

Title: *Staphylococcus aureus* AND METHICILLIN RESISTANT *Staphylococcus aureus* (MRSA) ISOLATED FROM PUBLIC TRANSPORTATION SYSTEM OF THE CITY OF GOIÂNIA-GO: PREVALENCE AND MOLECULAR CHARACTERIZATION.

Autors: Neves, L. S.¹, Oliveira, N. D.², Ribeiro, C. C.³, André, M. C. D. P. B.¹, Guerreiro, T. C.¹, Lamaro-Cardoso, J.¹

Institution¹ IPTSP/UFG – Instituto de Patologia Tropical e Saúde Pública da Universidade Federal de Goiás (Rua 235 – S/N – Setor Universitário – Goiânia-GO),² Instituto Biotec Educacional Ltda. (Avenida Fayad Hanna 271 – Cidade Jardim – Anápolis-GO),³ Metrobus Transporte Coletivo S/A (Rua Patriarca 299 – Vila Regina – Goiânia-GO)

Abstract:

Microorganisms in public areas such as parks, public transportation systems, schools and other community areas can be a critical issue in public health, because of the ease of interpersonal transfer of pathogens. This is a particular cause for concern when microbes are drug resistant and pathogenic. *Staphylococcus aureus* is a pathogenic bacterium that causes a broad spectrum of diseases and can adapt rapidly to various environmental conditions. Although methicillin-resistant *S. aureus* (MRSA) has been primarily nosocomial, are also increasingly acquired by healthy people in community settings. The aim of this study was to estimate the prevalence of *S. aureus* and MRSA in the greater line of the public transportation system of the city of Goiânia-GO, as well determine the susceptibility profile and characterize molecularly the isolates. Between september/2012 and may/2013, 852 swabs were collected from fixed bars of the doors of the 90 buses circulating on East-West line, beyond the turnstiles of 19 platforms and of 5 terminals arranged along the line. Microbiological standard procedures were used for *staphylococci* isolation. The identification of the *S. aureus* was performed by PCR technique for the specie-specific gene *femA*. The *S. aureus* isolates were submitted to disk-diffusion test for determination of antibiotic susceptibility profile and detection of iMLS_B and cMLS_B phenotypes. Additionally, PCR for *lukS-F* and *mecA* genes detection were done to detect strains producing Panton Valentine leucocidin (PVL) and for identification of MRSA strains, respectively. The overall prevalence of *S. aureus* contamination was 18.4% (157/852 swabs). For the buses, the prevalence was 18.6% (134/720), for platforms 16.8% (17/101) and for terminals 19.3% (6/31). Four (2.5%) *S. aureus* was identified as MRSA. Nine isolates (5.7%) were positive for PVL, and one of these isolates was MRSA. The iMLS_B phenotype was found in 40.8% of the isolates and only one (0.6%) presented cMLS_B phenotype. Sixty-two isolates (39.5%) were considered multidrug-resistant. It was evidenced that public transport users are exposed to contamination by *S. aureus* resistant to antibiotics and carrying virulence genes. The high-touch surfaces evaluated were characterized as important fomites in the chain of microorganism transmission and hygienic and sanitary measures should be taken by both the collective public transport users, as the companies, to prevent the spread and acquisition of this pathogen.

Keywords: *Staphylococcus aureus*, MRSA, public transportation system, MLS_B.