


Investigation of antimicrobial susceptibility and virulence factor genes in *Trueperella pyogenes* isolated from clinical mastitis cases of dairy cows

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Abstract

Trueperella pyogenes is an opportunistic pathogen causing important diseases including mastitis and metritis in domestic animals such as dairy cows leading to prominent economic losses in food production industry. The aim of this study was to investigate bacterial species, antimicrobial susceptibility, and presence of virulence factor genes and genotyping of *T. pyogenes* isolates associated with summer mastitis cases from 22 different farms around Tehran, Iran. Fifty-five percent of dairy cows with clinical mastitis symptoms was infected by *T. pyogenes* indicated that this pathogen is the most important contributor to clinical mastitis in dairy cows in the present study. A significant correlation was illustrated between presence of virulence factor genes of isolated pathogen, biochemical patterns, and the utter infected types. Multidrug resistance susceptibility observed between isolates indicated the important need for prudent use of antimicrobials in treatment of mastitis caused by *T. pyogenes* and increased concerning of consumer health associated with recent problems of antimicrobial resistance. The categorization of isolates was implemented into seven different clonal related types by COX-PCR at 80% of similarity cutoff with significance relationship to clonal types, CAMP test result and sampling time and biochemical profile. Regarding to the results obtained at the present study, *T. pyogenes* can be considered as an important typically cause of purulent and acute form of clinical bovine mastitis and loss of dairy productivity. Further studies with more sample size and high-throughput omic methods in various sampling time and areas are suggested for study of this pathogen precisely.

KEYWORDS

antimicrobial susceptibility, dairy cow, *Trueperella pyogenes*, virulence factor gene

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