

TITLE: EVALUATION OF THE ANTIMICROBIAL SUSCEPTIBILITY OF *Shigella* sp. ISOLATED IN BRAZIL IN THE LAST 7 YEARS

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ABSTRACT:

Dysentery caused by *Shigella* sp. are an important public health problem in developed and developing countries. In Brazil, there are few reports of Shigellosis, which may be attributable to the fact that no current legislation calls for the research of *Shigella* sp. in water or food. The objective of this study was evaluate the incidence of isolates of *Shigella* sp. isolated in Brazil from 2012 to 2018 sent to the National Reference Laboratory of Bacterial Enteroinfections (NRLBE/IOC-FIOCRUZ) from different sources of isolation and evaluated the susceptibility profile for different classes of antimicrobials used in medicine and veterinary area. The isolates were evaluate by phenotypic and genotypic tests for confirmation of the species. Antimicrobial susceptibility was determinate by the diffusion disc test using the criteria stipulated by CLSI (2018). Between 2012 and 2018, 191 isolates of *Shigella sonnei* and 139 isolates of *Shigella flexnerii* were identified. All isolates were positive for the gene *ipaH* (gene used by confirmation of the genus). In relation to the geographical region most of *S. flexnerii* isolates were detected in the northeast region of the country (41%), followed by the south (32.4%). Regarding the *S. sonnei* the majority was identified in the southeast (40.8%) of the country followed by the south region (25.6%). In relation to antimicrobial susceptibility profile, 135 isolates of *S. flexnerii* and 186 isolates of *S. sonnei* showed resistance to at least 1 drug tested. *S. flexnerii* presented greater resistance to tetracyclines (91.8%) followed by ampicillin (80.7%) while *S. sonnei* presented higher resistance to trimethoprim sulfamethoxazole (71.5%) followed by streptomycin (55.4%). Considering the multiresistant resistance profile, resistance to three or more classes of antimicrobials, 85% of resistant isolates of *Shigella flexnerii* and 54,3% of *Shigella sonnei* were considered multiresistant. Although only 8 isolates have shown resistance to cefoxitin this data should not be equalized, since this antimicrobial is widely used in human therapeutics. The high resistance profiles associated with the wide distribution of *Shigella* sp. throughout the national territory reinforces the importance of constant monitoring of this microorganism.

Keywords: *Shigella* sp., Antimicrobial susceptibility, public health