ABSTRACT

Introduction: Use of antimicrobial growth promoters in food animals is known to select resistant bacteria and they eventually reaches humans through the food chain. Surveillance of antibiotic resistance in bacteria of food animals allows detection of developing antibiotic resistance in food chain.

Objectives: To determine the prevalence of *Salmonella* spp., *Escherichia coli*, *Enterococcus faecium*, and *E.faecalis* in broilers, pigs and cattle, and antimicrobial susceptibility pattern (AMSP) of them in relation to, antibiotic usage in food animals in the Colombo district.

Methods: Faecal swabs from 485 animals from randomly selected 18 farms were collected. Specimens were inoculated on to brain heart Infusion broth supplemented with 6.5 % saline, tetrathionate broth, XLD, MacConkey and Slanetz Bartley agar plates. *Salmonella* spp., *E. coli*, *E. faecium*, and *E. faecalis* were identified by biochemical tests. 422 isolates were tested for antibiotic susceptibility by disk diffusion method, CLSI 2012.Data on antibiotic usage was collected through a questionnaire.

Results: Prevalence of *Salmonella, E. coli, E. faecium,* and *E. faecalis*, among broilers and cattle were 3%, 54%, 43%, and 21% and 2%, 48%, 16% and 30% respectively. Non susceptibility to multiple antibiotics were observed in 211(50%) of the isolates and majority were from poultry (48%). There was a statistically significant higher non-susceptibility among broiler *E.coli* to ciprofloxacin, ampicillin and cotrimoxazole and

enterococci to vancomycin, compared to cattle and swine isolates. AMSP of isolates from the two farms where antibiotics were used routinely was not significantly different to isolates from others except that susceptibility to vancomycin of *E. faecium* from farm 1 & 11 was significantly low compared to other farms. This can't be explained with the enrofloxacin usage in these farms as it is from another class of antibiotic.

Conclusions: The significant higher resistance against antibiotics in *E. coli, Salmonella* & *Enterococcus* spp. strains isolated from broilers. Thus there is a necessity to conduct a properly designed research to study the situation in the whole country with widespread collection of data regarding antimicrobial use in farms, antibiotic sale from pharmacies and veterinary product outlets and food adulteration practices in companies producing commercial animal feed.