

E060

2-hour Educational Workshop

ESCMID guideline for the diagnosis and treatment of biofilm infections

Diagnosis of biofilm infections

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Biofilm infections (BI) present several diagnostic challenges. First, because antimicrobial therapy treats single bacterial cells more effectively than adherent or aggregated cells, BI are often characterized by recurring signs and symptoms of infection that appear to resolve upon treatment with antibiotics, only to return when antibiotic therapy ceases. Second, BI pathology progresses over time due to an increase in microbial cell density and production of secreted virulence factors resulting in a inflammatory response surrounding the biofilm. Third, adherent or aggregated microorganisms in biofilms may be heterogeneous in distribution on surfaces and in fluids and may be missed in fluid or swab specimens conventionally used for diagnosing infection in the clinical laboratory. All of these may delay the diagnosis of BI. We have outlined functional, clinically relevant guidelines that help distinguish BI from acute planktonic infections, obtain appropriate clinical samples, and focus on the development of routine clinical tests. We review criteria for BI and discuss the microbiological, microscopic and molecular approaches to improve diagnosis of these challenging infections.