

TITLE: Extended-spectrum beta-lactamases (ESBL) type CTX-M producing Enterobacteriaceae in veterinary hospital environment.

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The process of bacterial evolution to antibiotic resistance is natural, but due to the high selective pressure resulting from the misuse of antibiotics this process has been accelerated. The large amount of multiresistant bacteria that have been isolated is a public health problem. Enterobacteria are usually commensal bacteria, but they can cause infections, and the production of β -lactamases is the most important resistance characteristic among them. In order to better characterize circulating and potentially infectious microorganisms in the veterinary hospital environment, this study aimed to identify Extended-spectrum beta-lactamases producing Enterobacteriaceae in veterinary hospital environment. Swabs were collected from objects that come in contact with the patients and with the professionals. Enterobacteria were identified biochemically. For the phenotypic detection of beta-lactamase, disc approximation and disc diffusion techniques were used with β -lactam antibiotics: amoxicillin + clavulanic acid, piperacillin + tazobactam, ampicillin, cefalotin, cefoxitin, cefotaxime, cefepime and ertapenem. The genotype of the potential CTX-M produced by PCR was also characterized. A total of 306 samples were identified, among them, 118 enterobacteria were identified as follows: *Escherichia coli* 56, *Enterobacter* spp 25, *Klebsiella* spp 19, *Proteus mirabilis* 13, *Serratia* spp 03, *Citrobacter* spp 02. Among the enterobacteria identified 43 (36,44%) did not present resistance to any of the antibiotics tested, 34 (28.8%) were resistant to three or more categories of β -lactams tested being classified as multiresistant, 17 produced extended-spectrum β -lactamase and 15 of these were of CTX-M type. It is of great importance to know the bacterial population circulating in the veterinary hospital environment, and its antimicrobial resistance, so that professionals can take appropriate measures to minimize the risks of infection.

Keywords: antimicrobial resistance, veterinary medicine, *Escherichia coli*, *Enterobacter* sp.