Original Paper

Identification of *Fasciola* species by PCR-RFLP assay in northern Iran

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Abstract

Background and Objective: Identification of *Fasciola* species is important. Fascioliasis is one of the important diseases in animals and humans caused by genus *Fasciola*. This study was done to determine the identification of *Fasciola* species with RFLP-PCR in animal liver in Gorgan City, northern Iran.

Methods: In this descriptive study, worms were obtained from the livers of infected sheep and cattle in Gorgan slaughterhouse in northern Iran. DNA of worms was extracted with phenol- chloroform method. Fragment of ITS-1 genome was amplified and TasI enzyme was utilized for amplified fragments then 8 samples were sequenced.

Results: A total of 49 *Fasciola* worms were isolated from infected cattle and sheep. The PCR products of all specimens were affected by the TasI enzyme, and *F.hepatica* species showed two fragments and *F.gigantica* species indicated three fragments. The enzyme in *F.hepatica* species showed a fragment of 151 bp and a fragment of 312, but in the *F.gigantica*, three fragments were 151, 93 and 219 bp. 36 (73.46%) worms were identified as *Fasciola* gigantica and 13 (26.53%) worms were identified as *Fasciola* hepatica. Out of the six infected sheep liver, 22 were isolated from the *Fasciola* worms, 13 (59.1%) of which were *F.hepatica* and 9 (40.9%) of them were *F.gigantica*. Out of the six infected cattle liver, 27 *Fasciola* worms were identified, all of which were identified as *Fasciola* gigantica (100%).

Conclusion: This study showed that *Fasciola* gigantica is the dominant species in infected livers of the cattle in Gorgan city.

Keywords: Liver, Sheep, Cattle, *Fasciola* gigantica, *Fasciola* hepatica, RFLP-PCR

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