The molecular basis of infections associated to orthopedic implants Bases moleculares de la infección asociada a implantes ortopédicos

Contreras, Julio J.

Sepúlveda, Miguel

Infections associated with the use of orthopedic implants are still the major complication associated with these devices and an unsolved challenge. The frequency of infection associated with orthopedic implant is relatively low, estimated to range between 0.5 to 5%. However, it has devastating consequences for the patient and health institutions. The majority of infections is secondary to gram-positive aerobic microorganisms belonging to the genus Staphylococcus. These bacteria establish chronic infections due to its ability of adhesion and biofilm formation. Biofilms are complex communities in a polysaccharide matrix. This structure retains nutrients and protects the bacteria against the immune response and antimicrobial agents. The study of molecular characteristics and biofilm formation regulation is vital for the understanding of judicious clinical management and the development of novel strategies for the prevention of infection.