TOXINOGENICITY OF *ASPERGILLUS FUMIGATUS* AND *A. VERSICOLOR* STRAINS ISOLATED FROM PULMONARY ASPERGILLOMA

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Pulmonary aspergilloma-secondary form of pulmonary aspergillosis, is caused mainly by Aspergillus species chronic colonisation of lung tissue. Some strains of Aspergillus species have ability to produce mycotoxins, and their role in development of aspergilloma is not well understood. The aim of this study was to determine toxinogenicity of Aspergillus species isolated from operated lung tissue (pulmonary lobes) in 12 cases (8 males and 4 females) of pulmonary aspergilloma. Defrost tissue samples were twice examined by aseptic inoculation on Sabouraud agar with streptomycin and penicillin (20:40), and incubation at 250C+2 for 7 days. Identification of Aspergillus species was done on basis of macro and microscopic subculture characteristics on Czapek agar according to keys (Thom and Raper, 1945; de Hoog et al., 2000). Toxinogenicity of isolated Aspergillus strains was examined in vitro on liquid yeast medium. One ml of suspension of conidia (108/mL) from each strain was inoculated in sterile liquid yeast medium (25 mL), and incubated at 250C for 14 days with daily shaking. Qualitative and quantitative analysis of mycotoxins were carried out by previously described multytoxin TLC method (Balzer et al., 1978), and by TLC method for detection of gliotoxin (Richard et al., 1996). Aspergillus species were found in 5 samples of lung tissue, including 3 strains of A. fumigatus and 2 strains of A. versicolor. In biosynthesis, A. fumigatus strains produced aflatoxin B1 (AFB1) in concentration range from 0,0025 to 0,145 µg/ml, and 2 strains produced AFB1 and AFG1 simultaneously, in range from 0,033 to 0,042 µg/ml of biomass. Gliotoxin production was not detected. Multytoxinogenicity of 2 A. versicolor strains was also established. These strains produced AFB1 (0,0035-0,0094 µg/ml), and sterigmatocystin (0,5-6,67 µg/ml). Mycotoxinogenicity of Aspergillus can be one of possible virulence factors responsible for development of pulmonary aspergilloma.