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CHOMPUNUCH JAEWJIRA : THE RELATIONSHIP BETWEEN AFLATOXIN AND HEPATITIS IN THAILAND. THESIS ADVISORS : KAMPON SRIWATANAKUL, Ph.D., PORNTIP SUPAVILAI, Ph.D., YUKOLPORN SINRACHATANANT, M.Sc., PETCHARIN SRIVATANAKUL, Ph.D. 109 P. ISBN 974-661-926-8

Liver diseases associated with hepatitis B virus (HBV) infection and aflatoxinB1 (AFB1) exposure are important health problems in South East Asia and Africa. The relative contributions of these two risk factors and the mechanism of the interaction between them in the pathogenesis of liver diseases are not yet clearly understood. The main objective of this matched case-control study was to assess the association between AFB1 exposure and HBV infection in causing hepatitis disease. Levels of liver enzymes including alanine transaminase (ALT) and aspartate transaminase (AST) levels were measured in 13,050 serum samples collected from the Thai Red Cross Society during January 1995 - February 1996. There were 236 samples shown to have elevated enzyme levels. Matched pairs of cases of liver function abnormality and controls were selected. One hundred and thirty hepatitis case-control pairs of serum samples selected were screened for hepatitis B and C virus infections and tested for AFB1-lysine adducts by competitive enzyme-linked immunoadsorbent assay (ELISA). The AFB1 adducts levels were detected in 39 (30.0%) of hepatitis cases and 46 (35.4%) of matched controls, with the values ranging from 5 - 51.2 pg/mg albumin. Most subjects had low levels of AFB1 adducts (5-15 pg/mg albumin). The association was not shown to be statistically significant with odds ratio (OR) of 0.78 (95% confidence interval (CI) = 0.43-1.42). The present study did not indicate the relationship between AFB1 exposure and hepatitis virus infections in causing hepatitis disease in Thailand.