Molecular Characterization of *Echinococcus granulosus* Ssensu Stricto Isolated from the Livestock of Qazvin, Iran

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Abstract

Introduction: Hydatidiosis is a serious parasitic disease in humans and livestock, worldwide. *Echinococcus granulosus* shows notable genetic variation among intermediate hosts. Several genotypes of the worm have been reported from different parts of Iran, but no information on the parasite genotypes status in the study region is available. The current study investigated the presence of different genotypes of *E. granulosus* in the livestock of Qazvin, Iran, by sequencing the mitochondrial Cox1 genes.

Methodology: One hundred twenty *E. granulosus* isolates, including 30 from goats, 40 from cattle and 50 from sheep, were collected from the slaughterhouses in Qazvin province. Mitochondrial Cox1 gene region was amplified by PCR and 30 isolates were sequenced. Phylogenetic analysis was performed by using the MEGA 7.0 software. Morphological analysis was performed on rostellar hook length of protoscoleces.

Results: All isolates were identified as *E. granulosus sensu stricto* (G1-G3 complex) among 17% of the isolates clarified as G3 genotypes. G1 was the predominant genotype among the specimens. No significant difference between the rostellar hooks measurements of different genotypes was observed.

Conclusion: Our findings confirmed the presence of *E. granulosus sensu stricto* in the region, although further studies are required to determine the haplotype diversity of *E. granulosus* using different mitochondrial and nuclear genes.

Keywords: Cox1; *Echinococcus granulosus*; Iran.; Qazvin; genotype; livestock