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Epidemiology of Acinetobacter baumannii containing PER-like extended spectrum beta lactamases in Kuwait.

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Abstract

Acinetobacterbaumannii is one of the most important opportunistic pathogens causing serious complications. In recent years the prevalence of resistance to antibiotics has raised serious concern. Resistance to carbapenems is mainly caused by the OXA type enzymes; however resistance to cephalosporines are caused by chromosomal AmpC or by extended spectrum beta-lactamases, such as PER. The group investigated the epidemiology of PER-like enzymes among the clinical A. baumannii recovered in a governmental secondary hospital in Kuwait from July 2011-August 2012. One hundred and ten non-duplicate *Acinetobacter* isolates were collected from the clinical microbiology laboratory. Antibiotic susceptibility testing was performed by Vitek2 and examined according to the CLSI guidelines. *gyrB* multiplex PCR was performed to identify *Acinetobacter* species. PCR was used to amplify and sequences *bla* (OXA-types) carbapenemases, insertion elements, *bla*(NDM), *bla*(PER), *bla*(GES), *bla*(VIM) and *bla*(IMP). PFGE was used to genotype the isolates. *bla*(OXA-23) was identified in 28 *A.baumannii* isolates, *bla*(OXA-24) in 6, GES-type in 1 and PER-like in 6 isolates. PFGE analysis revealed 12 different pulsed-field types of *A. baumannii*. All strains containing the PER-7 like enzyme contained OXA-23 and belonged to two different PFGE types. Two point mutations on the Ω-loop of the PER-7 protein were detected which may be significant in increasing resistance. These point mutations may be caused when cephalosporins were administered to the patients prior to colistin. The PER-7 gene has been shown to be located on multi-resistance plasmids; therefore in order to monitor and to control the spread of horizontal transfer of resistance; genotyping studies are essential.

Biography

Leila Vali completed her Ph.D from Edinburgh University, UK and postdoctoral studies from Medical College of Wisconsin, Milwaukee and Edinburgh University. She has been a lecturer in Strathclyde University, UK and is currently an Assistant professor in Kuwait University. She has published 16 papers in reputable refereed journals.