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Determination of virulence factors and epidemiology of *staphylococci* isolated from bovine mastitis

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Statement of the Problem: Staphylococcal mastitis is one of the major economic problems of cattle. The aim of this study was to identify *Staphylococcus* species that cause mastitis, to examine the virulence factors of these species and to determine the relation between these factors with the pathogenic and apathogenic species.

Methodology & Theoretical Orientation: In this study, 84 *Staphylococcus* strains isolated from milk samples of 120 cows with clinical and sub-clinical mastitis and 80 healthy cows in different herds in the Aydın region were examined. The species-specific identification of *Staphylococcus* spp. was carried out with a commercial identification kit (Api-Staph, Bio Merieux®, Lyon, France). The virulence factors of the Staphylococcus isolates were determined with regard to coagulase, protein A, DNase, TNase, capsule, slime and biofilm, hemolytic activity, staphylokinase, hemagglutination, methicillin resistance tests.

Findings: In the study, 37 S. *aureus*, 13 S. *hyicus*, 9 S. *simulans*, 8 S. *chromogenes*, 5 S. *lentus*, 5 S. *epidermidis*, 2 S. *haemolyticus*, 2 S. *hominis*, 1 S. *auricularis*, 1 S. *warneri*, 1 S. *sciuri* were isolated and identified. The 41.6% of strains were determined as coagulase positive. In the coagulase positive strains, the rate of protein A, DNase, TNase, capsule, hemolyse, staphylokinase, slime (in agar), biofilm (microdilution) and hemagglutination characteristics were found 71.4%, 48.6%, 11.4%, 40%, 97.1%, 40%, 28.6%, 37.1% and 17.1%, respectively. In the coagulase negative strains, the rate of these characteristics were found 10.2%, 12.2%, 2%, 8.2%, 82%, 32.7%, 12.2%, 12.2% and 10.2%, respectively. The methicillin resistance rates in the coagulase positive and negative strains were determined as 2.9 and 16.3%.

Conclusion & Significance: In conclusion, it was of the opinion that animals are potential carrier of *Staphylococcus* strains that are pathogen for human.

Biography

Alper Ciftci is an expert in molecular microbiology and vaccine development. He finished his PhD at Ankara University, and now he works as an associate professor at Ondokuz Mayis University, Samsun, Turkey. He focuses on working development and validation of commercial products such as vaccine and diagnostic kits.

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