

A Comparative Study on the Prevalence of Some Parasites in Animals Slaughtered at New Taif Abattoir

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Abstract: A total number of 2470 imported sheep (from Australia, Turkey, Somalia, Rumania and the Sudan), 142 imported cattle (from Hungary, Rumania, Bulgaria and U.S.A.), 5 imported camels (from Sudan) and 4050 indigenous sheep (2050 Najdi and 2000 Harri) was examined during post-mortem inspection at Taif abattoir for the presence of macroscopically discernible parasites. Blood smears from the animals were also examined for protozoa. The prevalence of hydatidosis averaged 9.25% in Turkish sheep, 4.58% in Sudanese sheep, 0.43% in Australian sheep and 0.0% in other animals. Fascioliasis was recorded at rates of 17.55% in Turkish sheep, 7.90% in Sudanese sheep, 2.3% in Somali sheep, 2.11% in Rumanian sheep, 0.28% in Australian sheep and 4.22% in cattle. None of the imported camels or indigenous sheep was infected with fascioliasis. Cysticercosis prevalence was 1.62% in Turkish sheep, 1.6% in Sudanese sheep and 0.34% in Australian sheep; other animals were not infected. Nasopharyngeal myiasis was recorded in 3 of the 5 camels. Blood films showed few positive cases of *Theileia ovis*; and *Trypanosoma* sp.

Key words: Trematodes · Cestodes · Hydatidosis · Fascioliasis · Cysticercosis · Protozoa

INTRODUCTION

Saudi Arabia is a rapidly developing country and the need for animal food products is steadily increasing. Since indigenous livestock cannot satisfy the increasing human demands, importation of food animals from other various countries is unavoidable. Between 2004-2007 the annual average number of slaughtered animals in Saudi Arabia was 4,079,756 heads of imported (85.6%) and 687,116 heads of indigenous livestock (14.4%) [1]. Usually, not all the imported animals are immediately slaughtered, but are kept for some time, in feedlots or grazing grounds, with indigenous breeds. Many parasitic infections, such as hydatidosis [1-4], fascioliasis [5-7], schistosomiasis [8], onchocerciasis [9], coenurosis [10,11], myiasis [12-15], trypanosomiasis [16,17], dicrocoeliasis [18, 19], sarcocystiasis [20-22], cysticercosis ovis [23], toxoplasmosis [24-26], various ecto-parasites [27-29] and neurofilariasis [30] were previously recorded in imported animals in Saudi Arabia, often at higher prevalence rates than indigenous breeds. Thus it is, thus, likely that the exchange of these parasites, between imported and indigenous livestock, is contributing towards the spread

of animal parasitism as well as the incidence of parasitic Zoonoses in the country. The objective of the present study was to compare the prevalence rates of some parasites seen among imported/versus indigenous livestock slaughtered in Taif abattoir.

MATERIALS AND METHODS

During the period, September 2004-February 2007, 2470 imported sheep (1400 from Australia, 419 from Turkey, 385 from Somalia, 179 from Rumania and 87 from Sudan), 142 imported cattle (30 from Hungary, 30 from Rumania, 30 from Bulgaria and 52 from United States of America), 5 imported camels (from Sudan) and 4050 indigenous sheep (2050 Najdi and 2000 Harri) were examined at Taif Abattoir. The liver, lungs and spleen of all animals were examined for hydatid cysts. The livers were also examined for fascioliasis, while the heart and skeletal muscles were examined for cysticercosis. In camels, the nuchal ligaments and subcutaneous tissues of the neck and shoulder regions were examined for *Onchocerca fasciata* while nasopharyngeal cavities were examined for myiasis.

Blood smears from all animals, stained with Giemsa, were examined for blood parasites. The mesenteries of all animals were examined for *Schistosoma* spp. Gastro-intestinal helminths were not looked for in the present study.

RESULTS

The results are shown in figs. 1, 2 and 3 for hydatidosis, fascioliasis and cysticercosis, respectively. As shown in fig. 1, the prevalence of hydatidosis was significantly greater in Turkish sheep (7.15%; $p < 0.01$) compared to Sudanese (3.56%) and Australian (2.8%) sheep. None of the other imported sheep or cattle was infected with hydatidosis. Camels were also free from infection although this was probably due to the small number of animals examined.

Fascioliasis (Fig. 2) occurred at a significantly ($P < 0.01$) higher rate of 15.75% in Turkish compared to 8.04% in Sudanese sheep; it also occurred at rates of 4.22% in imported cattle, 1.8% in Somali sheep, 1.11% in Rumanian sheep and 0.28% in Australian sheep.

Cysticercosis (Fig. 3) was recorded, in the present study, at almost similar rates in Turkish (1.62%) and Sudanese sheep (1.14%) but at a low rate (0.21%) in Australian sheep. None of the other imported or indigenous livestock had cysticercosis.

The only myiasis infection recorded in this study was naso-pharyngeal myiasis caused by *Cephalopina titillator*. Three of the five Sudanese camels examined were infected.

Examination of blood smears showed *Theilaria ovis* in twenty indigenous sheep (Harri breed). No other blood parasites were observed during the present survey.

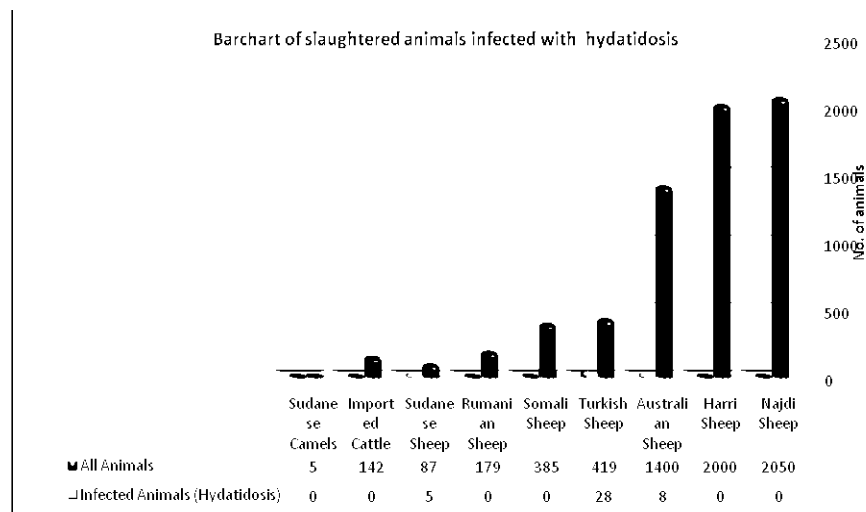


Fig. 1: Prevalence of hydatidosis in slaughtered animals in Taif abattoir.

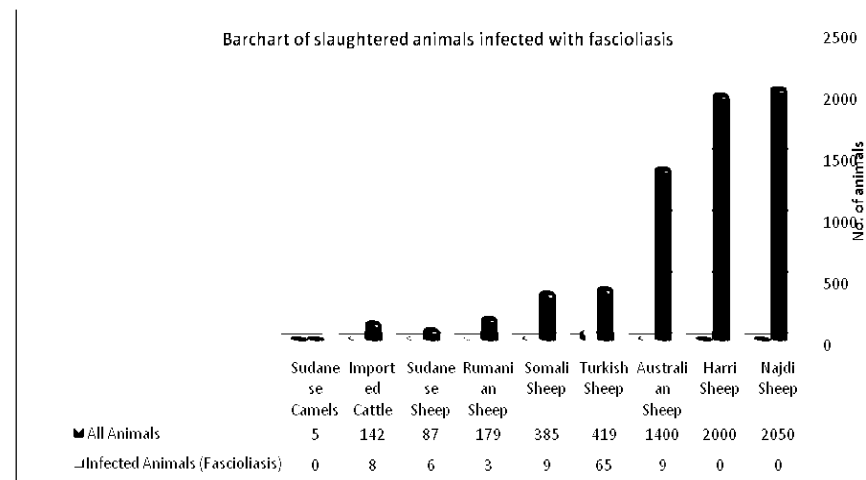


Fig. 2: Prevalence of fascioliasis is slaughtered animals in Taif abattoir.

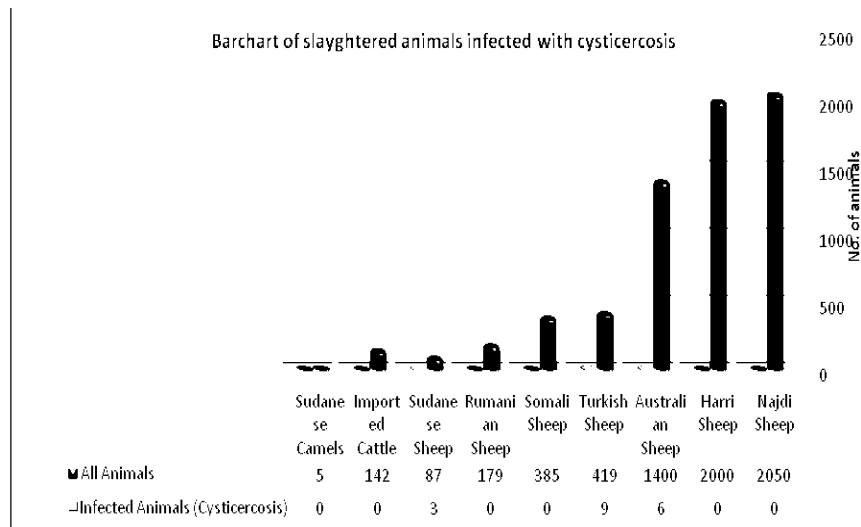


Fig. 3: Prevalence of cysticercosis is slaughtered animals in Taif abattoir.

DISCUSSION

The high prevalence of hydatidosis in Turkish and Sudanese sheep was alarming. Although in the present study, no indigenous sheep were found infected, higher prevalence rates of hydatidosis were recorded in indigenous sheep in Bureida and in some parts of the Eastern Province, than in imported sheep. In Al-Hasa area, the prevalence of *Echinococcus granulosus* in stray dogs was around 15.0% and a massive infection (500,000 worms) was observed in one case [31]. In Jeddah, on the other hand, examination of 32 stray dogs failed to reveal infection with *E. granulosus*. However, the prevalence of hydatidosis in livestock slaughtered in Jeddah area, as shown in the present study, could result in the spread of this zoonotic infection to local stray dogs. Consequently, human and animal infection with the intermediate stage (hydatid cyst) may arise. Already, human hydatidosis has been recorded in various other parts of the Kingdom [31-33]. In other parts of Saudi Arabia, cysticercosis was also not reported in indigenous sheep but bovine cysticercosis was found in both imported and indigenous cattle with higher prevalence in the former [4, 5]. In a work on cystic echinococcosis in Three areas in Saudi Arabia in camels, cattle, sheep and goats the prevalence of infection was 32.85, 8.28, 12.61 and 6.56% in camels, cattle, sheep and goats respectively [4]. These results showed higher than the present findings. It has been reported that three species of trematodes, five species of cestodes, one species of nematodes and four arthropods in livestock in Asir, Saudi Arabia. The same work also reported *Dicrocoelium dendriticum* in imported sheep and

Paramphistomum cervi in indigenous cattle in Saudi Arabia for the first time. The present work did not report these species in Taif. The presence of *Toxoplasma gondii*, *Isospora felis*, *Isospora rivolta*, *I. felis*, *Isospora canis*, *Hammondia heydorni* and *Sarcocystis cameli* *S. cameli* has been reported in camels in Saudi Arabia [25]. The present work reported only the presence of *Trypanosoma* sp. in camels. This may be due to the number of camels was very small (5).

The prevalence figures of the present work are in general accord with those found in imported livestock elsewhere in the country [1-23]. The present study failed to reveal fascioliasis among indigenous livestock slaughtered in Taif, although prevalence rates of 0.36-0.50% were recorded in indigenous sheep in Bureida [2]. Moreover, *Limnaea natalensis*, the snail intermediate host of *Fasciola gigantica* was found in many regions in Saudi Arabia [34], while *L. auricularia* (snail intermediate host of *F. hepatica*) was recorded in imported *Elodea* in green houses in Jeddah [10]. Schistosomiasis was not recorded in the present study in any of the animals examined.

High prevalence rates of this form of camel myiasis were previously reported [13-15] in imported as well as indigenous camels, with higher prevalence in the former. The same parasite was reported in indigenous sheep in the Eastern Region of Saudi Arabia [12]. The prevalence of blood parasites among cattle has been reported at the central area of Saudi Arabia. The presence of *Theileria annulata* and *Anaplasma margin* [16] has been reported in goats in Qassim, Saudi Arabia. In the present work *Trypanosoma* sp. and *Theileria* sp. were reported.

An outbreak of cerebrospinal microfilariosis has been reported [30], The present work did not report any filarial parasites in any of the blood samples of the slaughtered animals.

During a 12-month period, El-Bihari and Kawasmeh [35] examined abomasa and intestines of 520 camels as well as faecal samples from 960 camels in the Eastern Region of Saudi Arabia for gastro-intestinal parasites. The common parasites recorded were *Haemonchus longistipes*, *H. contortus*, *Trichostrongylus probolurus*, *Trichos-trongylus* spp., *Camelostrongylus mentulatus*, *Parabronema skrjabini*, *Nematodirus* spp. and *Trichuris* sp.. Almost 91% of all camels examined had trichostronglid type eggs in their faeces. The number of camels examined in the present work did not show any of these parasites, may be because the intestinal contents of the slaughtered camels were not examined. Hussein and Hussein [34] recorded *H. longistipes* in Najdi camels slaughtered at Riyadh with more prevalent infection in old camels.

This study in general revealed higher prevalence of some parasites among imported compared to indigenous food animals in Taif area. This situation also applies to many viral and bacterial diseases of livestock in the Kingdom. All imported livestock should therefore, be quarantined, upon arrival, for general inspection, drenching, spraying and medication. Moreover, they should be segregated during fattening or grazing from indigenous livestock. Slaughtering livestock outside abattoirs without veterinary supervision should also be avoided.

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