

**TITLE:** PHENOTYPIC IDENTIFICATION OF BACTERIA WITH RESISTANCE PROFILE

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**ABSTRACT:**

Antimicrobial resistance can be defined as the process by which the bacteria are able to survive even under high concentrations of antimicrobials. Infections caused by bacteria with resistance profile are common causes of morbidity and mortality. Therefore, the identification of these pathogens is an indispensable strategy to combat these infections. Thus, the aim of this study was to identify bacteria with resistance profile in clinical samples of hospital patients. The identification of drug-resistant bacteria was performed according to the *Clinical and Laboratory Standards Institute* (CLSI). The identification of methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant *Staphylococcus aureus* (VRSA) was performed by the following methods: disc diffusion with cefoxitin and oxacillin for MRSA and with teicoplanin and vancomycin for VRSA; agar screening test and microdilution with oxacillin for MRSA and with vancomycin for VRSA. *Klebsiella pneumoniae* carbapenemase (KPC) were identified through the disc diffusion method with antimicrobials of the carbapenems group, as well as Hodge test. Extended-spectrum beta-lactamase-producing *Enterobacteriaceae* (ESBL) were identified through the disc diffusion method with antibiotics of the beta-lactam group, as well as the approximation test. In this study, 30 clinical samples were collected from patients of a university hospital of Pernambuco. MRSA, VRSA, ESBL and KPC were present in 20.1% (6/30), 23.3% (7/30), 33.3% (10/30) and 23.3% (7/30) of the 30 clinical samples, respectively. Regarding the identification of Gram positive bacteria with resistance profile, it was observed that 46.2% of the samples were MRSA (6/13) and 53.8% corresponded to VRSA (7/13). Concerning to the identification of Gram negative bacteria with resistance profile, 58.8% of the samples were ESBL (10/17) and 41.2% corresponded to KPC (7/17). From these results, it can be noted that the identification of bacteria with resistant profile it is of the utmost importance, especially due to the quickly dissemination of these microorganisms and the difficulty of an effective treatment, which makes the infections caused by these pathogens a serious global health threat.

**Keywords:** Antimicrobial Resistance, phenotypic identification, antimicrobials.

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