Detection of *Salmonella* at local poultry farms by rapid and reliable molecular diagnostic method

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Introduction: *Salmonella enterica* having more than 2600 serovars causes moderate to severe gastrointestinal infections in humans and animals. *Salmonella enterica* serovar Gallinarum biovars Gallinarum and Pullorum (S. Gallinarum and *S.* Pullorum) are poultry specific bacterial pathogens causing fowl typhoid and pullorum disease respectively while *S.* Typhimurium and *S.* Enteritidis cause chicken infections of zoonotic importance. These infections are of considerable economic importance so early and precise diagnosis of the particular *Salmonella* is mandatory for effective treatment. Currently conventional diagnostic method practiced is based on postmortem guess which lack specificity and sensitivity. Once diagnosed, *Salmonella* infections are treated by excessive use to antibiotics in drinking water. The choice of antibiotics is usually based on previous treatment experience or just easy availability, while the sensitivity of the prevailing *Salmonella* serovars against particular antibiotic has not been investigated, thus not considered. This irrational use of antibiotics often results in treatment failure, so the veterinary doctors have no choice except to try other antibiotic. Such hit and trial approach causes huge economic loss to the poultry farmers as the cost of antibiotics used for larger controlled poultry sheds is very high.

Objective: To detect *Salmonella* at local poultry farms by rapid and reliable molecular diagnostic method and to provide the base line data about sensitivity/resistance of the prevailing *Salmonella* serovars against commonly used antibiotics.

Methodology: Suspected samples from local poultry farms were collected. These samples are being tested for *Salmonella* serovars by biochemical and molecular assays. The antimicrobial sensitivity/resistance will be checked phenotypically by disc diffusion assay followed by molecular detection of drug resistance genes.

Results: Analysis of samples is ongoing.

Discussion: This information will be helpful for doctors to select the effective antibiotic against which the resistance has not yet developed in local isolates of *Salmonella.*