

**TITLE:** ANTIMICROBIAL RESISTANCE PROFILE OF *Escherichia coli* ISOLATED FROM COMMUNITY INFECTIONS OF THE URINARY TRACT

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**ABSTRACT:**

Urinary tract infections (UTI) are one of the most common bacterial community pathologies. Due to their large occurrence, these infections are one of the main reasons that lead men and especially women of different age groups to seek treatment in health units. UTI is characterized by the invasion and multiplication of microorganisms in any portion of the urinary tract, which can cause conditions ranging from simple cystitis to sepsis. The high incidence and the fact that UTI usually present only mild symptoms imply the frequent adoption of empirical antimicrobial treatments. However, the success of this treatment depends on the resistance profile of the etiologic agent, which needs to be monitored periodically. The aim of this study was identify the resistance profile of bacteria isolated from positive urine cultures carried out in a clinical analysis laboratory, in the city of Espera Feliz-MG (approximately 25,000 inhabitants), and correlate the frequency of UTI with sex and age of outpatients. Between January and December 2019, the laboratory issued 633 clinical uroculture reports, and of these, 17.6% had a positive diagnosis for UTI ( $\geq 10^5$  CFU/mL), and in all cases the infection was caused by *Escherichia coli*. We observed that 93.7% of the positive urine cultures were from women, while only 6.3% were from men. All *E. coli* isolates were resistant to at least one of the antibiotics tested, being 58.9% of the strains resistant to amoxicillin, 37.9% to clindamycin, 33.7% to cephalexin, 17.9% to azithromycin, 9.5% to ciprofloxacin, 8.4% to cephalothin, 6.3% to chloramphenicol, and 5.3% to cefaclor. Our data show that UTI was more frequent in young females, and that the high rate of resistance to amoxicillin observed here suggests a review regarding the use of this drug in the empirical treatment of community UTI. In addition, the high level of resistance to clindamycin, observed exclusively in samples from female patients, draws attention to the need for monitoring. Knowing the prevalence of etiological agents and their respective resistance profiles makes it possible to optimize the empirical treatment of UTI. However, given the accelerated emergence of multiresistant strains, the most prudent path is still to start treatment with antimicrobials only after the analysis of the antibiogram.

**Keywords:** Drug Resistance, *Escherichia coli*, Urinary Tract Infections.

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