



STUDY OF ANTIBIOTIC RESISTANCE OF BACTERIA ISOLATED FROM BIOLOGICAL MATERIAL FROM GOATS

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Keywords: *antibiotic resistance, Corynebacterium pseudotuberculosis, Yersinia pseudotuberculosis, caseous lymphadenitis.*

Introduction. Caseous lymphadenitis primarily affects sheep and goats, although isolated cases of human infection have been reported. It is caused by the bacterium *Corynebacterium pseudotuberculosis*. The pathogen produces exo- and endotoxins with hemolytic, pyogenic, dermonecrotic properties. *C. pseudotuberculosis* belonging to the nitrate-negative biotype primarily infects sheep and goats, while the nitrate-positive biotype infects horses. A combination of these biotypes causes disease in cattle. *C. pseudotuberculosis* is naturally sensitive to β -lactams, vancomycin, aminoglycosides; resistant to erythromycin, clindamycin, tetracycline, and quinolones.

The aim of the work is a bacteriological study of biological material samples from goats and an analysis of the sensitivity of isolated bacteria to antimicrobial drugs.

Material and methods. Biological material for research was collected from 20 animals (clinically healthy and with signs of caseous lymphadenitis) from a single farm in the Kyiv region. We studied 102 samples of biological material from live animals (milk, mucus, faces, swabs from the pharynx and nasal cavity), material from animals slaughtered for diagnostic purposes (parenchymal organs (lymph nodes, lungs, liver, spleen, testes, blood from the heart). Bacteriological studies of samples were carried out by culturing on agarized nutrient media (Hoyle Medium, Baird-Parker Agar, Endo Agar, Yersinia Selective Agar Base, Palkam agar Lowenstein Jensen Medium). The isolated microorganisms were subjected to further identification by cultural-morphological and tinctorial signs, the ability of bacteria to metabolize substrates. The study of antimicrobial sensitivity of the identified microorganisms and the interpretation of the results were carried out by the disk diffusion method in accordance with EUCAST recommendations.

Results. The study revealed 24 cultures of *Corynebacterium pseudotuberculosis* (from the lymph nodes (pharyngeal, popliteal, testes, jejunum, colon), spleen, testes, from heart blood, saliva, swabs from the pharynx and nasal cavity. From 8 animals, 12 cultures of *Yersinia pseudotuberculosis* were isolated (6 cultures from saliva, knee joint, heart blood and 6 cultures from milk). *C. pseudotuberculosis* showed resistance to macrolides, tetracyclines, lincosamides, fluoroquinolones, and were moderately resistant to rifampicin. *Y. pseudotuberculosis* (isolated from saliva, knee joint, heart blood) were sensitive to ampicillin/sulbactam, cefadroxil, nitroxoline, chloramphenicol, nitrofurantoin, moderately resistant to piperacillin, cefpodoxime, meropenem, lomefloxacin, levofloxacin, aztreonam; were resistant to 17 antibacterial drugs (penicillins, cephalosporins, aminoglycosides, fluoroquinolones, polymyxin B). All cultures of *Y. pseudotuberculosis* isolated from milk showed resistance to penicillins and sensitivity to chloramphenicol. Four cultures of *Y. pseudotuberculosis* were resistant or moderately resistant to cephalosporins and carbapenems, aminoglycosides, tetracyclines, fluoroquinolones, and polymyxin B.

Conclusions. Meat and dairy products from goats are a risk factor for the spread of pathogenic bacteria resistant to antimicrobial drugs.