

THE SITUATION OF ANTIMICROBIAL RESISTANCE OF ENTERIC BACTERIA ISOLATED FROM ANIMAL ORIGIN TO QUINOLONES AND FLUOROQUINOLONES

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Summary. The aim of this study was to determine minimal inhibitory concentration (MIC) values of *Escherichia coli* and *Salmonella enterica* as the most important bacteria family *Enterobacteriaceae* and to evaluate their clinical and epidemiological resistance to quinolones and fluoroquinolones. One hundred and thirty seven strains of *Escherichia coli* and 75 strains of *Salmonella enterica* from different species of animals from different farms (cattle, pigs and poultry) were tested for susceptibility. Nalidixic acid and ciprofloxacin were selected as representatives of quinolones and fluoroquinolones respectively. Results showed that total clinical resistance of *E. coli* isolated from clinical material of animals to nalidixic acid was 44.5%, to ciprofloxacin – and 34.4%. In addition, 22.0% of total *E. coli* were highly resistant to nalidixic acid with MIC value of 256 mg/L and 12.0% of *E. coli* MIC values to ciprofloxacin were also high – 8 mg/L. *S. enterica* demonstrated frequent resistance to nalidixic acid (41.3%) however only 5.3% were resistant to ciprofloxacin with lowest breakpoint value – 0.5 mg/L. *E. coli* isolates from poultry showed to be more frequent resistant to quinolones and fluoroquinolones. Cattle isolates had the lowest frequency of resistance.

Epidemiological susceptibility was counted according to cut-off values (EUCAST). Results showed that 53.0% of *E. coli* had MIC values higher than epidemiological cut-off values to nalidixic acid and 34.0% – to ciprofloxacin. 41.0% of *Salmonella* were epidemiologically resistant to both nalidixic acid and ciprofloxacin and that fact may demonstrate increasing resistance of *Salmonella* to fluoroquinolones.

Keywords: nalidixic acid, ciprofloxacin, *Salmonella*, *Escherichia coli*, clinical resistance, epidemiological resistance.