IN VITRO ANTIFUNGAL SUSCEPTIBILITY OF CLINICAL ISOLATES OF CRYPTIC AND RARE SPECIES OF ASPERGILLUS: A COMPARATIVE STUDY OF MICS GENERATED BY BROTH MICRODILUTION AND ETEST METHODS

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Resumo
Aspergillus genus is the main cause of mold human invasive disease in tertiary care hospitals worldwide. Aspergillus fumigatus is the most prevalent species among clinical isolates but the isolation of non-fumigatus species has substantially increased in the last decades. Actually, more than 45 Aspergillus species have been described as human pathogens and some of these species may present reduce susceptibility against antifungal drugs. The Etest method has been considered to be a more suitable alternative for routine laboratories once it is more convenient and less labor intensive than the broth microdilution (BMD). However, the performance of this commercial system has not been extensively investigated with cryptic and rare species belonging to Aspergillus genus. The proposal of this study was to investigate the correlation between BMD and Etest methods by testing a large collection of 130 Brazilian clinical isolates representative of nine Aspergillus sections, including 29 strains of cryptic or rare species recovered from human samples and 68 and 29 strains representative of A fumigatus and A. flavus, respectively. All isolates were tested against voriconazole, itraconazole and posaconazole by using BMD methodology according to the Clinical and Laboratory Standards Institute (CLSI) and Etest® assay as described by manufacturer. A head-to-head comparison ofazole MIC values as determined by both methods was performed. Essential agreements (EA) occurred when the MIC values results by Etest and reference methods were in exact agreement or were within ±1 and ±2 dilutions. The overall EA ±2 dilution to itraconazole was 86% to cryptic/rare Aspergillus species and 92% to non-cryptic/rare Aspergillus species. For voriconazole, the overall EA ±2 dilution was 79% to cryptic/rare Aspergillus species and 82% to non-cryptic/rare Aspergillus species. Finally, for posaconazole the EA ±2 was 91% and 93% for non-cryptic/rare and cryptic/rare Aspergillus species, respectively. Based on these data we may suggest that the equivalence between ETEST and MBD results was not different when testing either A. fumigatus/A. flavus strains or rare and cryptic species of Aspergillus. However, we need further studies involving a large number of rare and cryptic species of Aspergillus before extrapolating for the full genera the tests conditions that succeed to generate reproducible results with A. flavus and A. fumigatus.

Palavras-Chaves: Aspergillus, broth microdilution, cryptic and rare species, Etest, susceptibility

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