

ID: 324

β -lactamases and carbapenemases-Producing *Enterobacteriaceae*

ABED Hanane, Touati Nouredine

Research Laboratory Health and Environnement (SANENV), Faculty SNV-TU, University Bordj Bou Arreridj, Algeria.

Abstract

Along with the recent spread of multidrug-resistant bacteria, outbreaks of extended-spectrum β -lactamase (ESBL) and carbapenemase-producing bacteria present a serious challenge to clinicians. β -lactam antibiotics are the most frequently used antibacterial agents and ESBLs, and carbapenemases confer resistance not only to carbapenem antibiotics but also to penicillin and cephem antibiotics. Therefore, resistance to carbapenems presents a significant threat to patients who are immunocompromised and are therefore susceptible to infections caused by multidrug-resistant bacteria all over the world. The mechanism of β -lactam resistance involves an efflux pump, reduced permeability, altered transpeptidases, and inactivation by β -lactamases. Various ESBLs and carbapenemases have been reported in the *Enterobacteriaceae* including *Enterobacter*, *Klebsiella*, *Escherichia coli* and other opportunistic species such as *Serratia*, *Acinetobacter*, and *Pseudomonas*. many different types of ESBLs and carbapenemases have emerged with different enzymatic characteristics. it is essential for clinicians to understand the characteristics of infecting pathogens. we summarize the current knowledge on carbapenem resistance by ESBLs and carbapenemases with the aim of aiding critical care clinicians in their therapeutic decision making.

Key Words: *Multidrug resistance, Enterobacteriaceae, β -lactamases, β -lactamases, Classification*

