

TITLE: MULTIDRUG-RESISTANT *Aeromonas* IN HOSPITAL SEWAGE FROM BELEM CITY (PA).

AUTHORS: CINTYA DE OLIVEIRA SOUZA, DANIEL STANGARLIN DE CAMARGO, DANIELLE MURICI BRASILIENSE, DOLORES DIAS DOS SANTOS, CLELIA JESSICA DA SILVA COSTA, IRNA CARLA DO ROSÁRIO SOUZA CARNEIRO.

INSTITUTION: INSTITUTO EVANDRO CHAGAS (BR-316 KM 07, ANANINDEUA - PA, CEP: 67030-000), UNIVERSIDADE FEDERAL DO PARÁ (RUA AUGUSTO CORRÊA, 1 GUAMÁ, BELÉM – PA, CEP 66075-110).

Aeromonas spp. are ubiquitous aquatic bacteria isolated from rivers, lakes, ponds, groundwater, surface water and chlorinated water that often show sensitivity to most antimicrobials. However, recently this bacteria have shown an increasing incidence of antimicrobial drug resistance since the indiscriminate use of antibiotics and their release into the environment. As expected, hospital sewage has the richest human-associated bacteria and contain the highest levels of multidrug-resistant bacteria, however, this same situation has been occurring with environmental bacteria. The present study aimed to characterize antimicrobial resistance profile of *Aeromonas* from hospital sewage in Belem-PA. Samples were collected at two hospital's Sewage from a maternity hospital on March 2018 from Belem city. The sample was diluted in 1:20 and 1:50 and 200µL were cultured on MacConkey Agar e SS Agar with imipenem (1µg/mL) (35 °C /24 hours). The identification and antimicrobial susceptibility testing were performed by Vitek-2 automated system, using the GN and AST 239 cards. 39 multidrug-resistant bacteria were identified, which 20% (8/39) were *Aeromonas*. The phenotypic resistance identified were AMP-SAM-CXM-CXA-CRO-MPM-CIP (3/8), AMP-SAM-CXM-CXA-CFO-CAZ-CRO-CPM-IMP-MPM-GEN-CIP (2/8), AMP-SAM-CXM-CXA-CFO-CRO-CPM-IMP-MPM-AMI-GEN-CIP-CS (1/8), AMP-SAM-PIT-CXM-CXA-CFO-CRO-CPM-IMP-MPM-AMI-GEN (1/8) and AMP-SAM-CXM-CXA-CFO-CRO-MPM-CIP (1/8). The results of this study demonstrated the occurrence of multidrug-resistance *Aeromonas* with five different profiles of which one included resistance to colistin. These findings also demonstrate the adaptability of these environmental isolates to antimicrobial resistance. Furthermore escape of such strains from hospital sewage to natural water bodies is of much environmental and public health relevance.

Keywords: *Aeromonas*, multidrug-resistant, hospital sewage.

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