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# Methicillin-resistance of *Staphylococcus* species in southern Benin: Resistance gene, virulence factor associated and staphylococcal chromosomal cassette distribution

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**M**ethicillin resistance of staphylococcal strains remains a public health concern. The present study aims to detect the carriage of the *mecA* gene by staphylococcal strains and the associated virulence factors. Seventy-eight staphylococcal strains collected from three hospitals in southern Benin were identified in Maldi TOF MS. Antibiotic sensitivity was determined by antibiotic disk diffusion on Mueller Hinton-2 medium. The search for the *mecA* gene, the production of Pantone-Valentine leucocidin (PVL), toxic shock syndrome toxin (TSST) and detection of staphylococcal chromosomal cassette were performed by real time-polymerase chain reaction. The results obtained show that *Staphylococcus saprophyticus* was the most isolated species in the urine (38.4%), followed by *Staphylococcus aureus* (21.8%), *Staphylococcus sciuri* (21.8%), *Staphylococcus conii* (6.4%), *Staphylococcus haemolyticus* (1.3%), *Staphylococcus hominis* (1.3%) and *Staphylococcus xylosus*

(1.3%). In the cervico-vaginal secretion specimens, *Staphylococcus aureus* was the most isolated with a proportion of 5.1%. From the study of antibiotic sensitivity, there is a strong resistance of strains to beta-lactams, but no resistance to glycopeptides. 24.4% of the staphylococcal strains harbored the *mecA* gene. Between them, 52.4% of the *Staphylococcus aureus* strains were carriers of the *mecA* gene and 41.2% of the *Staphylococcus sciuri* strains also carried them. 33.3% of strains of *Staphylococcus aureus* produced PVL and 14.3% produced TSST. Two types of cassettes were identified in *Staphylococcus aureus* *ccrB* IV (*n* = 3) and *ccrC* (*n* = 4). Only one type of cassette was found in the strains of *Staphylococcus sciuri* bearing the *mecA* gene, that is *ccrB* II (*n* = 1). It is therefore important to initiate the search for these genes routinely for the proper care of patients.

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