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First report of QNRA isolated from extended spectrum B-lactamase producing hospital-acquired *Klebsiella pheumoniae* in Kuwait

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Introduction / objectives

Extended Spectrum beta-lactamase (ESBL)-mediated resistant *Klebsiella pneumoniae* are important opportunistic pathogens. In this study we investigated the prevalence of plasmid-mediated fluoroquinolone resistance in ESBL-producing *K. pneumoniae* in nosocomial infections in Kuwait.

Methods

From a total of 72 non-duplicate quinolone and cephalosporin resistant *Enterobacteriacae* obtained from October-December 2010 from Ahmadi hospital in Kuwait, 16 were *K. pneumoniae*. Antimicrobial susceptibility was determined by Vitek, Microscan, double disc diffusion, agar dilution and E-test against a panel of 26 antimicrobial agents. The presence of *bla*SHV, *bla*TEM, *bla*CTX-M, *gyr*A, *par*C, *qnr*A, *qnr*B, *qnr*S and class 1 integrons were determined by PCR and sequencing. Pulsed-field gel electrophoresis (PFGE) was used for typing the strains and the results were analysed according to Tenover criteria.

Results

All 16 isolates were resistant to all antibiotics tested including ciproflaxoacin (MIC>4), tazobactam (MIC>16), cefotaxime (MIC>16) and ceftazidime (MIC>16); except for carbapenems, amikacin, and tigecycline. *bla*TEM, *bla*SHV& &*bla*CTX-M-15 were present in 81.25% (13), 81.25% (13) and 68.75% (11) respectively. Nine (56.25%) isolates contained all three *bla* genes of which one harboured *qnr*A (A2 allele) and a class 1 integron. No mutations were found in *gyr*A and *par*C. PFGE revealed that *K. pneumoniae* isolates harbouring ESBL genes consisted of two distinct clones.

Conclusion

Contrary to a previous study, we hereby report the emergence of plasmid-mediated *qnr*A gene among ESBL producing nosocomial *K. pneumoniae* for the first time in Kuwait. Identification of these strains are crucial for administering the correct antibiotic and preventing their spread among hospitalised patients.

Disclosure of interest

None declared.

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