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Clinical findings after indoor micro-fungal and trichothecene exposure

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Trichothecenes (Ts) remain toxic despite disinfection, bind dust, damage skin/mucosa/phagocytes/neurons. Monitoring 45 patients (adults, children, embryos) exposed to 18 Ts-contaminated indoor-environments, fungal IgGs, urine mycotoxins (MCTs) [Ts, ochratoxin (OTA), aflatoxin (A)], immune parameters (neutrophils, lymphocyte subsets, monocytes, IgG, IgA, IgM, IgE and subclasses), immunosuppressant medications, nutritional deficiencies (protein, vitamin D, zinc), genetic MTHFR single-nucleotide-polymorphisms C677T and A1298C, environmental contamination severity (ECS), hazardous activity severity (HAS), exposure duration (ED) and clinical findings were rated sorting by disease severity (DS). Bio-statistical analysis correlated DS, ECS, HAS and ED by using Pearson correlation coefficients. *Aspergillus/Penicillium* (A/P) detected in all 18 Ts-contaminated environments (56% *A. niger*), Chaetomium 94%, *Stachybotrys* (St) 67%, *Mucor* 61%, *Alternaria* 44% and 33% *P. brevicompactum*. None had *Fusarium*. Patient outcomes were: Disabled 54% (23% permanently), neurologic 67% (female predominance), ear/nose/throat 30%, pulmonary 21% (male predominance) and dermatologic 12%. IgG titers: A/P+93% (91% of the moderately-to-extremely ill, females predominant). None of the mildly-ill had elevated *A. fumigatus* I_gG, P-I_gG titers+86% (*P. notatum/P. chrysogenum* 74% tested); St 59% (St-IgG+61% and St-IgA+22% of the moderate-extremely-ill and none of the mildly-ill). *Phoma, Trichoderma* IGGs were elevated and more in males; *A. fumigatus* IgG, A antigen EIA and *P. notatum* IGG were more in females. Urinary MCTs (91% tested): detectable Ts 97% (trace 38%, elevated 46%); 31% OTA, 6% A. All extremely-ill excreted Ts; none excreted A. Higher Ts predominated in females (46% vs. 24%), trace in males (38% vs. 18%). Overall, disease severity strongly correlated with ECS (p=0.00000001) and HAS (p=0.0000001). Surprisingly, ED had insignificant correlation. The strongest DS vs. ECS predictors were mucosal injury (p=0.00000003), any detection of urinary Ts (p=0.0000001) and the development of fungal IGGs (p=.0000009). DS also strongly correlated with HAS, particularly with genetic MTHFR detoxification defects (p=0.00000008).

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