ANTIBODIES TO MOLDS AND SATRATOXIN IN INDIVIDUALS EXPOSED IN WATER-DAMAGED BUILDINGS

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ABSTRACT:

IgA, IgM and IgG antibodies against *Penicillium notatum, Aspergillus niger, Stachybotrys chartarum* and satratoxin H were determined in the blood of 500 healthy blood donor controls, 500 random patients and 500 patients exposed to molds. The patients were referred to the laboratory for immunotoxicological evaluation or for measurements of mold antibody levels. The IgA, IgM and IgG antibodies against the molds were significantly greater in the patients ($p<0.001$ for all measurements) vs the controls. However, levels of these antibodies against satratoxin were significantly different in mold-exposed patients only for IgG ($P<0.001$) but not for IgM and IgA levels. These differences in the level of mold antibodies among three different groups were confirmed by calculation of Z score and Scheffé significant difference tests. Using the general linear model for windows 11.5 in the majority of cases, three different subsets were formed. This meant that the healthy control groups were different from the random patients and the mold-exposed patients. These findings indicate that in comparison to healthy blood donors, mold exposure is more common in patients who were referred for immunological evaluation. The detection of antibodies to molds and satratoxin H probably results from the antigenic stimulation of the immune system and reaction of serum with specially prepared mold antigens. These antigens with high protein content, which were developed in this laboratory, were used in the ELISA procedure. It is concluded that the antibodies are specific to mold antigens and mycotoxins and that they can be used in epidemiological and other studies of humans exposed to molds and mycotoxins.

Finally, the detection of IgG antibodies to Satratoxin H shows that the mycotoxin and/or spores and hyphae containing the mycotoxin can behave as an antigen. This probably occurs by binding to carrier mold proteins, and a presentation of cells involved in the immune system responsible for antigen presentation and subsequent antibody production. Similar observations have been reported for aflatoxin B1, patulin and Ochratoxin A used as a hapten.[107-112]

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