

**TITLE:** CHARACTERIZATION OF MRSA ISOLATED FROM VAGINAL MICROBIOTA

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**ABSTRACT:**

Vaginal dysbiosis, caused by the alteration of *Lactobacillus*, contributes to the increase of pathogens that colonize the vaginal mucosa, which can cause vaginitis. Bacteria of the genus *Staphylococcus* can spread in this environment. The presence of methicillin-resistant *Staphylococcus aureus* (MRSA) is one of the significant obstacles in the treatment of staphylococcal diseases since these microorganisms are resistant to  $\beta$ -lactam antimicrobials. Thus, this study aimed to characterize MRSA isolated from vaginal contents of women in the fertile period. Two samples of vaginal contents from 102 patients who attended routine consultations at a gynecological and obstetric office of a private network from August 1, 2021, to March 1, 2022. The bacterial isolates were submitted to the PCR technique for identifying *S. aureus* through the *sau* gene and MRSA by detecting the *mecA* gene. The Staphylococcal Chromosome Cassette *mec* (SCC*mec*) was characterized by multiplex PCR. Staphylococcal enterotoxin A, B, C, D, and Toxic Shock Syndrome Toxin 1 (TSST-1) genes were screened by PCR. Eighty-three staphylococci were isolated from the studied samples, and of these, 10 (12%) were *S. aureus*. Among *S. aureus*, 9 (90%) MRSA were detected, 6 (66.6%) with SCC*mec* type I and 3 (33.3%) with SCC*mec* IV. Among the superantigens, the enterotoxin A gene (*sea* gene) was detected in 5 (50%) of *S. aureus*, in 4 MRSA with SCC*mec* I, and 1 MRSA with SCC*mec* IV. The data indicate a high frequency of MRSA among *S. aureus* isolates from vaginal contents, and its ability to produce enterotoxin A is worrisome. Enterotoxin A is a potent superantigen that contributes to spreading these bacteria in case of staphylococcal infections. Thus, the importance of therapeutic care among these women is emphasized, especially in antimicrobials.

**Keywords:** Staphylococcal diseases, MRSA, SCC*mec*, Enterotoxins

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