Antibiotic resistance of *Salmonella enterica* producing Extended-spectrum B-lactamases (ESBLs) type CMY-2, in poultry

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Abstract

**Background and Objective:** *Salmonella* is one of the most important zoonotic pathogens responsible for food-borne infections all over the world. Poultry products are widely acknowledged to be a significant reservoir for *Salmonella*. This study was done to evaluate the antibiotic resistant of *Salmonella enterica* producer of beta lactamase spectrum in poultry.

**Methods:** In this descriptive – laborator study 70 *Salmonella enterica* serotypes were collected from poultry. All *Salmonella* isolates were tested to antimicrobial susceptibility testing by the Kirby-Bauer disk diffusion according to Clinical Laboratory Standards Institute (CLSI). Twenty-nine antibiotics were used in this study. *Klebsiella pneumoniae*, ATCC 700603 was used as quality control strains. The isolates were determined to be ESBL-producing *Salmonella* by the conventional double-disk synergy and genotypic method.

**Results:** Among 70 salmonella isolates, the most prevalent serotypes were *S.typhimurium* and *S.enteritidis*. All serotypes were susceptible to gentamicin, ciprofloxacin, oflaxacin, imipenem, enrofloxacin. The common resistance was observed to cephalexin (96%), cefazolin (96%) and cephalotin (65%). Among the 70 Salmonella isolates studied, multi-drug resistance was observed in 59 (84%) isolates. Forty-seven (67%) isolates were found to be ESBL-producing isolates. PCR assay of all isolates showed that 17 isolates (33.3%) carried bala CMY2 gene.

**Conclusion:** This study showed that antibiotic resistance to *Salmonella enterica* serotypes is due to beta lactamase enzyme in this strain is considerably increased in poultry.

**Keywords:** *Salmonella enterica*, ESBL, Multi-drug resistant, *Bala CMY2* gene

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