

***ECHINOCOCCUS MULTILOCCULARIS* TRANSMISSION IN URBAN AREAS**

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In many European cities there has been a marked increase of urban fox populations for the past 15 years. This development prompted us to initiate an interdisciplinary project investigating the transmission ecology of *Echinococcus multilocularis* in urban areas. The overall prevalence of *E. multilocularis* in foxes from the municipality of Zurich was 44.3%. Preliminary results of a telemetry study showed that urban foxes have small homeranges and often live in family groups with more than two adults resulting in a high fox population density. Some foxes live exclusively in the built up areas, whereas others also roam the adjacent recreational areas which provide suitable habitats for different Arvicolidae. In these areas we found a significantly higher *E. multilocularis* prevalence in foxes and a significantly higher proportion of field fox faecal samples, which were coproantigen-positive for *E. multilocularis* as compared to the built up areas. The *E. multilocularis* prevalence in rodents trapped in the recreational areas surrounding the city ranged from 9.2% in 781 *Arvicola terrestris*, 2.3% in 87 *Clethrionomys glareolus* to 0% in 32 *Microtus* sp. In the *A. terrestris* population in the city of Zurich, we found a high prevalence (11.4%) of *Taenia taeniaeformis*, a parasite with domestic cats as main final hosts. The fact that *T. taeniaeformis* was not detected in foxes in this area indicates that domestic cats do prey on *A. terrestris* and therefore also could acquire *E. multilocularis* infections. As the cycle of *E. multilocularis* in urban settlements seems to be determined by small homeranges of foxes and the distribution of suitable intermediate hosts, we suggest that local interventions in the cycle aiming at reducing the infection pressure in defined areas (e.g. public parks, swimming pool areas, private gardens) should be feasible. We tested this hypothesis by distributing praziquantel-containing baits in six areas of 1 km² monthly and examining faecal samples by coproantigen ELISA and PCR for egg identification. Preliminary results document a significant decrease of the environmental contamination with *E. multilocularis* eggs in these intervention areas as compared with control areas.



**XXth INTERNATIONAL CONGRESS
OF
HYDATIDOLOGY**

**4-8 June 2001
KUSADASI-TURKEY**

ABSTRACT BOOK

**INTERNATIONAL ARCHIVES OF THE HYDATIDOSIS
VOLUME XXXIV**