**Echinococcus canadensis** in reindeer in Northern Europe and Northwestern Siberia

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**ABSTRACT:**

Tapeworm *Echinococcus canadensis* is one of the causative species of cystic echinococcosis, a significant zoonotic disease. Dogs and wolves are definitive hosts for *E. canadensis*, and in Northern regions cervids act as intermediate hosts. Two mitochondrial genotypes, G6 and G10, have been reported in reindeer. The parasite has disappeared from reindeer population in Norway and Sweden. In Finland, only one or a few cases are found annually in meat inspection. Endemic human cases have not been reported from reindeer husbandry area of these countries for 40 years. The parasite is maintained only in wildlife cycle (wolves and wild cervids) in backwoods of Eastern Finland. In Murmansk region, prevalence of reindeer echinococcosis is ca 2%. Two human cases were reported during the past 10 years, but their origin is unknown. In Yamalo-Nenets Autonomous Okrug (YaNAO), Northwestern Siberia, prevalence of echinococcosis in reindeer is ca 4%. The number of human cases in YaNAO was halved over the past 15 years, but still 16 cases were diagnosed in 2017. The patients were reindeer herders or their family members. Survival of traditional nomadic reindeer herding culture in YaNAO, with an extensive use of dogs, can explain the foothold of echinococcosis. Despite significance of reindeer echinococcosis in Northern Russia, knowledge on parasite genotypes is based only on very limited data from Sakha Republic. In this winter, as a joint research between Finland and Russia, One Arctic – One Health project is aiming to clarify genetic diversity, phylogeography and epidemiology of *E. canadensis* in reindeer in Northern Russia from Murmansk region to YaNAO. Specimens will be collected for sequence analyses in reindeer slaughterhouses during routine meat inspection.