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Citation: Clinical Microbiology and Infection Volume 8, Supplement 1, 2002

Adhesion of *Aspergillus* spp. to biomaterials

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Introduction:
The incidence of deep seated aspergillosis is increasingly growing in critical care patients, with most of the pathogenic mechanisms remaining yet unknown. Adherence to liquid hydrocarbons is considered an indirect method to assess microbial cell surface hydrophobicity (CSH), which is believed to have an important role in the adherence of pathogenic microorganisms to host cell or foreign surfaces, namely plastic.
Objective:
To determine the potential ability of clinical isolates of Aspergillus to adhere and colonize the surface of medical indwelling devices, namely plastic and silicon rubber.
Materials and methods:
Both resting and germinated spores (5 and 11 days old) of clinical isolates of *A. fumigatus* (three strains), *A. niger* (two strains) and *A. flavus* (two strains) were assayed (in an assay for hydrocarbon adhesion 1) for the capacity to adhere to *n*-hexadecane and xylene. The adhesion to silicon (silicon oil) was assayed according to a previously developed assay 2. All tests were run in triplicate.
Results:
Non-germinated spores showed a significant adhesion to *n*-hexadecane and xylene and similarly to silicon, which did not change significantly with age. However, following germination and initial hyphal growth, both CSH and silicon adhesion increased significantly, in all tested strains.
Conclusions:
Aspergillus shows a promoted adhesion to biomaterials of plastic nature as well as silicon materials, like vascular catheters or peritoneal shunts, particularly following hyphae formation. Such a fact may be evoked to help to explain colonization and infection of medical indwelling devices like those seen in critical care patients.References

Reference: *1 Van der Mei et al. Curr Microbiol 1991;23:337-41.*
2 Rodrigues et al. Mycosis 2001; 44 (S1): 24.