Detection of *Echinococcus multilocularis* metacestodes of Asian origin in human samples from Warmia-Masuria (north-eastern Poland)

Paweł Gładysz[a,b], Anna Lass[b]

[a]Department of Forensic Medicine, Medical University of Gdańsk, Dębowa 23, 80-204, Gdańsk, Poland

[b]Department of Tropical Parasitology, Institute of Maritime and Tropical Medicine, Medical University of Gdańsk, Powstania Styczniowego 9B, 81-519, Gdynia, Poland

Abstract

Recently reported presence of Asian-genotype *Echinococcus multilocularis* tapeworms in Eastern European red foxes prompted the question of metacestode descent in the human population. In this study, a Maximum Likelihood tree based on partial sequences of *E. multilocularis* mitochondrial genes *cox1*, *cob* and *nad2* coupled with hierarchical clustering analysis of EmsB microsatellite profiles revealed Asian ancestry in two samples from alveolar echinococcosis patients living in Warmia-Masuria, north-eastern Poland, implying that the increasing red fox synanthropy facilitates infiltration of genotypes to date associated only with the sylvatic cycle into the human population.