PATHOGENIC BACTERIA LODGED IN ANTS CAPTURED IN A HOSPITAL ENVIRONMENT

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Abstract

Social insects such as ants may carry pathogenic microorganisms, and thus represent a potential danger in the context of public health, especially in a hospital environment. These insects may therefore be associated with the occurrence of hospital-acquired infections and resistance to antimicrobials. Hospital-acquired infections increase mortality rates, and are a continuous menace in terms of the spreading of multiresistant bacteria. The present study investigated, isolated, and identified pathogenic bacteria in ants captured in the City Hospital of Teixeira de Freitas, state of Bahia, Brazil. We also characterized the main ant species captured in this environment. Ants were attracted using protein and carbohydrate baits (sausages and honey). Samples were comprised of five ants captured and placed in test tubes containing BHI Agar. Microbiological analyses were carried out in the Laboratory of Microbiology of the State University of Bahia (UNEB), *Campus* X. The presence of *Escherichia coli* and other enterobacteria as well as staphylococci was evaluated. The confirmed bacterial species were tested for the sensitivity to vancomycin, cefoxitin, oxacillin, and chloramphenicol. Ant specimens collected were transferred to test tubes containing ethanol 70% and identified using a taxonomic key. The Enterobacteriaceae detected included resistant *Escherichia coli*, resistant and sensitive *Arizona* ssp, resistant and sensitive *Enterobacter* spp, sensitive *Klebsiella* spp and resistant *Klebsiella oxytoca*, sensitive *Hafnia* spp, and *Yersinia enterocolitica* sensitive to chloramphenicol. Also, *Staphylococcus aureus* CN resistant and sensitive, *Staphylococcus aureus* CP resistant and sensitive, and *Staphylococcus epidermidis* sensitive to antimicrobial vancomycin, oxacillin, and cefoxitin were detected. Ant species identified included *Pheidole* spp, *Crematogaster* spp, *Linepithema* spp, and *Tapinoma melanocephalum*. The results show that the ants captured lodge a considerable number of pathogenic bacteria resistant to the antimicrobial agents used, which increases the risk of hospital-acquired infections, especially in patients in intensive care units, who as a rule are immunodepleted.

Keywords: ants; hospital-acquired infection; *Staphylococcus*; *Escherichia*.

Promotion Agency: Research Support Foundation of Bahia State (FAPESB).