive cases via molecular method were resistant to penicillin, ampicillin, amoxicillin, gentamicin, 50 cases (68.49%) were sensitive to cephalexin, nalidixic acid, 48 cases (77.41%) were sensitive to cotrimoxazole and 59 cases (95.16%) were sensitive to ceftriaxone. The level of microbial infection of this product is so high which demonstrates infringement in the process of this product. So, we should reconsider the usage of this material for producing the products used by public.

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