OCCURRENCE OF ESBL-PRODUCING *Escherichia coli* NOSOCOMIAL STRAINS ISOLATED FROM PATIENTS IN A TERTIARY CARE HOSPITAL IN CEARÁ, BRAZIL

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Abstract:

Escherichia coli is an important causative agent of serious infections in hospitalized patients, especially for presenting resistance to different antimicrobial agents. Furthermore, this pathogen can express extended-spectrum β-lactamases (ESBL) that make them resistant to various β-lactams. ESBL-producing *E. coli* are a major problem in hospitals worldwide complicating the treatment of infected patients. This study aimed to determine the prevalence of strains of ESBL-producing *E. coli* obtained from patients with nosocomial infection hospitalized in clinical and surgical wards, and intensive care units (ICUs) at Santa Casa de Misericórdia de Sobral (SCMS), a tertiary support hospital in northern state of Ceará. From March to August 2014, eighteen clinical isolates of ESBL-producing *E. coli* were evaluated. Samples were obtained at various sites such as blood, saliva, urine, and tracheal aspirate. Initially, the identification of the isolates and the phenotypic detection of ESBL were carried out by the automated system Vitek2 at SCMS. After this, the isolates were forwarded to Microbiology Laboratory of the Federal University of Ceará (UFC) in Sobral and were performed conventional biochemical tests to confirmation of initial identity of the isolates, and the ESBL production was analyzed. Of the 18 specimens identified initially as *E. coli* by Vitek2, one (4.54%) isolate showed discordant result in identifying by biochemical tests, however the others isolates were confirmed as *E. coli.* Of the total samples, 12 (70.58%) were diagnosed phenotypically as ESBL producers. Therefore, these results demonstrate a high incidence of ESBL-positive *E. coli* isolated from patients with nosocomial infections in hospital researched. Thus, early detection of clinical isolates ESBL-producing *E. coli* is essential for the implementation of suitable therapeutic measures as well as to establish contact prevention measures to avoid the spread of these pathogens in the hospital environment.

Keywords: Nosocomial infection, *Escherichia coli,* ESBL.

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