A revised species concept for opportunistic *Mucor* species reveals species-specific antifungal susceptibility profiles.

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Details

Abstract

Recently, the species concept of opportunistic *Mucor circinelloides* and its relatives has been revised, resulting in the recognition of its classical formae as independent species and the description of new species. In this study, we used isolates of all clinically relevant Mucor species and performed susceptibility testing using the EUCAST reference method to identify potential species-specific susceptibility patterns. In vitro susceptibility profiles of 101 mucoralean strains belonging to the genus Mucor (72), the closely related species Cokeromyces recurvatus (3), Rhizopus (12), Lichtheimia (10), and Rhizomucor (4) to six antifungals (amphotericin B, natamycin, terbinafine, isavuconazole, itraconazole, and posaconazole) were determined. The most active drug for all Mucorales was amphotericin B. Antifungal susceptibility profiles of pathogenic Mucor species were specific for isavuconazole, itraconazole, and posaconazole. The

species formerly united in M. circinelloides showed clear differences in their antifungal susceptibilities. Cokeromyces recurvatus, Mucor ardhlaengiktus, Mucor lusitanicus (M. circinelloides f. lusitanicus), and Mucor ramosissimus exhibited high MICs to all azoles tested. Mucor indicus presented high MICs for isavuconazole and posaconazole, and Mucor amphibiorum and Mucor irregularis showed high MICs for isavuconazole. MIC values of Mucor spp. for posaconazole, isavuconazole, and itraconazole were high compared to those for Rhizopus and the Lichtheimiaceae (Lichtheimia and Rhizomucor). Molecular identification combined with in vitro susceptibility testing is recommended for Mucor species, especially if azoles are applied in treatment.

Involved units

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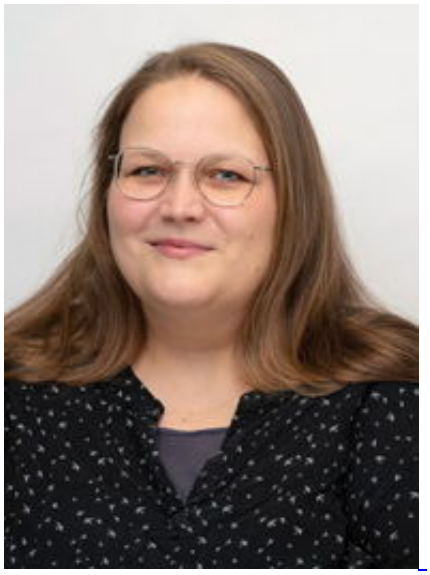

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