Abstract

Background:Urinary tract infections (UTIs) during pregnancy are among the most common infections worldwide, leading to poor perinatal and maternal outcomes. This study aimed at profiling ESBL-resistant genes and deducing the antibiofilm formation activity of Escherichia coliisolates obtained from pregnant women against the commonly used antibiotics.

Methods: Hospital-based cross-sectional study was conducted from March to June 2020, total of 199 pregnant women were involved. Mid-stream urine samples were collected and cultured on CLED at 37ºC overnight. Positive growths were biochemically analysed for the E. coliisolates identification, drug susceptibility tests wereconducted by Kirby Bauer disc diffusion techniqueandthe PCR technique was used to detect the ESBL genes. The antibiofilm formation was analyzed using the ordinary one-way ANOVA Dunnett's multiple comparison tests (GraphPad Prism, version 9.3)anddata was presented in bar graphs.

Results:Out of the positive growth, 28(23.5%) isolates, E. colispecies demonstrate resistance to selected antibiotics. From 12(42.9%) isolates that shows high drug resistance were investigated for ESBL gene profiling, where 8(42.1%) of them had blaCTX-M, 6(31.6%) had blaTEM and blaSHV 5(26.31%)and8(66.7%) showed the ability to form antibiofilm against the commonly used antibiotics with 91.66% statistical significance at different levels.

Conclusions:The MDR for commonly prescribed drugs and the high prevalence of bacterial UTI were observed with a significant number of ESBL producers. In light of these findings, biofilm formation with antimicrobial resistance genes in urinary tract infection may lead to difficult-to-treat infections.