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Abstract

Infective Endocarditis caused by Enterobactereaceae: Phenotypic and molecular typing of Escherichia coli and Klebsiela pneumoniae triggering endocarditis in Rio de Janeiro, Brazil.

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Abstract:

Infective endocarditis (IE) is a systemic infection and life threatening disease with high mortality (1–4). The incidence of IE caused by gram-negative bacteria has been increasing (5). These cases are rare and the few reported cases include IE caused by Enterobacteriacea, such as Serratia marcescens, Enterobacter spp., E. coli, K. Pneumoniae, Salmonella spp. and Pseudomonas aeruginosa (5,6). We had reported in the 27th ECCMID that our patients with EE have a higher mortality rate in Brazil. Hereby, we will explore virulence mechanisms and resistance of blood isolated Escherichia coli (E. coli) and Klebsiella pneumonia (K. pneumonia), in two EE cases. The molecular assays were performed by WGS (Whole Genome Sequencing) where total bacterial DNA was extracted from each isolate using the Ultraclean® microbial DNA isolation kit (MO BIO Laboratories, Carlsbad, CA, US). A DNA library was prepared using the Illumina Nextera XT kit. Biofilm could be observed after the period of incubation. All K. pneumoniae isolates belong to ST76. The genotyping assay determined that the resistance genes of E. coli were positive to strA, aadA5, strB, blaTEM-1B, sul1, sul2, dfrA17 while KP isolates were positive to genes blaSHV-1, oqxB,oqxA and fosA. The E. coli was resistant to Trimethoprim, Trimethoprim/ sulfamethoxazole and Ampicillin. All Kp isolates were resistance to ampicillin, nitrofurantoin and fosfomycin. The plasmid replicon type FIA was found in all K. pneumoniae. Virulence genes were investigated, all isolates were found to mrkD, urea, uge, pgaC, fimC, ompA and hgpA genes. The strains isolated showed resistance genes and consequently express resistance against important antibiotics. They also showed virulence genes and phenotypic aspects that prove their pathogenicity.

Biography:

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Recent Publications:

1. Nathália L. Andrade, et al;Characterization of fosfomycin heteroresistance among MDR Escherichia coli isolates from hospitalized patients in Rio de Janeiro, Brazil; 2020
2. Nathália L. Andrade, et al;Comprehensive Molecular Characterization of Escherichia coli Isolates from Urine Samples of Hospitalized Patients in Rio de Janeiro, Brazil; 2020
3. Nathália L. Andrade, et al;Supplementary Material; 2020
4. Nathália L. Andrade, et al;Comprehensive Molecular Characterization of Escherichia coli Isolates from Urine Samples of Hospitalized Patients in Rio de Janeiro, Brazil; 2020

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