

Study finds association between exposure to aflatoxin and gallbladder cancer

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In a small study in Chile that included patients with gallbladder cancer, exposure to aflatoxin (a toxin produced by mold) was associated with an increased risk of gallbladder cancer, according to a study in the May 26 issue of *JAMA*.

In Chile, gallbladder cancer is a leading cause of [cancer death](#) in women. Exposure to aflatoxin, a liver carcinogen, is associated with gallbladder cancer in primates. Aflatoxin contamination has been identified in Chile, including in aji rojo (red chili peppers). Aji rojo is associated with gallbladder cancer; however, the association of aflatoxin with gallbladder cancer in humans has not been directly evaluated, according to background information in the article.

Catterina Ferreccio, M.D., M.P.H., of the Pontificia Universidad Catolica de Chile, Santiago, Chile, and colleagues evaluated plasma aflatoxin-albumin adducts (a compound) and gallbladder cancer in a pilot study conducted from April 2012 through August 2013. Aflatoxin forms adducts with albumin in peripheral blood that accumulate up to 30-fold higher with chronic vs single exposure. The researchers assessed aflatoxin B1-lysine adduct (AFB1 adduct) in participants. Aji rojo consumption was determined via questionnaire.

The final analysis included 36 patients (cases) with gallbladder cancer, 29 controls with gallstones, and 47 community controls. Cases and controls had similar characteristics except for aji rojo consumption (greater percentage of case patients had weekly consumption). AFB1-adducts were detected in 23 cases (64 percent), 7 controls with gallstones (18 percent), and 9 community controls (23 percent). AFB1-adduct levels were highest in cases.

"Despite the small number of participants, the associations between aflatoxin exposure and [gallbladder cancer](#) were statistically significant. Recall bias may affect self-reported variables, but

not exposure measurement. We cannot rule out reverse causation (i.e., cancer may affect AFB1-adduct detection) using cross-sectional data. Larger and longitudinal efforts are needed to substantiate these preliminary findings, obtain more precise effect estimates, and identify sources of aflatoxin. These findings, if confirmed, may have implications for cancer prevention," the authors write.

More information: *JAMA*, [DOI: 10.1001/jama.2015.4559](#)

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