Unraveling factors contributing to Enterobacter spp. survival in a hospital setting [

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Monografía

Resumen: Enterobacter spp. are Gram-negative, facultative anaerobic, rod-shaped, and non-sporeforming bacteria belonging to the Enterobacteriaceae family. Enterobacter spp. have achieved a relevant clinical significance as opportunistic bacterial microorganisms and have overcome as an outstanding nosocomial pathogens in Intensive Care Units. The longer they persist under dry or nutrient-limited conditions (air, floors or in fomites), the longer they may be a source of transmission and thus endanger a susceptible patient or a healthcare worker. Between the responsible mechanisms that could allow these nosocomial pathogens to persist with these stress conditions are their ability to form biofilms and to resist desiccation. According to this hypothesis, we investigated the fitness of eighteen Enterobacter spp. clinical isolates evaluating its survival under desiccation and low-nutrient concentration (stress conditions that simulate the environmental conditions in a hospital setting). Moreover, we assessed the virulence of some strains challenged with these stress conditions in the Galleria mellonella infection model. As a result, we conclude that Enterobacter spp. have the capability to survive on dry surfaces without losing their virulence and biofilm-forming property, which may have a role in indirect transmission, therefore indicating that regular cleaning and disinfection in hospitals should be an integral part of strategies to reduce the spread of resistant Enterobacter spp.

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