

Title:**Screening of azole resistance among environmental *Aspergillus* spp. isolates**

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The increasing number of reports of therapeutic failures in invasive Aspergillosis stressed the relevance of the investigation of their antifungal susceptibility profile.. Since species of *Aspergillus* are ubiquitous in nature and highly anemophilic, distinct sources of infection are possible. Scarce data exist on substrates harboring resistant strains as well as the implicated species. We investigated the occurrence of resistance to azole drugs and azole fungicides among *Aspergillus* environmental strains. Soil, atmospheric air, flowers and water were sampled in distinct areas of Sao Paulo State, from December 2017 to December 2018, to recover *Aspergillus* isolates. The species of 34 strains were characterized by β -tubulin DNA gene sequencing. The MICs of voriconazole, itraconazole, ravuconazole and posaconazole were determined through CLSI broth microdilution methodology. The prevalent species was *A. fumigatus* (64.7%), *A. flavus* (11.8%), *A. section Flavi* (*A. orizae*/*A. flavus*) (11.8%), *A. section Circundati* (*A. westerdijkiae*/*A. ochraceus*) (2.9%), and *A. section Nigri* (*A. awamori*/*A. niger*) (5.8%). These species are commonly associated with human infections. We found a wide distribution of MICs depending on the agent and species. The MICs values were higher for voriconazole (MIC 4 mg/L), followed by posaconazole (MIC 2 mg/L), itraconazole (MIC 1 mg/L), and ravuconazole (MIC 0.5 mg/L). The MIC that inhibits 50% of strains (MIC₅₀) was: 0.06 mg/L for itraconazole, 0.5 mg/L for voriconazole, 0.12 mg/L for ravuconazole and 0.06 mg/L for posaconazole. According to the epidemiologic cutoff values (ECVs) in our study we found only few wild-type strains to azole drugs. Otherwise, we encountered high MICs of azole fungicides. We concluded that diverse pathogenic species of *Aspergillus* are dispersed in the environment in Sao Paulo State and they are susceptible to azole drugs, although they presented poor susceptibility to fungicides, suggesting previous azole exposition. The high rate of environmental *A. fumigatus* strains was notable and is in accordance to the relevant role of this species in clinical settings.

Key- Words: *Aspergillus* spp., environment, atmospheric air, azole drugs, agricultural fungicides

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