

Phylogenetic grouping and virulence characterization of ESBL-producing and non-producing vaginal *Escherichia coli*

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This study was carried out for genotypic characterization of ESBL-producing vaginal *Escherichia coli* isolates (40 isolates) from pregnant and non-pregnant women, in comparison with ESBL-non-producers (21 isolates), in terms of phylogenetic group and ExPEC VFs' distribution. Most ESBL producers and non-producers were distributed between phylogroups A (37.5% vs. 57.1%, respectively) and B2 (45.0% vs. 44.2%, respectively). Also, ESBL producers and non-producers did not differ significantly for all of this study including virulence factors. In both, *papC*, *sfa/foc*, *hly*, and *neuC* were more frequent in groups B2 and D than in groups A/B1, and high rates of multiple virulence factors possession were demonstrated only among isolates belonged to groups B2 (77.7% vs. 100%, respectively) and D (71.4%, only in ESBL producers). Comparison of CTX-M producers with ESBL-non-producers, revealed that most of them were distributed between phylogroups A (32.2% vs. 57.1%, respectively) and B2 (48.3% vs. 42.8%, respectively). Furthermore, they did not differ significantly for all of the studied VFs. Also, all multidrug resistant (MDR) ESBL-non producers in comparison with MDR ESBL-producers belonged to phylogroup B2 (100.0% vs. 44.4%, respectively) and that their virulence was much higher than that of MDR-ESBL producers. As a whole, 56.5%, 26.0%, and 17.3% of MDR isolates (both ESBL producers and non-producers) clustered in groups B2, A, and D, respectively. It can be concluded that, ESBL genes' acquisition and production is independent of bacterial phylogroup or virulence, instead the continuous exposure of both virulent and avirulent bacteria to antibiotics seems to be the determining factor of antimicrobial resistance.

Biography

Sareaa M. G. Al-Mayahie completed Ph.D. at the age of 37 years from Baghdad University and she is a University instructor (assistant Professor) at the Department of Biology/College of Science/University of Wasit/ Iraq. She has published 7 papers in reputed journals (five inside Iraq and two outside Iraq).

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