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Antimicrobial resistance in selected bacteria from poultry, in Albania

Antibiotic resistance does not respect geographical or biological borders. Thus, the use of antibiotics in one sector, setting or country affects the spread of resistance in others. Resistance to antibiotics is also a food safety concern considering the use of antibiotic in food animals, for treatment, disease prevention or growth promotion, thus allowing resistant bacteria and resistant genes to pass through the food chain from food animals to humans. Many countries have implemented prudent antibiotic use policies and surveillance systems both in clinical and veterinary settings, there are no such systems in Albania and little is known about the levels of antibiotic-resistant bacteria in food animals within the country. A total of 986 poultry samples were taken from different poultry breeding complexes of Albania over a 4-years period and were tested for the presence of *Enterobacteriaceae*. A total of 284 bacterial isolates were obtained and were characterised by species (*Escherichia coli* and *Salmonella* spp.) and by susceptibility to 14 antibiotics. Resistance rates of *E. coli* and *Salmonella* isolates were, respectively: amoxicillin (71%, 48%); enrofloksacina (65%, 42%); chloramphenicol (74%, 46%); gentamicin (62%, 79%); colistin sulfat (42.4%, 62.6%); neomicina (57%, 61%); enrofloxacin (65%, 42%); nalidixic acid (91%, 73%); sulphonamides (91%, 73%); tetracycline (82%, 51%); trimethoprim (73%, 77%); streptomycin (70%, 55%); doxyciclina (76%, 54%) and; oxytetracyclina (83%, 49%). Multidrug resistance to at least four antibiotics was observed in 95% of *E. coli* isolates and 82% of Salmonella. In conclusion, these data indicate that *Salmonella* and *E. coli* isolates from Albanian farms exhibit high to extremely high levels of antibiotic resistance; *Salmonella* and *E. Coli* isolates exhibit resistance to multiple antibiotics and multidrug resistance profiles among *Enterobacteriaceae* are geographically widespread. Implementation of prudent antibiotic use policies in food animals and related surveillance will be necessary to reduce the emergence, spread and establishment of highly resistant strains across poultry farms in Albania.

Speaker Biography

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