

POSTER PRESENTATION

Open Access

Antibiotic susceptibility and architecture of *Staphylococcus aureus* and *Staphylococcus epidermidis* biofilms

DC Coraca-Huber^{1*}, M Fille², J Hausdorfer², K Pfaller³, M Nogler¹

From International Conference on Prevention & Infection Control (ICPIC 2011)
Geneva, Switzerland. 29 June – 2 July 2011

Introduction / objectives

The infection associated to metal surfaces or dead tissues like bone grafts, can be fatal for the patient and presents a major financial burden for the economy. The adhering bacteria in these cases can evade host defences by forming biofilms. For this reason, the prevention of bacterial colonization and control of implant associated infections are of special interest.

Objectives

Growth of *S.aureus* and *S. epidermidis* biofilms *in vitro* for antibiotic susceptibility tests and investigation of architecture.

Methods

S. aureus and *S. epidermidis* biofilms were grown over MBEC[®] (modified microtiter plates). Antibiotic susceptibility tests were carried out using gentamicin, vancomycin, rifampicin, fosfomycin, clindamycin and linezolid. Cell counting, opacity density (OD₆₂₀) and scanning electronic microscopic (SEM) analysis were carried out.

Results

The counting of viable cells after antibiotic exposition and OD₆₂₀ showed significant efficacy of rifampicin and gentamicin against *S. epidermidis* biofilms and rifampicin against *S. aureus* biofilms compared to other antibiotics. SEM images showed proteic material in contact with cells which can be related to the proteic membrane characteristic of the biofilms structure.

Conclusion

The method for the development of bacterial biofilm *in vitro* using MBEC[®] plates is efficient and relatively fast. Gentamicin and rifampicin are good candidates for control of implant associated infections.

Disclosure of interest

None declared.

Author details

¹Experimental Orthopedics, Medical University Innsbruck, Austria. ²Hygiene and Medical Microbiology, Medical University Innsbruck, Innsbruck, Austria. ³Histology And Embryology, Medical University Innsbruck, Innsbruck, Austria.

Published: 29 June 2011

doi:10.1186/1753-6561-5-S6-P199

Cite this article as: Coraca-Huber et al.: Antibiotic susceptibility and architecture of *Staphylococcus aureus* and *Staphylococcus epidermidis* biofilms. *BMC Proceedings* 2011 **5**(Suppl 6):P199.

**Submit your next manuscript to BioMed Central
and take full advantage of:**

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit



¹Experimental Orthopedics, Medical University Innsbruck, Austria
Full list of author information is available at the end of the article