

REPORT

JOINT WHO/FAO WORKSHOP ON

**FOOD-BORNE TREMATODE
INFECTIONS IN ASIA**



Ha Noi, Viet Nam
26-28 November 2002



**World Health Organization
Regional Office for the Western Pacific**

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Convened by:

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NOTE

The views expressed in this report are those of the participants in the Joint WHO/FAO Workshop on Foodborne Trematode Infections in Asia and do not necessarily reflect the policies of the Organization.

This report has been prepared by the World Health Organization Regional Office for the Western Pacific for governments of Member States in the Region and for those who participated in the Joint WHO/FAO Workshop on Foodborne Trematode Infections in Asia, which was held in Ha Noi, Viet Nam from 26 to 28 November 2002.

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SUMMARY

The World Health Organization (WHO) and Food and Agriculture Organization (FAO) held a joint workshop in Ha Noi, Viet Nam from 26 to 28 November 2002 to review the knowledge on foodborne trematode (FBT) infections, to discuss the possible measures for prevention and control of these infections and to inform Member States of the urgency for the implementation of control activities.

FBT infections affect the health of more than 40 million people throughout the world and are particularly prevalent in WHO's South-East Asia and Western Pacific Regions. These parasites originate an unacceptable burden of suffering and mortality and cause serious damage to aquaculture, which is a valuable source of food and employment in developing countries.

FBTs present particular epidemiological and clinical features that should be carefully considered for the development of appropriate preventive and control measures. Transmission to humans is almost entirely caused by consumption of food containing infective metacercariae. The distribution of these infections is highly focal, depending on the food habits of people and on the presence of susceptible snails. FBTs also present low host specificity, and a high number of definitive reservoir hosts can contribute to the contamination of water and snails, making it extremely difficult to control this aspect of the parasite cycle. From a clinical point of view, trematode eggs frequently cannot be detected in the stools or sputum of suspected cases and the disease presents a specific symptomatology, leading to frequent misdiagnoses. Tools such as serology and ultrasonography, which allow a precise diagnosis, are frequently not available in areas where FBT are endemic.

For all these reasons, the public health approach to control FBT should be based on "large-scale chemotherapy". Progress gained with pharmacological intervention should be sustained by practices that prevent the establishment of infection in fish and introduce high standards of food quality control in the commercial aquaculture sector. Health education significantly reduces risk habits and with good sanitation and hygiene represents a foundation for the prevention of parasitic disease.

Countries where FBT infections occur should establish an intersectoral working group to implement public health interventions, ensuring access to treatment for people living where these infections are endemic, and legislate for best practice for eliminating the risk of FBT infection from aquaculture products.

Two drugs are available for "large-scale chemotherapy". Praziquantel, a compound that is exceptionally well tolerated, is the drug of choice for the treatment of infection with most species of FBTs. In the case of fascioliasis, the only FBT infection for which the efficacy of praziquantel is not considered satisfactory, WHO recommends triclabendazole, a drug that has been used for treating fascioliasis for more than 20 years in the field of veterinary medicine; it is now available for human use.

I. INTRODUCTION

A joint WHO/Food and Agriculture Organization (FAO) Workshop on Foodborne Trematode Infections in Asia was held in Ha Noi, Viet Nam from 26 to 28 November 2002. What follows is a summary of the proceedings from this workshop.

1.1 Objectives

Foodborne trematode (FBT) infections in Asia affect human health in countries where the helminths are endemic, threaten to restrict economic opportunities arising from aquaculture and are of major concern for food safety. These themes were explored in some detail during a WHO Study Group meeting in Manila, October 1993. The Group's report, WHO Technical Report Series No 849 (*I*), provided the foundation for the Workshop's assessment of the current status of FBT infections in Asia. In addition, over 10 years of experience in dealing with FBTs has elapsed since the Manila meeting; this body of knowledge proved helpful in the formulation of recommendations aimed at reducing the burden of disease due to FBTs and the problem they cause to the aquaculture industry.

The workshop had five major objectives:

- review knowledge of FBT infections in relation to control strategies;
- assess the current public health significance of FBT infections in Asia;
- propose practical measures for controlling morbidity due to FBT infections;
- propose practical measures for reducing and preventing transmission of FBT infections; and
- propose practical measures for the prevention and control of FBT infections in the aquaculture industry.

A glossary of the key terms and abbreviations used in the report is provided in Annex 1.

1.2 Background

1.2.1 Foodborne trematode infections

When a living worm at the metacercarial stage is eaten by a suitable host, human infection with FBT occurs. Depending on the species of FBT, infective metacercariae are found encysted on or in fish, crabs, crayfish and plants living in freshwater. Consumption of raw or undercooked freshwater fish, crabs, crayfish and plants carries the risk of infection and disease to people in Asia who live where FBTs are endemic. Countries importing freshwater aquaculture products from Asia must be assured that the best practice for quality control is in operation so that their citizens are protected from FBT infections.

Commonly encountered FBTs in Asia

Trematodes are flukes belonging to the phylum Platyhelminthes which also includes tapeworms. About 70 species of FBTs are known to infect humans. FBT infections are classified as zoonotic infections because they are viewed as animal diseases transmitted to humans. Some infections appear to be rare while others are common and cause serious disease. The species which received most attention at the Ha Noi Workshop are listed in Table 1. Table 2 looks at the number of cases of intestinal trematodes in the Republic of Korea as an example of the extent of the public health concern. Generalizations about the public health significance of a particular species should be considered with caution. Each country must make its own judgements based on the best available local and national information.

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Importance and public health significance in Asia¹

Genus	Species	Source of human infection ²	Location in human body
<i>Fasciola</i>	<i>F. gigantica</i>	Plants	Liver and biliary system
	<i>F. hepatica</i>	Plants	Liver and biliary system
<i>Clonorchis</i>	<i>Fas. buski</i>	Plants	Small intestine
<i>Clonorchis</i>	<i>C. sinensis</i>	Fish	Liver, biliary system and pancreatic duct
<i>Clonorchis</i>	<i>O. viverrini</i>	Fish	Biliary system
<i>Clonorchis</i> ³	Species complex	Crabs and crayfish	Pleural cavity and lungs; occasional brain invasion
<i>Clonorchis</i>	<i>H. taichui</i>	Fish	Mucosa of small intestine
<i>Clonorchis</i>	<i>M. yokogawai</i>	Fish	Mucosa of small intestine

Clonorchis; IF – intestinal flukes

BT Workshop, Ha Noi, Viet Nam, November 2002. For details of the extent and variety of FBT known to infect humans, see
metacercariae encysted on or in freshwater organisms which are regularly eaten raw or undercooked. Metacercariae of *Fasciola* have been
means that a comprehensive taxonomic revision of this genus is required. Until this work has been completed, use of specific names