CHAPTER 8.6.

INFECTION WITH ECHINOCOCCUS MULTILOCULARIS

Article 8.6.1.

General provisions

Echinococcus multilocularis (E. multilocularis) is a cestode (tapeworm) which is widespread in some parts of the Northern Hemisphere, and it is maintained mainly in wild animal populations. The adult worms occur in the small intestine of canids (definitive hosts), particularly foxes. Larval stages (metacestode) occur in tissues of liver and other organs of other mammals (commonly rodents) (intermediate hosts). Humans are infected occasionally with the larval stage, which causes severe disease, referred to as ‘alveolar echinococcosis’. Infection does not cause discernible health impacts in livestock.

Foxes and some other wild canids are the most important definitive hosts in maintaining the cycle at the wildlife-human interface through contaminating both rural and urban environments. Dogs may also act as important and efficient definitive hosts in both rural and urban environments, providing an important potential source for human infections. Even though the potential role of felids in transmission of infection to humans cannot be excluded, their epidemiological role is considered negligible. Pigs may become infected but the parasite remains infertile; therefore, they have no role in transmission of the parasite.

For the purposes of the Terrestrial Code, infection with E. multilocularis is defined as a zoonotic parasitic infection of domestic and wild canids, and rodents.

Transmission of E. multilocularis to canids occurs through ingestion of metacestode-infected organs from a range of wild small mammals.

Infection in intermediate hosts, as well as in humans, occurs by ingestion of E. multilocularis eggs from contaminated environments. In humans, infection may also occur following contact with infected definitive hosts or by consumption of food or water contaminated with faeces of canids.

Prevention of infection in humans is difficult, particularly in areas with a high infection pressure maintained by rural and urban foxes. Good food hygiene and personal hygiene, community health education and preventing infection of dogs reduces the risk of human infection. Good communication and collaboration between the Competent Authority and public health authorities is an important component in monitoring the extent of infection with E. multilocularis in human and animal populations.

This chapter provides recommendations for prevention, control and monitoring of infection with E. multilocularis in dogs, and monitoring in wild canids.

Standards for diagnostic tests are described in the Terrestrial Manual.

Article 8.6.2.

Safe commodities

When authorising import or transit of any commodities of livestock, Veterinary Authorities should not require any related conditions regardless of the status of the animal population of the exporting country or zone.

Article 8.6.3.

Programmes for the prevention and control of infection with E. multilocularis in owned and stray dogs

In order to achieve success in the prevention and control of infection with E. multilocularis, the Competent Authority should carry out community awareness programmes to inform people of the risk factors associated with transmission of
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*E. multilocularis*. Such programmes should include information on the importance of echinococcosis in animals and humans, the role of foxes, other wild canids, and dogs, the need to implement preventive and control measures, and the importance of responsible dog ownership.

Whenever the epidemiological situation indicates that a control programme is necessary, the following measures should be undertaken:

1) *Owned dogs* should not be allowed to roam freely unless treated in accordance with point 3).
2) For control of *stray dog* populations, the *Competent Authority* should ensure compliance with relevant aspects of Chapter 7.7.
3) Dogs known to be infected should immediately be treated with praziquantel (5 mg/kg) or another cestocidal product with a comparable efficacy; dogs suspected of having access to rodents or other small mammals should be treated every 21-26 days. Where possible, faeces excreted up to 72 hours post treatment should be disposed of by incineration or burial.

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**Monitoring for infection with *E. multilocularis***

1) Monitoring in foxes and other wild canids
   a) Monitoring for *infection* with *E. multilocularis* in foxes and other wild canids should be undertaken as it is an essential component for assessing the prevalence of *infection*.
   b) Monitoring strategies should be appropriate to local conditions, in particular where large populations of definitive hosts exist. Under these circumstances testing of environmental samples (faeces) may provide a useful indicator of *infection* pressure.
2) Surveillance in slaughterhouses/abattoirs
   As an indicator of the presence of the parasite in the environment, *Veterinary Services* should consider carrying out targeted surveillance for larval lesions of *E. multilocularis* in livers of pigs raised in outdoor conditions.

*Veterinary Authorities* should use information from public health authorities on cases of human *infection*, in the initial design and any subsequent modification of *surveillance* and monitoring programmes.

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**Recommendations for the importation of dogs and wild canids from an infected country**

*Veterinary Authorities* of importing countries should require the presentation of an *international veterinary certificate* attesting that:

1) the animal has been treated between 24 and 72 hours prior to embarkation with praziquantel (5 mg/kg), or another cestocidal product with a comparable efficacy against intestinal forms of *E. multilocularis*;
2) adequate precautions have been taken to avoid reinfection of the animal between treatment and embarkation.

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NB: FIRST ADOPTED IN 1982.