

Update on knowledge of transmission of *Echinococcus* to humans

Alvarez Rojas C.A., Deplazes, P.

Institute of Parasitology, Vetsuisse Faculty, University of Zürich, Switzerland

Humans are dead-end hosts for *Echinococcus* spp acquiring the infections by uptake of viable parasite eggs from contaminated/unwashed food sources; or via exposure by hand-mouth contact to eggs derived from the environment (coat of definitive hosts). In fact, *Echinococcus* spp has been recently claimed to be an important food-borne parasite, however, this still needs confirmation as, for example, is not possible to know if all eggs found in food sources are viable. Contamination rates of taeniid eggs between 0.9 and 18.3% have been reported in vegetables from different parts of the world. However, to date, there is no standardized methodology for detecting taeniid eggs in food samples. Even more, the relative importance of the different mechanisms of transmission remains unknown because they are difficult to quantify and because they vary between and within endemic areas. For example, in some endemic areas, there is no availability/consumption of fresh produce; therefore, the most likely way of transmission can be the hand to mouth after close contact with an infected dog. Molecular detection/identification of *Echinococcus* infection in different matrices has improved enormously in recent years. However, the detection of *Echinococcus* in soil specimens is much less efficient than with faeces. Recent studies have detected DNA of *Echinococcus* spp in food, soil and also in water. One main concern of such studies is the lack of inclusion of test to investigate if any egg found in these matrices is actually viable. To date, there is no *in vitro* test for assessing the viability of the eggs of *Echinococcus* species. This presentation aims to highlight key points in which there is a lack of knowledge on the transmission of *Echinococcus* to humans, data regarding a standardized method for detection of *Echinococcus* and other taeniids in food sources for human consumption is also presented.

Key words: *Echinococcus*, transmission, foodborne