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A Role for Aristolochic Acid in Cancer Etiology in Viet Nam

Abstract

Aristolochia has been used in traditional medicine in many countries, including Vietnam. It has been shown to cause cancer of the upper urinary tract and possibly the kidney, liver and other organs. Biomarkers of exposure (DNA adducts) are available, and tumours caused by Aristolochia show distinct patterns of mutations. This carcinogenic exposure has never been studied in Vietnam.

The goal of my fellowship is to acquire expertise in the analysis of DNA adducts and genetic mutations caused by exposure to aristolochic acid (AA), the carcinogenic agent in Aristolochia. I plan to visit the laboratory of a leading expert in chemical carcinogenesis, and Aristolochia in particular.

Using archived tissues obtained from patients from my hospital in Hanoi, Vietnam, with cancer of the upper urinary tract, kidney, liver or bile duct, I plan to analyse normal tissue samples for DNA adducts formed by AA; to analyse matched tumour samples for mutations in TP53 and other genes involved in AA-related carcinogenesis; and to plan follow-up collaborative studies.

These objectives will address a potentially important cause of cancer in Vietnam and in general will enable me to acquire expertise in analytical techniques that could be applied to other chemical carcinogens that pose a cancer risk in Vietnam.

The study of liver cancer is of particular significance because this is one of the most common cancers in my country, and the identification of risk factors other than infection with Hepatitis B virus would be of great public health importance.