Occurrence, Erythromycin and Tetracycline Resistance, and Trap Types of Staphylococcus aureus in the Nasal Cavity of Healthy Cattle, Sheep and Goats in Iran

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Background & Objectives: Nasal carriers of *Staphylococcus aureus* may serve as reservoirs for both the spread of the pathogen and predispose the host to subsequent infections. In Iran, neither the S. aureus nasal carriage rate nor the present genotypes or their antimicrobial susceptibly patterns are known in ruminants.

Methods: In the present study, 79 healthy cattle, 78 healthy sheep and 44 healthy goats were screened for nasal S. aureus carriage. The proportion of S. aureus-positive nasal swabs from cattle, sheep and goats were 5.06% (4/79), 14.1% (11/78) and 25% (11/44), respectively. S. aureus isolates were further assessed for the presence of tet(K), tet(M), erm(A) and erm(C) genes and trap typed.

Results: Among the 26 S. aureus isolates, 3 were PCR positive for tet(K) from which 2 and 1 belonged to cattle and sheep associated isolates, respectively. The tetracycline resistance gene tet(M) was also detected in one isolate from goat origin. No isolate was positive for erm(A) and erm(C) genes. The trap genotype distribution was trap type 2, 84.61 %; trap type 1, 11.54 %; and trap type 3, 3.85 %. None of the studied isolates were trap type 4. As results, nares of healthy ruminants could be a reservoir of S. aureus isolates harboring tetracycline resistance genes.

Concluosion: The current study indicated that certain trap types seems to be capable of ruminant nasal colonization.

Keywords: *Staphylococcus aureus*; Nasal Carriage; Ruminants; Resistance Genes