

# Susceptibility of *Aspergillus* species isolated from cutaneous and visceral lesions to antifungal drugs in Iran

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**Background:** Different studies have shown, despite the expanding antifungal agents, opportunistic fungal infections death incidence rate caused by species of *Aspergillus* have increased during recent decades due to the growth of potential factors and immunosuppressed individuals.

Susceptibility decrease, drug-resistance occurrence, MIC (Minimum Inhibitory Concentration) increase, and cross resistance among the isolated *Aspergillus* SPP., lack of effective response to conventional treatments, inaccessibility of the antifungal susceptibility patterns of the most common Iranian isolated *Aspergillus* SPP. have become an excuse to design and carry out the present study. *It is important to remember that the rude mortality from invasive Aspergillosis is around 85% and falls to around 50% if treated more precisely.*

**Methodology:** During 13 months 50 clinically isolated *Aspergillus*, which have been isolated from visceral and cutaneous samples, based on Klich 2002 method and the morphological features were divided into 40 strains of *A. flavus*, 9 strains of *A. niger*, and one strain of *A. fumigatus*. Then their susceptibility test was carried out according to the standard method of NCCLS – M38A Broth Microdilution.

**Results:** Through this study we found out that 7.5% of the isolated *A. flavus* with MIC > 2µg/ml in relation to AMB medicine, according to CSLI Guideline are probably considered to be as clinically resistant isolated types or treatment failures, and 25% of them in relation to ITR medicine with MIC = 1 µg/ml and by MIC < 8 µg/ml are considered to be as less sensitive isolated species. On the whole, the domestic isolated *A. flavus* species were less sensitive than those which have been under studies overseas.

The MIC range of 9 strain *A. niger* in relation to AMB, ITR, VRC medicines respectively came out 0.5 – 1 µg/ml, 0.5 – 2µg/ml, and 0.25 – 2µg/ml, that in comparison with similar foreign studies had less sensitivity in spite of being in the standard strain of MIC range and protocol.

The MIC range of 1 strain *A. niger* in relation to AMB, ITR, VRC medicines respectively came out 1, 2, and 0.25 MIC µg/ml, that according to CLSI protocol are considered as high. In comparison with similar foreign studies had less sensitivity.

**Conclusion:** Through this study we found out that the MIC range Iranian *Aspergillus* isolated from clinical specimens in the majority of the cases go into the reference standard strains of MIC range and the MIC range of some foreign studies. But in some important cases go out of this range that shows lower sensitivity of Iranian isolated *Aspergillus* and their MIC increase.

**Keywords:** *Aspergillus*, Drug resistance, MIC, Amphotericin B, Itracunazole, Voriconazole