Antimicrobial susceptibility patterns of respiratory tract pathogens isolated from sheep

Legesse Garedew¹; Hailu Tadeg²

¹Legesse Garedew (DVM, MSc), Faculty of Veterinary Medicine, University of Gondar, Ethiopia
²Hailu Tadeg (BPharm, MSc), Strengthening Pharmaceutical Systems/MSH, Addis Ababa Ethiopia

Respiratory diseases have been identified as an important problem of sheep in the highlands of Ethiopia for the last two to three decades. It may account for up to 54% of the overall mortality of sheep in the central highlands of Ethiopia. Respiratory diseases in sheep are reported to be caused by infections of microbial origins including bacteria, viruses and parasites. This study is undertaken to establish the prevalence of bacterial respiratory tract infections in the lungs of dead and slaughtered sheep and its susceptibility to commonly used antimicrobial agents. Pure and fresh isolated colonies of bacteria were taken and subjected to in-vitro susceptibility test using disc diffusion method. A total of 80 sheep lung samples were bacteriologically investigated and 87.5% of the samples yielded bacteria out of which 54.3% indicated mixed infections. The most commonly isolated organism is Staph. epidermidis (13.16%) followed by E. coli (11.41%), Staph. aureus (9.65%), M. haemolytica (7.89%), Citrobacter spp (7.89%) and P. multocida 8 (7.02%). Out of the total isolates 44.74% were gram negative. Antimicrobial sensitivity test revealed that Str. pyogenes, Staph. epidermidis, Neisseria spp and Str. pneumoniae were strongly sensitive to all antimicrobials used in this study. The highest resistances were observed in Str. uberis and E. faecalis, which showed resistance for six and five types of antimicrobials tested respectively. All bacterial isolates were sensitive to amikacin and chloramphenicol. In conclusion, this study indicated that amikacin and chloramphenicol are effective against all isolates examined compared to high level of resistance observed in penicillin G, tetracycline and clindamycin. Therefore, selection of antimicrobial agents should be guided by results of antimicrobial susceptibility tests when ever possible. It is also recommended that the rational use of antimicrobial therapy should be promoted in order to minimize further development of antimicrobial resistance.

Key words: bacterial isolates; antimicrobials; susceptibility