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Short communication

A retrospective survey of liver fluke disease in livestock based on abattoir data in Shiraz, south of Iran

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Abstract

Meat-inspection records in an abattoir located in the Fars province (southern part of Iran) from 20 March 1999 to 19 March 2004 were used to determine the prevalence and long-term trend of liver fluke disease in sheep, cattle and goats in the region. A total of 844,039 animals (cattle 131,716; sheep 577,090; goats 135,233) slaughtered in the 5-year period and overall 34,856 (4.1%) livers were condemned. Fasciolosis and dicrocoeliosis were responsible for 54 and 21% of total liver condemnations, respectively. The prevalence of liver condemnations due to fasciolosis was decreased from 3.89, 3.20 and 2.63% in 1999–2000 to 1.07, 0.59 and 0.24% in 2003–2004 for cattle, sheep and goats, respectively. The corresponding features for dicrocoeliosis were similar, declining from 1.47, 1.76 and 2.10% in 1999–2000 to 0.69, 0.34 and 0.25% in 2003–2004, respectively. Drought climatic conditions in conjunction with a greater awareness among farmers could be responsible factors.

Keywords: Liver fluke; Abattoir; Prevalence; Iran

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1. Introduction

Among diseases which are not often apparent to the farmers but are of considerable economic and public health importance is liver fluke infections (*Fasciola hepatica*, *Fasciola magna*, *Dicrocoelium dendriticum* and *Fascioloides magna*). The prevalence of human fasciolosis in many parts of Iran is quite high and was reported to be as high as 10,000 cases for some years (Massoud, 1993; Abdou, 2000). In the absence of statistically sound epidemiologic data, evaluating liver fluke prevalence in livestock based on liver-condemnation statistics might be useful. Information about infections of cattle, sheep and goats with liver fluke in south-western Asia is limited to some countries such as Iraq (Mahdi and Al-Baldawi, 1987), Pakistan (Anwar and Chaudhri, 1984), Saudi Arabia and Turkey (Over et al., 1992). We did this study to estimate the prevalence of liver flukes in abattoir populations of cattle, sheep and goats in the southern part of Iran for the period 1999–2004.

2. Materials and methods

This study is a retrospective survey from 20 March 1999 to 19 March 2004. Daily condemnation records for cattle, sheep and goats in the largest abattoir in Shiraz (Fars province, south of Iran) were used. As a part of ongoing surveillance system, every slaughtered animal is examined by meat inspectors in the course of their routine duties. The reasons for condemnation of organs including liver flukes are recorded daily on prepared data sheets. Diagnosis of flukes and distinction between types are done macroscopically based on gross appearance. No other information regarding demographic data is recorded routinely. The prevalence was collated on a yearly basis. Analysis of data was done using Epi Info software (version 3.3). Secular trends in risks of fluke-specific liver condemnations across the 5-year period were tested by χ^2 tests for trends (Armitage et al., 2002), for each host and parasite separately ($\alpha = 0.05$).

3. Results

In the 5-year period, 844,039 animals were slaughtered in the study abattoir. Fasciolosis and dicrocoeliosis were responsible for 54 and 21% of total liver condemnations in this period, respectively. The annual prevalences for these parasitic infections in the 5-year period are shown in Table 1. Fasciolosis was more prevalent than dicrocoeliosis. Liver condemnations due to both parasites decreased across the 5 years (all χ^2 were $\geq$98.1, d.f. = 1 and $P < 0.0001$).

4. Discussion

We found low prevalences consistent with what others have found for this region. In Iraq, an abattoir survey in Basrah revealed that the prevalences for hepatic fasciolosis