

## EVALUATION OF THE ANTIMICROBIAL SUSCEPTIBILITY OF METHICILLIN-RESISTANT *Staphylococcus aureus* ISOLATED FROM HUMAN INFECTIONS

**Thesis:** A. Domingues submitted this dissertation for her Masters in Tropical Diseases at Botucatu School of Medicine, São Paulo State University, UNESP, Botucatu, São Paulo, Brazil, 1999.

**Advisor:** Professor Terue Sadatsune.

**Co-advisor:** Professor Carlos Alberto de Magalhães Lopes.

**ABSTRACT:** Multiresistant *Staphylococcus aureus* constitutes an important public health problem, especially in view of its possible spread in nosocomial environments. In the present work, we analyzed the susceptibility profile of 80 *S. aureus* stains from human infections resistant to at least 10 drugs. For this study, the techniques used were the disk method and minimum inhibitory concentration (MIC) of the following drugs: cefuroxime, ciprofloxacin, clindamycin, erythromycin, gentamycin, imipenem, oxacillin, rifampicin, tetracycline and vancomycin, according the criteria of the National Committee for Clinical Laboratory Standards (NCCLS). Methicillin was included in the antibiogram as a marker, which is usually used in drugs selection for the treatment of staphylococcal infections. Results indicated that the most effective drug was vancomycin. For the other 10 drugs, the percentage of resistant strains ranged from 85% to 93.75%. In relation to the MICs, it was observed that vancomycin (MIC 90% = 0.615ug/ml) was the most effective drug; followed by rifampicin (MIC 90% = 2.6ug/ml) and ciprofloxacin (MIC 90% = 26.6ug/ml). The drugs that showed the least effective activity were cefuroxime, clindamycin, erythromycin, gentamycin, and oxacillin. On the other hand, observation of  $\beta$ -lactamase production revealed that most of the methicillin-resistant strains produced  $\beta$ -lactamase (83.7%), potentiating the risks of nosocomial infections. In general, vancomycin still continues to be one of the most effective drugs for staphylococcal infections therapy.

**KEY WORDS:** *Staphylococcus aureus*, methicillin, human infections, drugs.

### CORRESPONDENCE TO:

ANDRÉA DOMINGUES, Departamento de Microbiologia e Imunologia, Instituto de Biociências, UNESP, Botucatu, SP, 18618-000, Brasil. Email: [lopescam@ibb.unesp.br](mailto:lopescam@ibb.unesp.br).