

Genotypic profile analysis using High-Resolution Melting of methicillin resistant *Staphylococcus aureus* (MRSA).

Infections caused by Gram-positive bacteria, especially multiresistant, represent a major problem for public health, not only in terms of mortality, but also in terms of cost per patient care and implementation of infection control measures. The bacteria *Staphylococcus aureus* (*S. aureus*) is the leading cause of hospital-acquired infections and community, being reported in several countries. The microorganism is extremely skilled at acquiring resistance by mutation or gene transfer. Infections caused by methicillin-resistant *S. aureus* (MRSA), also called resistant to oxacillin are a serious global problem for the health institutions. The aim of this study was characterize genotypically 21 bacterial MRSA isolates from secretion, blood, tracheal secretions and urine culture from patients at the University Hospital of Londrina during the year 2010, using alternative method. For the determination of the genotype of the samples, the chosen method was based on HRM (High-Resolution Melting) using specific primers. The reactions were performed by PCR on a thermocycler *Rotor-gene Q 5-plex*; the melting curves of all sample were generated automatically by the Rotor- Gene® Q software, version 2.1.0.9. Four standard *S. aureus* strains were included (ATCC 29213 - ST5; ATCC 25923 - ST243; N315 - ST5; BEC9393 - ST239) as controls to compare the results obtained. Of the 21 samples analyzed, ten had ST5, being prevalent in this study, two had ST933, two showed ST863, two had ST835, one had ST486, one showed ST368, two showed ST138 and one presented ST27. The results of the HRM test shows important information about the epidemiology of MRSA and what type of circulating strain.

Keywords: *Staphylococcus aureus*; infection; High-Resolution Melting; methicillin; Bacterial resistance