OPISTHORCHIS VIVERRINI INFECTION AND CHOLANGIOCARCINOMA – UPDATE FROM AN ENDEMIC AREA IN NORTHEAST THAILAND

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Opisthorchiasis caused by the carcinogenic liver fluke, *Opisthorchis viverrini* is a major public health problem in Thailand. It is associated with several hepatobiliary diseases including cholangitis, hepatomegaly, cholelithiasis, cholestasis, and cholangiocarcinoma (CCA), the highly fatal bile duct cancer. There is no stronger link between a human malignancy and a parasitic infection than the link between CCA and infection with the liver fluke, *O. viverrini*. In Thailand, rates of CCA in regions where the parasite is endemic are unprecedented - CCA is responsible for about 15%-25% of liver cancers in the U.S.A. but represents 86.5% of cancers in the Khon Kaen region of NE Thailand, the highest incidence in the world. Deaths from liver cancer in Thailand are exceedingly high and account for 5% of all deaths from liver cancer worldwide. More than 1,000 new cases of liver cancer have presented each year at Srinagarind Khon Kaen University Hospital during the past 20 years. Geographical distribution of liver cancer in Khon Kaen province during 1986-2005 and prevalence of *O. viverrini* in these areas were investigated. The average age-standardized incidence rate (ASR) of liver cancer in Khon Kaen was 38.5 (range 17.1-86.1) and 96.5 (range 51.9-179.1) per 100,000 in females and males, respectively. The high incidence areas clustered in the Chi river basin including Muncha Khiri, Chonabot, Ban Pai, and Kok Phochai districts. The highest incidence at the district level approached 180 per 100,000 males. Other high incidence areas were Phu Wiang and Puey Noi districts. We then surveyed for *O. viverrini* prevalence in 7 villages from Ban Pai, Chonabot and Muncha Khiri districts by stool examination using formalin-ethyl acetate concentration technique. During August 2007-February 2008, of 1,032 volunteers who provided stool samples, aged from 20–60 years old, *Opisthorchis* eggs were found in 554 (average 53.7 %, range 10.6%-74.1%). The maximum egg counts per gram (epg) of feces approached 17,500 although most cases were light infection. Age distribution patterns exhibited high prevalence in the middle to old age groups (35-60 years old). The data reveal that, at present, there is still a high prevalence of *O. viverrini* infection in areas which are endemic for liver cancer in NE Thailand. This corresponds with the high number of new liver cancer cases presented at hospitals in the endemic region. The continued high prevalence of *O. viverrini* infection should urge policy makers from the Ministry of Public Health in Thailand, world health research communities and granting agencies, to take concerted action on the prevention and control of this neglected carcinogenic liver fluke.