Phenotypic antimicrobial resistance profile of isolates causing mastitis in Korean black goat

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Introduction

Mastitis is the inflammatory disease of mammary glands which may cause partial or full damage to udder. Subclinical mastitis is one of the most important disease and considered a constant risk of infection for the whole herds and their environment. *Staphylococcus* spp. and other environmental pathogens have been proven as the main causative agents of mastitis.

Aim

The present work aims to isolate and identify bacteria that cause mastitis in Korea black goats and evaluates the antibacterial activity.

Methods

Milk and feces were sampled from 20 Korean black goat (*Capra hircus coreanae*) which were identified subclinical cases in Namwon, Jeonbuk, Korea 2018. Subclinical mastitis was confirmed by the somatic cell count (SCC) ≥ 300,000 cells/ml (Bentley Instruments, Chaska, MN, USA). Identification of the isolates was achieved using the Matrix Assisted Laser Desorption Ionization-Time of Flight mass spectrometry (Bruker Daltonics, Bremen, Germany). Antibacterial resistance was evaluated for *Staphylococcus* spp. and *Escherichia coli*. MICs were determined by agar dilution for commonly used antibiotics according to Clinical and Laboratory Standards Institute standards.

Results

In milk samples, 13 *S. aureus* (39%), 16 coagulase-negative staphylococci (CNS) (49%) and 2 E. coli were found while 2 *E. coli*, 2 CNS and 1 *Streptococcus pluranimalium* were isolated from feces samples. One S. aureus and 9 CNS from milk and 1 CNS from feces showed the methicillin resistance. For *Staphylococcus* spp., resistance for ampicillin and penicillin were 58% and amoxicillin/clavulanate, tetracycline and cephalexin were 21 ~ 27%. Resistance was absent/very low for enrofloxacin, marbofloxacin, gentamicin, clindamycin and chloramphenicol.

Conclusion

Even the size of Korean black goat farm is growing, the study was rare. This study showed antibacterial resistance and the need for surveillance.