An abattoir-based study on the prevalence of hydatidosis in livestock in Mashhad, Iran

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Abstract

A 6-year (2004–2010) retrospective study was carried out to determine the prevalence of hydatidosis in livestock slaughtered in Mashhad abattoir, Mashhad, in north-eastern Iran and the capital of Khorasan province. Between 20 March 2004 and 19 March 2010, 5,131,485 animals (411,163 cattle; 4,547,618 sheep; 172,704 goats) were slaughtered in the study area and 388,399 (7.5%) livers and 1,139,529 (22.2%) lungs were discarded. Hydatidosis was responsible for 4% and 6.5% of total livers and lungs inspected, respectively. Of the cattle livers and lungs inspected over the survey period, 5.5% and 7.9% were condemned, respectively, because they held hydatid cysts. The corresponding values for livers and lungs of sheep (2%, 4%) and of goats (4.5%, 7.8%), respectively, were also condemned due to hydatidosis. Data showed a prominent seasonal pattern for hydatidosis. Liver condemnations due to hydatidosis were higher in winter and autumn for cattle and sheep, respectively, whereas lung condemnations were higher in summer for sheep and cattle. In goats, liver and lung condemnations were higher in winter. This could be attributed to various factors, such as sources of slaughtered animals, changes in management practice and ecological factors. The present survey provides baseline data for the future monitoring of this potentially important parasitic disease in the region.

Introduction

Hydatidosis is a condition of livestock and humans that arises from eating infective eggs of the cestode Echinococcus granulosus. Dogs are the primary definitive hosts for this parasite, with livestock acting as intermediate hosts and humans as aberrant intermediate hosts. Distribution of hydatidosis is considered to be worldwide but is higher in developing countries, especially in rural communities where there is close contact between dogs and various domestic animals (Eckert & Deplazes, 2004). There are several reports from countries of the Middle East, including Iran, which found cattle, sheep and goats infected with hydatid cysts (Ansari-Lari, 2005; Ahmadi & Meshkehkar, 2011). However, there are few available data at international level concerning the infection rate in livestock from Khorasan province (Borji & Parandeh, 2010). This study was undertaken to estimate the prevalence and possible trends of hydatidosis in livestock of Mashhad, using abattoir data.

Materials and methods

This study was based on a retrospective survey covering data collected over a 6-year period (20 March 2004 to 19 March 2010) from Mashhad abattoir in Khorasan province, in north-eastern Iran. Meat-inspection records from Mashhad abattoir were used as the source of data from which prevalence of liver and lung condemnations due to hydatidosis were extracted on a monthly basis.

Data were analysed using the SPSS software package, version 16 (SPSS Inc., Chicago, Illinois, USA). A 6-year-period