

Report of the WHO Expert Consultation on Foodborne Trematode Infections and Taeniasis/Cysticercosis

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Abbreviations and acronyms

| | |
|---------|--|
| ADB | Asian Development Bank |
| AE | adverse event |
| CCA | cholangiocarcinoma |
| CDC | Centers for Disease Control and Prevention |
| CLTS | community-led total sanitation |
| CT | computerized tomography |
| DDIHD | diffuse dilatation of the intrahepatic bile ducts |
| EITB | enzyme-linked immunoelectrotransfer blot assay |
| ELISA | enzyme-linked immunosorbent assay |
| epg | eggs per gram (of faeces) |
| FAO | Food and Agriculture Organization of the United Nations |
| FBT | foodborne trematode |
| FECT | formol ethyl acetate concentration technique |
| FEFGB | floating echogenic foci in the gallbladder |
| FES-Ag | <i>Fasciola</i> excretory-secretory antigen |
| GALVmed | Global Alliance for Livestock Veterinary Medicines |
| GIS | geographical information system |
| GNP | gross national product |
| Hb | haemoglobin |
| IBE | International Bureau for Epilepsy |
| IEC | information, education and communication |
| ILAE | International League Against Epilepsy |
| InDepth | International Network for Demographic Surveillance of Populations and their Health in Developing Countries |
| IPDE | increased periductal echogenicity |
| LQAS | lot quality assurance sampling |
| MDA | mass drug administration |
| MIF | minute intestinal flukes |
| MoH | Ministry of Health |
| MRI | magnetic resonance imaging |
| NATO | North Atlantic Treaty Organization |
| NCC | neurocysticercosis |
| NERN | Neurocysticercosis and Epilepsy Research Network |
| NTD | neglected tropical diseases |
| OD | open defecation |
| ODF | open-defecation-free |
| OIE | World Organization for Animal Health |
| PCR | polymerase chain reaction |
| PZQ | praziquantel |
| RFLP | restriction fragment length polymorphism |
| RNAS+ | Regional Network for Asian Schistosomiasis and other Helminth Zoonoses |
| SAE | serious adverse event |
| TB | tuberculosis |
| TCZ | triclabendazole |
| UNDP | United Nations Development Programme |
| UNICEF | United Nations Children's Fund |
| US | ultrasound |
| VPH | veterinary public health |
| WHO | World Health Organization |

1. Introduction

The foodborne trematode (FBT) infections and taeniasis/cysticercosis are among the most neglected tropical diseases due to helminths. While major progress has been made in recent years in reaching populations in need of treatment for lymphatic filariasis, onchocerciasis, schistosomiasis and soil-transmitted helminthiasis, those affected by FBT infections and taeniasis/cysticercosis frequently have no access to adequate assistance.

This neglect is related to the scarce information on their geographical distribution and the lack of resources for their control. However, another reason has been the fact that there were no clear, practical, WHO-endorsed recommendations for use by disease control programme managers.

The main objective of the Expert Consultation on Foodborne Trematode Infections and Taeniasis/Cysticercosis, which took place in the Lao People's Democratic Republic on 12–16 October 2009, was to formulate such recommendations, with the aim of supporting programme managers in endemic countries.

It is hoped that the disease-specific guidelines provided in this document will be instrumental in generating and supporting disease control activities, and in ensuring that all those in need of treatment receive timely and appropriate care.

Part A:

Report of the presentations given during the
WHO Expert Consultation

2. Foodborne trematode infections

Over 100 species of foodborne trematodes are known to cause infections – trematodiasis – in humans. Clonorchiasis, opisthorchiasis, fascioliasis and paragonimiasis are the infections that pose the most significant public health and economic burden. Clonorchiasis and opisthorchiasis are confined to Asia, while paragonimiasis can be found in Africa, Asia and Latin America. Fascioliasis is a global disease, affecting a significant number of countries throughout the world.

At community level, transmission of these four infections is usually focal and it is not uncommon for a given disease to affect one particular village and not a neighbouring one. On a broader geographical scale, the distribution pattern of FBT infections is more diverse. For example, transmission of paragonimiasis is usually limited to a group of districts and the disease can still be described as focal. Clonorchiasis, opisthorchiasis and fascioliasis, on the other hand, tend to be more diffuse and to affect larger geographical areas.

2.1 Country experiences

2.1.1 Current situation

Region of the Americas

In animals, fascioliasis is transmitted throughout the Americas at various levels of endemicity. In humans, the highest burden is found among indigenous farming communities in Andean countries. Transmission to humans is favoured by the fact that most individuals living in affected areas do not understand the relationship between human and animal disease and do not appreciate the risk linked to the consumption of raw vegetables and their derivatives. Ingestion of metacercariae floating on water is also a possible mode of transmission, which might explain the high endemicity found in some communities. From a control perspective, action by the veterinary health services is generally inadequate. Control activities in the human population are equally limited, except in Bolivia and Peru, which are addressing the problem thanks to the triclabendazole (TCZ) donation programme^a.

Knowledge on the distribution and public health significance of paragonimiasis is limited, but the disease is known to occur in a number of countries. Most of the information available comes from Ecuador and Colombia. In Ecuador, 500 000 individuals were estimated to be infected in 1998. No estimates are available for Colombia, but foci of transmission have been detected in indigenous communities. Control interventions are generally limited. Clonorchiasis and opisthorchiasis are not transmitted in the American Region.

South-East Asian Region

In this region, clonorchiasis is transmitted only in the Democratic People's Republic of Korea, while transmission of opisthorchiasis has so far been observed only in Thailand, where the main endemic area is in the north-east. Focal transmission of paragonimiasis has been documented in north-eastern states of India, such as Arunachal Pradesh, Manipur and Nagaland. Fascioliasis is uncommon in humans, but cases have been reported from the Democratic People's Republic of Korea, India and Thailand.

Western Pacific Region

FBT infections are not notifiable diseases in any of the countries in the Western Pacific Region. The magnitude of the public health problem represented by these infections is largely unknown, because of the lack of information on geographical distribution and population infected or at risk. Indirect evidence from the

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