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Investigation of plasmid-mediated Quinolone resistance in *Escherichia coli* and *Klebsiella pneumoniae* strains

Recep Kesli, Davut Cufali and Cengiz Demir Afyon Kocatepe University Turkey

Background & Aim: Quinolone resistance has been increasing in recent years. Currently there are three transferable, plasmid-borne quinolone resistance genes, *qnr*, (*qnrA*, *qnrB*, *qnrC* and *qnrS*) cr variant of aac(6')-Ib-cr, qepA. The aim of this study was to investigate the presence of plasmid mediated quinolone resistance genes in *E.coli* and *K. pneumoniae* strains isolated from our hospital.

Methods: In this study, *qnr*A, *qnr*B, *qnr*S and *qnr*C and also qepA, aac(6')-1b-cr plasmid genes were analyzed by molecular methods in quinolone resistant 13 7 *E.coli* and 15 *K. pneumonia* isolated in Afyon Kocatepe University hospital. *qnr*A, *qnr*B, *qnr*S and *qnr*C, qepA were screened by real-time PCR (Rotorgene, Qiagen). The aac(6')-1b-cr variant was identified by digestion with BseGI restriction enzyme.

Results: The prevalence of Extended Spectrum Beta Lactamases (ESBL) production was 52.6% in all isolates (66 *E.coli*, 14 *K. pneumoniae*). The *qnr* genes were detected in three strains. Two strains were positive for *qnrB* (1 *E.coli*, 1 *K. pneumoniae*) while one *E.coli* strain was positive for *qnrS* and these strains were producing ESBL. None of the strains had qepA type genes plasmid. aac (6')-1b-cr plasmid was found 44.7%. Among ESBL producer isolates, this rate was up to 52.5%.

Conclusions: In conclusion, the frequency of *qnr* is reported that to be low in our country, but nonetheless these strains may initiate a rapid increase in bacterial resistance to valuable antimicrobial agents. The prudent use of these antimicrobial agents in clinical practice is necessary to minimize the spread of these resistance genes.

Biography

Recep Kesli was graduated from Erciyes University, Faculty of Medicine. He has obtained Microbiology Specialist title in 2001. He is working at Afyon Kocatepe University, School of Medicine as an Associate Professor and Chair. He has published a book and wrote many book chapters. His areas of interests are diagnostic techniques of HCV, *Helicobacter pylori* and anaerobic bacteria. He has also published articles in international SCI/SCIE and national journals (more than 60) in Turkish and English.

recepkesli@gmail.com

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