TITLE: PHENOTYPIC CHARACTERIZATION OF METICILIN RESISTANT *Staphylococcus* spp. ISOLATED FROM RESIDENTS FROM A RURAL SETTLEMENT

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ABSTRACT:

The agrarian reform in Brazil has resulted in regions known as rural settlements, which concentrate a large number of individuals living in poor housing and hygiene conditions, being vulnerable to multiple infectious agents, presenting recurrent cases of staphylococcal infections, mainly methicillin-resistant (MRSA) *Staphylococcus* that indicates resistance to beta-lactam antimicrobians, which complicates the treatment of these infections. The study determined the susceptibility to the antimicrobians Oxacillin and Cefoxitin, in order to characterize, phenotypically, samples resistant to methicillin in isolates of *Staphylococcus* spp. from the nasal cavities and the oropharynx of residents from a rural settlement. Clinical and epidemiological data were collected from individuals younger than 18 and older than 60 years old, among bacterial samples from the nasal cavities and the oropharynx through a swab, that were performed in Baird Parker agar for the selection of *Staphylococcus* spp. Staphylococci isolates were subjected to the disk diffusion test to determine antimicrobial susceptibility and also, to the nitrocefin test. Samples of 73 participants were obtained, where 82.20% were under the age of 18, and 17.80% were older than 60 years old. These individuals live in a family environment and only 17,81% reported attending the urban zone daily, while 26,03% attend weekly, 30,14% fortnightly and 23,29% monthly. In the last year 41.10% made use of antibiotics and 15.07% reported hospitalization. Of the 146 samples, 36.30% were identified as *Staphylococcus* spp. (79.25% proceeding from the nasal cavities and 20.75% from the oropharynx). Regarding the phenotypic identification of MRSA, 39.62% were resistant to Oxacillin, 15.09% to Cefoxitin and 13.20% showed concomitant resistance to these two antibiotics. According to the qualitative Nitrocefin test, 88.68% were positive with resistance to at least one of the antibiotics, meanwhile 11,32% were negative to the test, with only two samples that presented resistence to one of the antibiotics The data points to colonization by multidrug-resistant *Staphylococcus* by these vulnerable individuals living isolated from the urban area. Although antimicrobians are used for phenotypic detection of MRSA, the study demonstrates the need for molecular techniques to identify the *mecA* gene to confirm the correlation between Oxacillin and Cefoxitin resistance with the genotypic identification.

Keywords: rural settlements, *Staphylococcus spp*., oxacillin, cefoxitin, MRSA.

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