Título: DETECTION AND CHARACTERIZATION OF METHICILIN RESISTANT *Staphylococcus* ISOLATED OF HEALTHY SWINES

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Abstract:

Staphylococcus sp. are members of microbiota and agents of various infections in different hosts. The most important specie responsible for human infections is *Staphylococcus aureus*. Methicillin-resistant *S. aureus* (MRSA) infection is a serious public health problem worldwide. Within of the last decade there has been an increase of relates about isolation of MRSA and other methicillin-resistant *Staphylococcus* (MRS) species from food production animals. These animals have been considered potential infection sources to human who have direct contact with them or consume animal food. Recently, a specific MRSA lineage referred to as livestock-associated MRSA (LA-MRSA) has been recovered mainly from swines. This lineage has caused infections in human. Data are not available about the occurrence of swine MRSA carriers in Brazil. The aim of the present study was investigate the occurrence of MRSA and MRS colonization in swines from farms located in Rio de Janeiro state as well as to characterize the isolated strains. Nasal swabs were collected from 102 swines from 10 farms located in nine municipal districts of Rio de Janeiro state in 2014. Specimens were initially cultured in brain heart infusion supplemented with NaCl 6%, and then in mannitol salt agar and ChromAgar MRSA. Bacterial identification was performed by MALDI-TOF mass-spectrometry, and antimicrobial susceptibility by disk diffusion for cefoxitin, ciprofloxacin, clindamycin, chloramphenicol, erythromycin, gentamicin, linezolid, norfloxacin, penicillin, rifampicin, trimethoprim-sulfamethoxazole and tetracycline. SCC*mec* typing and PCR for *pvl* gene were performed for MRSA. In total, five *S. aureus*, including two MRSA (2%), were recovered from animals from four farms. MRSA isolates were also resistant to ciprofloxacin, clindamycin, chloramphenicol, erythromycin, gentamicin, norfloxacin, penicillin and tetracycline. Both were SCC*mec* non-typeable, and none carried *pvl*. Methicillin susceptible *S. aureus* isolates were susceptible to all antimicrobial tested. The present study showed that MRSA, resistant to various other antimicrobials in addition to beta-lactams, circulate in healthy swines in farms from Rio de Janeiro. This rate was inferior to of other studies, mainly in Europe. However, the data alert to the possibility of swines are also another source of infection to humans in our region.

Key-words: Methicillin-resistant *Staphylococcus aureus*, colonization, swine

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