

# The case for aflatoxins in the causal chain of gallbladder cancer

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© 2015 Elsevier Ltd. Chronic aflatoxin exposure has long been related to hepatocellular carcinoma (HCC). Recently, its association with gallbladder cancer (GBC) was postulated. Here we present the data supporting this hypothesis in Chile, the country with the highest GBC mortality worldwide with age-standardized mortality rates (ASMR) of 10.3 in women and 5.04 in men. The highest GBC rates occur in Southern Chile (ASMR = 18), characterized by: high Amerindian ancestry, associated with high bile acid synthesis and gallstones; high poverty and high cereal agriculture, both associated with aflatoxin exposure. Aflatoxins have been detected in imported and locally grown foods items. We estimated population dietary exposure ranging from 0.25 to 35.0 ng/kg-body weight/day. The only report on human exposure in Chile found significantly more aflatoxin biomarkers in GBC than in controls (Odds Ratio = 13.0). The hypothesis of aflatoxin-GBC causal link in the Chilean population is supported by: genet