TITLE: DETERMINATION OF ANTIMICROBIAL SUSCEPTIBILITY IN *STAPHYLOCOCCUS AUREUS* ISOLATED FROM WHITE COATS OF STUDENTS OF BIOMEDICINE COURSE

AUTHORS: BATISTA, I.R.; ARAUJO, J.C.C.; PRATES, A.C.L.; SANTOS, B.S.;BONFIM, Y.C.O.; RODRIGUES, M.V.P.; POLETTINI, J.; MORCELI, G.; PEREIRA, V.C.

INSTITUTION: UNIVERSIDADE DO OESTE PAULISTA, SÃO PAULO, SP (RUA JOSÉ BONGIOVANI, 700 - CIDADE UNIVERSITÁRIA, PRESIDENTE PRUDENTE - SP, 19050-920)

ABSTRACT: *Staphylococcus aureus* is part of the human microbiota, however, in situations of impaired immune system it can cause superficial, invasive or toxic diseases. The immune conditions of the subject and strain's characteristics, such as resistance and virulence factors set the gravity of the infection. *S. aureus* can be easily transferred to abiotic surfaces, such as white coats and be disseminate in community. The increase of antimicrobial resistance is mainly due to *mecA* gene. The constantly increased number of infections caused by *S. aureus* demonstrates the importance of antimicrobial susceptibility determination in understanding this microorganism's pathogenicity potential. Thus, this study aimed characterizes *S. aureus* species isolated from white coats of students of Biomedicine course at Universidade of Oeste Paulista as antimicrobial susceptibility and methicillin-resistant *Staphylococcus aureus* (MRSA) detection. White coats of 100 university students were analyzed, the students also answered to a quiz about Personal Protective Equipment (PPE) use. The isolated *S. aureus* were obtained by collar, sleeve and pocket regions and the antimicrobial susceptibility was determined by disk diffusion technique with disks of oxacillin, cefoxitin, penicillin, vancomycin, erythromycin, clindamycin and levofloxacin. The Mueller Hinton agar added 6% of oxacillin and 4% of NaCl screening method was used to MRSA detection. *S. aureus* were detected in 77 coats, considering the three gathering regions were isolated 135 strains, in which 62 (45,92%) were identified as MRSA. Regarding antimicrobial susceptibility, resistant strains were found by every antibiotic tested, except vancomycin. About the students that had colonized coats, 80,5% claimed to attend microbiology lab, of these 6,4% also had contact with the Hospital Regional- HR, 80,5% claimed sanitize their coats weekly and 97,4% reported to do the sanitizing procedure at home. The obtained analyses demonstrate the importance of correct biosecurity measures and warn about outside proper environment and incorrect use of PPE, contributing to multiresistant bacteria dissemination.

Keywords: S. aureus, resistance, MRSA, coats.

Development Agency: Universidade do Oeste Paulista, Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP)