

7 Summary

The occurrence of *Echinococcus granulosus* in dogs and cystic echinococcosis in cattle and sheep in Kosova

Surveys were carried out during the period March 2003 – February 2004 to assess the occurrence of echinococcosis in dogs and cystic echinococcosis in cattle and sheep. Additionally, the incidence of surgically treated-hydatidosis patients was investigated.

Shedding of taeniid eggs was found in 23 (7.5%) out of a total of 305 dogs, using the flotation-ovassay technique. Eggs from other helminths were detected as well: hookworms 139 (45.5%), *Trichuris vulpis* 87 (28.5%), *Toxocara canis* 42 (13.7%), *Toxascaris leonina* 21 (6.8%) and *Dypilidium caninum* 8 (2.6%).

The CA-ELISA (Coproantigen-Enzyme-Linked Immunosorbent Assay) was used in a sample of 144 out of the total 305 faecal samples from dogs maintained under different management systems. In six samples (1.96%) coproantigens of *E. granulosus* were detected.

The flotation-sieving technique was applied to collect taeniid eggs for PCR; of the 305 samples 21 (6.9%) contained taeniid eggs. In these positive samples specific PCR primers for *E. granulosus*-“sheep strain” found 1.3% (4/305) positive with canine echinococcosis.

The isolates originated from one stray dog, two animals used for hunting and sheepdogs, respectively, and the last case was a pet dog. Most of the eggs (38%) were shedded from the sheep dogs, followed by the stray dogs (29%), hunting dogs (19%) and pat dogs (14%).

A semi-quantitative analysis of the shedded taeniid eggs showed low-moderate (2-10) egg counts of *E. granulosus* (“sheep strain”) under a cover slip or in culture tube. However, dogs shedding high (11-20) or very high numbers (>20) of eggs, were found negative when using the PCR for the *E. granulosus*-“sheep strain”.

Specific primers for *E. multilocularis* did not react with the taeniid eggs.

Out of a total of 365 slaughtered cattle 87 (23.8%) were infested with cystic echinococcosis. Only lungs and liver were infested. Up to 10 cysts could be detected in 80% of all cases. The cysts found in the lungs were generally larger than those from the livers. No cases of fertile cysts with protoscolices were detected.

Echinococcosis cysts were found in 68 (46.2%) of 147 slaughtered sheep.

The results indicate that the habit of domestic slaughtering of livestock without veterinary

supervision can play a very important role in the epidemiology of echinococcosis. Slaughtering of cattle is generally performed during winter and the contaminated organs are either given to dogs or discarded.

During the last three years 163 patients had to undergo clinical surgery for removal of cystic echinococcosis in the central university hospital of Prishtina. About 75% of these came from rural areas, the remainder were living in urban areas.