OCHRATOXOGENICITY OF ASPERGILLUS OCHRACEUS STRAINS FROM NEPHRO-PATHY AND ANEPHROPATHY AREAS IN YUGOSLAVIA

S. PEPELJNJAK and Z. CVETNIĆ

Faculty of Pharmacy and Biochemistry, University of Zagreb,
Zagreb (Yugoslavia)

Introduction

Ochratoxin A (OA) is a toxic metabolite of *Aspergillus* and *Penicillium* sp. which are often present on various food and feed. Its nephrotoxic properties are especially interesting in context of studying of its possible role in the ethiology of endemic nephropathy "(ref. 1)". The findings that OA is present as a residuum in organs of animals fed with contaminated feed shows an additional possibility of human intoxication "(ref. 2)". This possibility (assumption) is strengthened by the fact that OA was found in human blood samples "(ref. 3)". With this investigations we have to obtain an overview into the frequency of occurrence of *A. ochraceus* strains, the producers of OA-toxin in nephropathic and anephropathic areas of Croatia (Yugoslavia) in grains and smoked dried meat products.

Materials and methods

855 samples of stored grains and dried meat collected in period 1980-1987. from individual households in the nephropathic and anephropathic areas in Croatia were mycological analysed. Toxogenicity of *A. ochraceus* was studied on 70 strains (27 from nephropathic area and 43 from anephropathic area), and detection was comparatively carried out on M_1 -medium which under the UV light (365 nm) shows light-blue fluorescence around colonies "(ref. 4)", and by biosynthesis on a fluid medium with sucrose and yeast extract (YES) "(ref. 5)" as well as on sterile moist crushed wheat (W) "(ref. 6)". Mycotoxin extraction was performed using TLC multitoxin method "(ref. 7)".

Results

Mycological analyses showed 10.7% samples of dried meat products and 9.6% of stored grains to be contaminated with *Aspergillus ochraceus* strains. OA producers were found in 8.7% of 70 strains, when detection was carried out on M_1 -medium. Better detection of producers OA was on YES, as well

as on moist cruched wheat, where 37% of strains from nephropathic area, and 35% of strains of anephropathic area produced OA. But nephropathic area samples revealed 10% of strong producers of OA (240 mg/l YES and 125 mg/kg W), 10% of medium producers (16.6 mg/l YES and 22.5 mg/kg W). Among the strains isolated on wider anephropathic area a strong producers of OA were found out, but it was revealed 6.6% of high-medium producers (33.7 mg/kg W), 13.3% of medium producers (20.4-27.0 mg/l YES and 14.0-14.9 mg/kg W). The greatest number of strains, 80% of both regions are encountered in poor producers (0.07-9.0 mg/l YES and 0.11-8.45 mg/kg W). Finding of 10% strong producers on smoked meat products can have importance in intoxication of peoples on nephropathic area.

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