

TITLE: ANTIMICROBIAL RESISTANCE TO BETA-LACTAMS IN *ESCHERICHIA COLI* ISOLATED FROM CHILDREN WITH DIARRHEA.

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ABSTRACT: Diarrheal diseases caused by bacterial pathogens are a major problem worldwide, especially in developing countries. Knowledge of antimicrobial resistance of diarrheagenic pathogens is important in selecting the appropriate therapy, because many patients with gastroenteritis are treated empirically with antibiotics and the antimicrobials may not be effective. *Escherichia coli* (*E. coli*) that can potentially cause diarrhea in children can also carry resistance phenotypes to a wide variety of antibiotics. Its epidemiological importance is evident, especially in children and neonates. Extended-spectrum beta-lactamase-producing microorganisms such as some *E. coli* strains may destroy even antibiotics such as penicillins and cephalosporins of the latest generation. In this work, we investigated the presence of beta-lactamase-producing *E. coli* resistant to third generation cephalosporins (cefotaxime, ceftazidime and ceftriaxone) and monobactam (aztreonam) in feces samples from children up to two years old, with typical symptom of diarrhea. Of the 115 samples analyzed, *E. coli* was isolated and identified biochemically in 74 (65.2%), evidencing the importance of this microorganism in diarrheal infections. All strains were resistant to at least one of the four antibiotics tested. In relation to the distribution of antimicrobial resistance, a higher frequency of resistance was observed with antibiotic aztreonam (25/74, 33.8%), followed by cefotaxime (13/74, 17.6%), ceftazidime (9/74; 12.2%) and ceftriaxone (7/74, 9.4%). No strain was phenotypically identified as a beta-lactamase producer. However, the high frequency of resistance to the antibiotic aztreonam is of concern, because this drug is indicated in therapeutic failure with third generation cephalosporins. In addition, three strains showed resistance to all antibiotics tested (the third generation cephalosporins and aztreonam) evidencing a potential for therapeutic failure in severe infections produced by these strains.

Keywords: EFEC, *Escherichia coli*, neonates.

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