TITLE: DETERMINATION OF MINIMUM INHIBITORY AND MINIMUM BACTERICIDAL CONCENTRATIONS OF BRAZILIAN STRAINS OF *Leptospira* SPP. FOR STREPTOMYCIN SULFATE

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ABSTRACT:
The present study determined the minimum inhibitory and bactericidal concentrations (MIC and MBC) of streptomycin sulfate, in comparison to six local strains of serogroups Sejroe, Icterohaemorrhagiae, Grippotyphosa and Pomona, belonging to the species *Leptospira interrogans* , *L. santarosai* and *L. kirschneri*. Strains were mantained in liquid nitrogen, belonging to the Bacteria Collection of Veterinary Interest of the Universidade Federal Fluminense. The broth macrodilution technique was used, with the establishment of positive (no antimicrobial addition) and negative (no *Leptospira* or antimicrobial additions) controls, in duplicates. Streptomycin was diluted on a base-2 logarithmic scale, resulting in final concentrations of 100 to 0.01 µg/mL. The concentration of *Leptospira* was determined using Petroff-Hausser's chamber under dark field microscopy, adding and adjusted amount of inoculum to obtain the concentration of 10^6 leptospires/mL. The tubes were incubated at 30 °C for seven days, and then examined for presence or absence of visible growth, which was evidenced by turbidity and confirmed by dark field microscopy, observing the presence or absence of *Leptospira*, its morphological characteristics, viability and the possibility of contamination. MIC was then defined as the lowest concentration of the drug where there was no *Leptospira* growth. Afterwards, 10 µL of each tube was transferred to a new tube, containing 2 mL of antimicrobial-free medium, for the determination of MBC. These tubes were incubated for three weeks at 30 °C, and then evaluated. The lowest concentration of antimicrobials that failed to provide growth after three weeks was recorded as MBC. In this study, MIC values of streptomycin across the different *Leptospira* strains ranged from 0.39 to 3.13 µg/mL, with MBCs ranging from 1.56 to 25 µg/mL. These results showed a wide variation in susceptibility of the strains against streptomycin, not only regarding MIC, but also MBS. Obtained outcomes are consistent with the values observed in other studies, and could define all studied strains as sensitive to streptomycin.

KEYWORDS: antimicrobial resistance, *Leptospira* spp., leptospirosis.

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