ECHINOCOCCUS MULTILOCULARIS: PARASITIC BURDEN AND RESISTANCE TO REINFECTION IN AN ALTERNATIVE DEFINITIVE HOST, THE GOLDEN HAMSTER

Yusuke KONDOH

Department of Parasitology,
Faculty of Veterinary Medicine,
Hokkaido University, Sapporo 060, Japan

The natural definitive hosts of *Echinococcus multilocularis* are canids, but the golden hamster *Mesocricetus auratus* can also serve as an experimental alternative definitive host after treatment with prednisolone. Moreover, in non-treated golden hamsters, the recovery of a few sexually mature worms has also been reported. To study the innate and acquired resistance to the initial tapeworm stage of *E. multilocularis* in non-treated outbred golden hamsters, two groups of animals, one naive and the other primed by oral infection followed by anthelminthic treatment, were orally inoculated with about 10,000 protoscoleces. Although the initial intestinal parasitic burdens of both groups were similar, by day 5 postinfection (PI), rejection of the tapeworms occurred earlier in the primed group than in the naive group. Histopathologically, eosinophilic infiltration was observed in the lamina propria near the attachment sites of the parasites in both groups.

The degree of susceptibility of 5 inbred strains of golden hamster (ACN, AN, APG, CBN and CN) to *E. multilocularis* oral infection was also examined by oral inoculation of about 10,000 protoscoleces and the recovery of the worms on day 8 PI. The ACN and APG strains were found to be the most resistant followed by the CBN and CN strains. Since the AN strain was the most permissive among the 5 strains tested, it was used to study the acquired resistance to *E. multilocularis* oral infection.

More worms were recovered from the naive animals than from the primed animals on day 5 PI in the AN strain, after oral inoculation with about 10,000 protoscoleces. The difference however was not statistically significant. In all of the above experiments, the worms were recovered mainly from the upper and the middle small intestine.