

Clinical and molecular characterization of ESBL-producing enterobacteria isolated from bacteremia in a university

García, C. P., Rubilar, P. C., Vicentini, H. D., Román, G. J., León, C. E., Muñoz, C. G., ... & Labarca, L. J. (2011). Clinical and molecular characterization of ESBL-producing enterobacteria isolated from bacteremia in a university hospital. *Revista chilena de infectología: organo oficial de la Sociedad Chilena de Infectología*, 28(6), 563-571.

Abstract

Introduction Extended-spectrum- β -lactamases (ESBL) are plasmid-encoded enzymes that confer resistance to multiple antimicrobials. ESBL-producing enterobacteria that cause bacteremia limit therapeutic options and increase mortality. **Objective** To perform a clinical and molecular description of bacteremia caused by ESBL-producing enterobacteria. **Method** We retrospectively studied the cases of bacteremia due to ESBL-producing *Escherichia coli*, *Klebsiella pneumoniae* and *Proteus* spp in adults admitted to a university hospital during the years 2004-2007. We reviewed the clinical records and antimicrobial susceptibility patterns. **Molecular typing** was performed by polymerase chain reaction and study of clonality by pulsed-field electrophoresis. **Results** We found a prevalence of 9.8% ESBL in enterobacteria causing bacteremia. Decreased susceptibility to quinolones and aminoglycosides was observed, without resistance to carbapenems. The predominant ESBL types were CTX-M (96%), TEM (62%) and GES (28%). 79% of the strains presented more than one type of ESBL. **Clinical analysis** revealed high prevalence of risk factors, previous use of antimicrobials and of invasive devices. There was no significant clonality. **Conclusion** The presence of ESBLs in bloodstream infections is a clinical problem that must be considered when choosing empiric therapy.