TITLE: PHENOTYPIC AND GENOTYPIC CHARACTERIZATION OF CTX-M-65 EXTENDED-SPECTRUM BETA-LACTAMASE-PRODUCING *SALMONELLA* INFANTIS FROM CLINICAL ISOLATE IN BRAZIL

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Salmonella enterica serovar Infantis has been recognized as one of the most frequent causes of bacterial foodborne illness worldwide and resistant to multiple groups of antimicrobials. Many countries have reported increasing incidence of *S*. Infantis infections, and the *World Health Organization* (WHO) states that *S*. Infantis is among the top 15 *Salmonella* serovars reported from all regions. Infections with ESBL-producing organisms are particularly concerning because they are not only resistant to most of the beta-lactam antimicrobials but also are commonly resistant to additional classes of antimicrobials, leaving few treatment options and the potential for worse clinical outcomes. The $bla_{\text{CTX-M-65}}$ gene had been described in *Escherichia coli* from humans in North America, but it may have only recently emerged in *Salmonella*. The spread of CTX-M-65 is concerning because the presence of ESBLs eliminates two recommended treatment options, ceftriaxone and ampicillin, for the management of salmonellosis. An isolate recovered from the stool of a patient with diarrhea was received in 2013 at the Bacteriology Center. This isolate was identified as serovar Infantis by the Kauffman-White serotyping scheme. Antimicrobial susceptibility testing (AST) was performed by disk diffusion. MIC values were determined for cephalosporines and fluorquinolones by Etest. Resistance genes from the known cephalosporins groups ($bla_{\text{CTX-M-2,8,15}}$) were detected by PCR. The plasmid group was characterized by PCR-based inc/rep typing method. Amplicons were Sanger sequenced by BigDye Terminator chemistry (Applied Biosystems, USA) using an automated sequencer (ABI Prism 3500, USA). The isolate presented resistance to ampicillin, ceftriaxone, cefotaxime, aztreonam, nalidixic acid, chloramphenicol, streptomycin, gentamicin, trimethoprim/sulfamethoxazole, sulfonamide, and tetracycline, classified as multi-drug resistant (MDR) isolate and suggestive production of extended-spectrum beta-lactamase (ESBL).The beta-lactamase was not identified by PCR. However, was identified by Sanger sequencing as $bla_{\text{CTX-M-65}}$ gene. The PBRT typing identified the IncFIB plasmid group. Our study reinforces the importance of intensifying the monitoring of antimicrobial resistance in *Salmonella* isolates that carry the $bla_{\text{CTX-M-65}}$ gene since this variant is still rare in Brazil.

Keywords: *Salmonella* Infantis, ESBL, CTX-M-65, antimicrobial resistance

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