

or albendazole. Expert consultation before treatment is recommended because of the risk of increasing focal cerebral edema and seizure activity.

Intestinal Tapeworms

Tapeworms that commonly infect humans include *Taenia solium* (from raw pork), *Taenia saginata* (raw beef), and *Diphyllobothrium latum* (raw fish). Most infections are asymptomatic except in the case of invasive disease with *T. solium*, as discussed earlier (see Cysticercosis). Praziquantel is the treatment of choice for all three tapeworms.

Echinococcus

The tapeworm *Echinococcus granulosus* causes hydatid disease with production of a cystic liver mass. This occurs in immigrants from sheep-raising parts of the world such as South America, Central Asia, and the Middle East. The characteristic appearance of the cyst includes a calcified wall with a dependent hydatid on CT scans. This appearance and the supporting history help to make the diagnosis; the serologic testing available can be falsely negative. Treatment is surgical removal of the cyst without rupture or spillage of the contents. Albendazole is usually given before surgical removal.

Less common is *Echinococcus multilocularis*, which causes alveolar cyst disease. This more aggressive infection leads to liver

lesions as well as brain and lung involvement. Treatment includes resection of liver lesions in combination with antiparasitic therapy with mebendazole or albendazole. However, these agents are not parasitocidal, so the mortality rate remains high. Other potential therapies, such as amphotericin B and nitrazoxanide, are being explored.

SUGGESTED READINGS

- Arguin P: Approach to the patient before and after travel. In Goldman L, Schafer A, editors: Cecil Textbook of Medicine, ed 24, Philadelphia, 2012, Saunders, pp 1800–1803.
- Centers for Disease Control and Prevention: CDC Health Information for International Travel 2014, New York, 2014, Oxford University Press.
- Jerónimo S, de Queiroz Sousa A, Pearson R: Leishmaniasis. In Guerrant RL, Walker DH, Weller PF, editors: Tropical Infectious Diseases: Principles, Pathogens, and Practices, ed 3, Philadelphia, 2011, Saunders, pp 696–706.
- Kirchoff L: Trypanosoma species (American trypanosomiasis, Chagas' disease): biology of trypanosomes. In Mandell GL, Bennett JE, Dolin R, editors: Principles and Practice of Infectious Diseases, ed 7, Philadelphia, 2010, Churchill Livingstone, pp 3481–3488.
- Leder K, Torresi J, Libman M, et al: GeoSentinel surveillance of illness in returned travelers, 2007–2011, *Ann Intern Med* 158:456–468, 2013.
- U.S. Department of Commerce, Office of Travel and Tourism Industries: Profile of U.S. resident travelers visiting overseas destinations: 2011 Outbound. Available at: http://travel.trade.gov/outreachpages/download_data_table/2011_Outbound_Profile.pdf. Accessed November 3, 2014.

