Features of Ciguatera Fish Poisoning Cases in Hong Kong 2004-2007

CHUN-KWAN WONG, PATRICIA HUNG, KELLIE L. H. LEE, TINA MOK, THOMAS CHUNG, AND KAI-MAN KAM

Biotoxin Laboratory, Public Health Laboratory Services Branch, Centre for Health Protection, Department of Health, Shek Kip Mei, Kowloon, Hong Kong, China; Food and Environmental Hygiene Department, Queensway Government Offices, Hong Kong, China

Objective To review the clinical features and laboratory investigations of ciguatera patients in Hong Kong between 2004 and 2007 in order to show the timely sampling of implicated fish from ciguatera victims and application of validated mouse bioassay for confirming suspected clinical cases of ciguatera.

Methods Diagnosis of the ciguatera victims was based on history of coral fish consumption and clinical presentations stated in official guidelines for clinical diagnosis of ciguatera fish poisoning in Hong Kong. Food remnants of coral fish samples were collected swiftly from ciguatera victims between 2004 and 2007 for ciguatoxins (CTXs) analysis. Results Major clinical symptoms in ciguatera patients included gastrointestinal and neurological effects including limb numbness and diarrhoea, which developed at 0.5 to 15 hours after consumption of fish. In most cases, neurological symptoms were more common than gastrointestinal symptoms. A broad range of attack rate (10%-100%) was observed in each ciguatera outbreak. Validated mouse bioassay on ether extracts of the food remnant samples confirmed that all were CTXs-positive (<0.5 – 4.3 MU/20 mg ether extract) and directly linked to the corresponding ciguatera cases.

Conclusion Consistency between clinical and laboratory analysis for ciguatera poisoning illustrates the application of laboratory mouse bioassay in a timely fashion for confirming ciguatera poisoning cases and implementing effective public health measures. With further improvement in laboratory techniques, features of ciguatera fish poisoning cases can be better defined. Further studies are needed to determine the risk of each class of CTXs (Pacific-, Indian- and Caribbean-CTXs) in Hong Kong.

Key words: Ciguatera poisoning; Ciguatoxin; Food remnants; Hong Kong; Mouse bioassay

REFERENCES


1Correspondence should be addressed to Dr. K. M. KAM, Consultant Medical Microbiologist, Rm. 731, 7/F, Public Health Laboratory Services Branch, Centre for Health Protection, 382 Nam Cheong St., Shek Kip Mei, Kowloon, Hong Kong, China. Tel: +852-2319-8393; Fax: +852-2376-1446; E-mail: kmkam@dh.gov.hk

Biographical note of the first author: Dr. Kai Man KAM is working as Consultant Medical Microbiologist in Public Health Laboratory Services Branch, Centre for Health Protection, Department of Health, Hong Kong, China

0895-3988/2008
CN 11-2816/Q
Copyright © 2008 by China CDC

*(Received July 24, 2007 Accepted July 15, 2008)*