CASE CONTROLLED TWIN STUDY: FATAL PULMONARY HEMOSIDEROSIS WITH STUDY OF SURVIVING TWIN. ETIOLOGY: HOME INFESTED WITH STACHYBOTRYS AND ASPERGILLUS MOLD.

GJ Ordog. Henry Mayo Hospital, Valencia, California

One fraternal twin, from a family living in a house contaminated with Stachybotrys chartarum and Aspergillus versicolor, A. niger, and A. fumigatus, died at 18 months of respiratory failure. Autopsy showed pulmonary hemosiderosis, with Aspergillus found by PCR matching of DNA in environmental sampling and in lung samples. Staining revealed antibodies to mycotoxin T-2 and aflatoxin in lung, liver, and brain. The surviving twin had elevated mycotoxin antibodies in serum by enzyme-linked immunosorbent assay (ELISA) testing, confirming a major exposure. The environmental samples confirmed the presence in bulk and dust samples from the house, of T-2 and aflatoxin and an additional 20 mycotoxins in amounts in the microgram range, per gram of test material. The surviving twin exhibited signs, symptoms, and diagnostic testing consistent with immune suppression (NK cells and IL-2), toxic leukoencephalopathy (neurocognitive testing, MRI, PET scanning), and pulmonary disease (HP by mold serology, RADS clinically). Treatment includes removal from the mold contaminated house, symptomatic pulmonary support with bronchodilators and anti-leukotrienes, itraconazole, supplemental support for mycotoxin detoxification. The house and contents were taken to a Class 3 hazardous waste facility for destruction to prevent any further contact with these molds and mycotoxins. Progressive clinical improvement was noted with treatment. Using a series of biomarkers of mold and mycotoxins, this confirms an etiology of environmental mold and mycotoxin exposure for pulmonary hemosiderosis in children.