

Transmission of *Echinococcus* species in pastoral communities in southern Kyrgyzstan

van Kesteren F., Mastin A, Craig PS, Torgerson PR, Mytova B, Ziadinov I., Giraudoux P., Raoul F., **Rogan MT**

Human cystic echinococcosis (CE) (*Echinococcus granulosus*) and alveolar echinococcosis (AE) (*E. multilocularis*) are emergent public health problems in Kyrgyzstan. Community, veterinary and ecological investigations were undertaken in 2012-13 in the Alay Valley, south Kyrgyzstan. Ultrasound screening detected AE (7% prevalence) but no human CE cases. Arecoline purgation of 20 dogs revealed 8 (40%) infected with *Echinococcus* spp.; PCR analysis of worms revealed presence of *E. granulosus* (G1), *E. canadensis* (G6) and *E. multilocularis*. An *Echinococcus* spp coproantigen ELISA-based survey of owned dogs (n= 333) in 10 villages gave a copro-prevalence of 26.4%. PCR testing confirmed presence of all 3 species in dogs. The study found that sheepdogs had lower odds of coproantigen positivity, as did households with donkeys; knowledge of echinococcosis; and no involvement in home slaughtering. There was no association between free roaming or previous dog dosing with coproantigen positivity. Environmental sampling of canid faeces indicated high contamination levels in villages with some faecal samples positive for DNA from *E. canadensis* or *E. multilocularis*. A small mammal survey indicated high densities of Zaisan mole voles (*Ellobius tancrei*) in and around villages; *E. multilocularis* lesions were confirmed in *E. tancrei*.