PA-104 CURRENT PATTERNS AND PREDICTIVE TRENDS OF MULTIDRUG-RESISTANT *SALMONELLA TYPHI* IN SUDAN

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Background Enteric fever has a persistently great impact on public health. It is caused by *Salmonella enterica* associated with malaria during the rainy season; the bacterium is seldom detected in wastewater of stabilisation stations due to treatment processes. The aim of this study is to evaluate the recent state of antibiotics susceptibility of *Salmonella typhi* with special attention to multidrug-resistant strains and predict the emergence of new resistance patterns.

Methods *S. typhi* isolates were recovered from 128 wastewater samples collected from ponds at Soba Stabilization Station and Omdurman Hospital Stabilization Station. The isolates were identified using standard *Salmonella* identification guidelines and their susceptibility to seven antibiotics was determined. Minimum inhibitory concentration (MIC) of ciprofloxacin and minimum bactericidal concentrations (MBC) were also determined. Statistical predictions for the resistance emergence were done using logistic regression and forecasting linear equations.

Results A total of 12 *S. typhi* isolated strains were recovered from 128 samples of wastewater; they were resistant to antibiotics except Ciprofloxacin. Current patterns of ciprofloxacin breakpoints interpretations were in susceptible ranges by disc diffusion ($S \geq 20$ mm), minimum inhibitory concentration was recorded as ($I = 16$ μg/ml) and minimum bactericidal concentration=($R \geq 32$ μg/ml). The probability of an isolate to develop resistance was plotted for MBCs; the rate of resistance solved by ($y = 0.0235 \times -0.0411$). The predictive patterns of resistance were spontaneously solved using exponential trend ($y = n\ e^x$) for each isolate at 16 μg/ml and 32 μg/ml of ciprofloxacin in certain period and the high values of coefficient $R^2 > 0.5$ indicate the incidence rates of bacterial resistance.

Conclusions The current sensitivity patterns of *S. typhi* isolates against ciprofloxacin were acceptable, but the probability of emerging multidrug resistance to ciprofloxacin was observed in sensitivity which had begun to decline according to frequent consuming, drug policy and bacterial genetic mutations.