

Short communication

PREVALENCE OF HYDATIDOSIS IN SHEEP AND GOATS SLAUGHTERED AT DAMATURU ABATTOIR, YOBE STATE, NIGERIA.

TIJJANI, A. O., MUSA*, H. I., ATSANDA, N. N. and MAMMAN, B.

Department of Veterinary Public Health and Preventive Medicine
Faculty of Veterinary Medicine, University of Maiduguri, Maiduguri, Nigeria

*correspondence: E-mail: *mhasanim@yahoo.com* .Tel. +234 803 887 9488

INTRODUCTION

Parasitic diseases including hydatidosis are limiting factor in food animal production and hampers the realization of meat supply to meet the ever increasing demand for animal protein by human population (Srivastava *et al.*, 1983). Hydatidosis is a parasitic zoonotic disease caused by the metacestode (hydatid cyst) stage of the dog tapeworm *Echinococcus granulosus* (Soulsby, 1982). The parasite, *E. granulosus* has little host specificity with regard to intermediate hosts, hydatid cysts have been seen in a wide range of mammals, including domestic ruminants, camels, giraffes, pigs, equines, elephants, hippopotamuses, marsupials and different types of deer, as well as humans (FAO, 1982; Raush, 1986). The lungs and liver are the most favoured predilection sites for the developing cyst (CAB International, 1989; Schantz, 1990; Bui and Abagwe, 2001). The parasite is world wide and besides the associated economic losses due to livestock mortality, morbidity, and organ and meat condemnation at meat inspection, hydatidosis also poses a serious threat to public health where close association exists between dogs, man, and food animals (Blaha, 1989).

Prevalence studies of the disease have been carried out in India (Srivastava *et al.*, 1983), Cairo (Thompson 1986) and in some states in Nigeria (Arene, 1985; Dada and Belino, 1987; Ajogi *et al.*, 1995; Adamu and Ajogi, 1998; Bui and Adindu, 2004). However, there is paucity of information on the disease in Yobe state, thus this study was designed to determine the prevalence of the disease in sheep and goats slaughtered for public consumption at Damaturu abattoir between 2003 and 2006 so as to know the trend of the disease. Because the disease is a parasitic zoonosis the findings can be used to plan for the reduction of the problem in small ruminants thereby reducing the incidence in human population.

Key words: Prevalence, Hydatidosis, Ruminants, Slaughter, Abattoir

MATERIALS AND METHODS

Study Area:

The research was carried out at Damaturu abattoir, Yobe State located in the semi – arid zone of North – eastern Nigeria

with an estimated land mass of 47,153 square kilometres. The state is one of the highest livestock producers in the country (Bourn *et al.*, 1994).

Retrospective study: Previous meat inspection and slaughter records dating 2003

to 2005 was obtained from the abattoir based on the number of animals slaughtered, the species, the sex and number with hydatid cysts for each year.

Sample collection and examination: visits were made to the abattoir in 2006 for 16 weeks and animals slaughtered were grossly examined for hydatid cysts based on their sex, species and organs infected. The suspected cysts were collected in 10% formalin and taken to the Veterinary Parasitology Laboratory, University of Maiduguri for identification using the description of Soulsby, (1982)

Statistical Analysis: Simple percentage and

Chi-Squared were used to statistically analyse the data generated from the study.

RESULTS

The results of this study showed that of the 29120 sheep and 87253 goats slaughtered at the Damaturu abattoir between 2003 and 2005, 20(0.07%) and 11(0.01%) respectively were recorded to have hydatid cysts. Also of the 3692 sheep and 4823 goats examined at meat inspection in 2006, 20 (0.54%) and 27 (0.56%) respectively had the cysts (TABLE I).

TABLE I: Prevalence of hydatidosis in slaughtered sheep and goats at Damaturu Abattoir between the year 2003 and 2006.

Year	Sheep No. examined	No. (%) infected	Goat No. examined	No. (%) infected
2003	8947	2 (0.02)	27924	3 (0.01)
2004	9876	2 (0.02)	29239	4 (0.01)
2005	10297	16 (0.16)	30090	4 (0.01)
2005	3692	20 (0.54)	4823	27 (0.56)

The results of the sex distribution indicated that of the 18432 male and 14380 female sheep, 16 (0.09%) and 24 (0.17%) respectively had the cysts. While of the 51404 male and 40672 female goats, 15 (0.03%) and 23 (0.06%) respectively had the cysts (TABLE II).

TABLE II: Prevalence of hydatidosis in sheep and goats slaughtered at Damaturu abattoir between 2003 and 2006 based on sex.

Sex	Sheep		Goat	
	No. examined	No. (%) infected	No. examined	No. (%) infected
Male	18432	16(0.09)	51404	15 (0.03)
Female	14380	24 (0.17)	40672	23 (0.06)
Total	32812	40 (0.12)	92076	38 (0.04)

In sheep, infected organs showed that lungs, liver and spleen had 0.33%, 0.11% and 0.05% and in goats 0.33%, 0.12% and 0.06% prevalence respectively (TABLE III).

TABLE III: Prevalence of hydatid cysts infected organs at Damatura abattoir, 2006

Species	No. of animals examined at slaughter	No. (%) of organs infected		
		Lungs	Liver	Spleen
Sheep	3672	12 (0.33)	4 (0.11)	2 (0.05)
Goats	4872	16 (0.33)	6 (0.12)	3 (0.06)
Total	8544	28	10	05

DISCUSSION

The prevalence of 0.54% and 0.56% for sheep and goats respectively were observed among the grossly inspected samples compared to 0.07% and 0.01% for sheep and goats respectively in the retrospective study. However, there was no significant difference in the prevalence ($p>0.05$) of both studies. This means that the prevalence of the disease in both species did not vary significantly over the years. The overall prevalence of 0.1% in the small ruminants and specific prevalence of 0.12% and 0.04% for sheep and goats respectively were however; lower than earlier reported values (Arene, 1985; Dada and Belino, 1987; Ajogi *et al.*, 1995; Adamu and Ajogi, 1998; Biu and Adindu, 2004) from other parts of the country. This may be attributed to periodic treatment of small ruminants with antihelmintics by the pastrolists who now patronized veterinary services. The no significant difference observed in the sex susceptibility to the disease suggests that sex may not be a predisposing factor in the occurrence of this disease. A statistical significant difference ($p< 0.05$) was established in infected organs with the lungs of both species more affected than the liver and spleen. This agrees with earlier reports (CAB International, 1989; Schantz, 1990, Biu and Abagwe, 2001) and may be attributed to the fact that larvae in ruminants are released from the intestine and penetrate through the portal circulation to lodge first in the liver, then the lungs and other organs.

In conclusion, the prevalence of the disease in sheep and goats in the study area is low. However, the low prevalence is of significance largely from the zoonotic point of view and small ruminants being major source of meat in rural areas. In addition to periodic treatment of small ruminants and dogs with anthelmintics, proper meat inspection and incineration of infected

organs should be enhanced to effectively control the disease.

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