EDITORIAL COMMENTARY

AFLATOXIN EXPOSURE IN PREGNANT WOMEN IN GHANA

Aflatoxicosis has been associated with primary hepatocellular cancer, infertility, malnutrition and growth retardation. It is a commonly seen in areas where maize and groundnuts are contaminated by the *Aspergillus flavus* and *A. parasiticus.* These fungi grow in hot and humid environments and poor drying of cereals. The fungal agents produce mycotoxins, principally, aflatoxins AFB_1, AFG_1, AFB_2 and AFG_2, which when ingested results in aflatoxicosis. Maize is a common cereal used in staple diet in Ghana.

In this issue of the journal (page 179) we publish the results of a study that looked at the socio-demographic determinants of aflatoxin B_1-lysine adducts in pregnant women in Kumasi, Ghana. Kumasi is in that part of Ghana where maize is grown and consumed. There is evidence of the association between aflatoxin B1 biomarker blood levels and anaemia and birth outcomes, such as low birth weight, in this region.[1,2] These studies on pregnant women are important from the perspective of the influence of the pregnant state and the effect of exposure to aflatoxins on birth outcomes.

Studies in the general population in this area of Ghana have shown socio-demographic factors, such as educational level, ethnic group, geographic location household size, and educational level of children in the household to be significantly associated with AFB 1 albumin adduct levels.[3] The report in this issue of the journal indicates high aflatoxin albumin-adduct levels in the women were inversely associated with indices of higher socioeconomic status.

Interventions to reduce exposure of populations to aflatoxins include managing post-harvest storage and food handling and preparation. There is also evidence that Novasil® clay ingestion can reduce the blood and urine levels of aflatoxin biomarkers in this region of Ghana.[4] While it is important that research continues to determine important determinants of risk, what is already known should form the basis for defining effective interventions to minimize the health risks associated with exposure to these mycotoxins.

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REFERENCES

1. Shuaib FM, Jolly PE, Ehiri JE, Jiang Y, Ellis WO, Stiles JK, Yatich NJ, Funkhouser E, Person SD, Wilson C, Williams JH. Association between anemia and aflatoxin B1 biomarker levels among pregnant women in Kumasi, Ghana. *Am J Trop Med Hyg*. 2010 Nov;83(5):1077-83
2. Shuaib FM, Jolly PE, Ehiri JE, Yatich N, Jiang Y, Funkhouser E, Person SD, Wilson C, Ellis WO, Wang JS, Williams JH. Association between birth outcomes and aflatoxin B1 biomarker blood levels in pregnant women in Kumasi, Ghana. *Trop Med Int Health*. 2010 Feb;15(2):160-7
3. Jolly P, Jiang Y, Ellis W, Awuah R, Nnedu O, Phillips T, Wang JS, Afriyie-Gyawu E, Tang L, Person S, Williams J, Jolly C. Determinants of aflatoxin levels in Ghanaians: sociodemographic factors, knowledge of aflatoxin and food handling and consumption practices. *Int J Hyg Environ Health*. 2006 Jul;209(4):345-58
4. Wang P, Afriyie-Gyawu E, Tang Y, Johnson NM, Xu L, Tang L, Huebner HJ, Ankrah NA, Ofori-Adjei D, Ellis W, Jolly PE, Williams JH, Wang JS, Phillips TD. NovaSil clay intervention in Ghanaians at high risk for aflatoxicosis: II. Reduction in biomarkers of aflatoxin exposure in blood and urine. *Food Addit Contam Part A Chem Anal Control Expo Risk Assess*. 2008 May;25(5):622-34

LOSS OF AN EDITOR: R.K. AFFRAM

On December 26 2012, the Ghana Medical Journal lost one of her long-serving Editors, Professor Raymond Kwame Affram. Professor Affram trained at the University of Ghana Medical School graduating in 1974. He had his postgraduate training in Internal Medicine in Glasgow, Scotland obtaining the Membership of the Royal Colleges of Physicians (United Kingdom) and subsequently Fellowship of the Royal College of Physicians and Surgeons of Glasgow in 1998. He received further training in Nuclear Medicine at the Middlesex Hospital in London, United Kingdom. He had clinical and research interest in nephrology. He was the Head of Department of Medicine and Therapeutics of the Ghana Medical School and the Korle Bu Teaching Hospital from 2003 to 2008. He was the first Chief Examiner for the Faculty of Internal Medicine of the Ghana College of Physicians and Surgeons, of which he was a Foundation Fellow, and subsequently its Chairman. He was also a very active Fellow of the West African College of Physicians.