SOME PARASITIC FLUKES INFECTING FARM ANIMALS IN AL-SANTA CENTER, GHARBIA GOVERNORATE, EGYPT

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Abstract

A total of 213 farm animals in the vicinity of Al-Santa Center (73 cattle, 90 buffaloes and 50 sheep) were coprologic examined for natural infection with trematod-parasites. The results showed that cattle were infected with Fasciola sp (21.8%) and Paramphistomum sp. (7.3%), buffaloes were infected with Fasciola sp. (17.7%) and Paramphistomum sp. (10%), while sheep were infected with Fasciola sp. (30%), D. dendriticum (5%) and Paramphistomum sp. (4%). The three animal species were treated for paramphistomiasis with a total dose of 1800, 6000 and 7500 mgm of Oleo-resin solution of Commiphora molmol (dose of 6 ml of 10gm% equal to 2 Mirazid®). The cure was 100% in sheep, 80% in cattle and 44.4% in buffaloes. High dose for both cattle and buffaloes to reach 100% cure rate was not tried.

Introduction

No doubt, most of the farm animals, particularly in animals rearing countries are infected mainly with Fasciola species (Mas-Coma and Bargues, 1997. Meanwhile, Paramphitomiasis is a disease of prime economic and Veterinary Health problem. Paramphistomes belong to suborder Paramphistomata, family Paramphistomatidae (=Amphistpomidae). The common genera are Paramphistomum, Homalogaster, Gastrodiscus, Watsonius, and Gi-
**gantocotyle.** The anterior end of these flukes possesses a mouth without sucker. The acetabulum is located at the posterior end. The body is often covered with papillae but is not like the typical-leaf like shape of other flukes. It is rounded or sometimes, looks more like a gourd or a pear with a hole at the top. Paramphistomes may infect sheep, goats, cattle and water buffaloes throughout the world (Noble and Nobles, 1982). Light infections are usually with mild effect, but heavy infections with the immature stages in the small intestine cause acute gastro-enteritis with high morbidity and mortality rates (Horak, 1971).

This study aimed at the detection of trematodes infecting farm animals in El-Santa Center, Gharbia Governorate, by Kato-thick smear examined focusing on Paramphitomes parasites and trials of treatment.

**Materials and Methods**

A total of 213 stool samples of different live farm animals were collected in labeled plastic boxes and transported immediately to Veterinary-Medical Unit of Al-Santa Center. A sufficient amount of stool was homogenized with 10% formalin. The mixture was strained through a funnel with a sterile gauze into an assay tube. The mixture was allowed to stand for 2 hours for sedimentation. Few drops from the base of the tube were taken by a Pasteur pipette, and put on a clean slide, covered and microscopically examined. The method was essentially the same as given by Cheruiyot and Jordan (1990) and modified by Mas-Coma et al. (1997).

Trematod-positive animals were treated with Oleo-resin solution of Commiphora molmol (dose of 6 ml of 10gm% equal to 2 Mirazid®, for sheep as two capsules (600 mg) on an empty stomach an hour before breakfast for three consecutive days. For buffalos and cattle a dose of 5 capsules (1500 mg) on an empty stomach an hour before breakfast for three to five consecutive days was given. The cure rate was achieved by stool examination every other day during the course of the treatment and as follow-up every two weeks for three months.

**Results**

The results are shown in table 1 and 2.
Table 1: Tremades infected the farm animals in Al-Santa Center.

<table>
<thead>
<tr>
<th>Animal</th>
<th>No.</th>
<th>Fasciola sp.</th>
<th>Dicrocoelium dendriticum</th>
<th>Paramphistomum sp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>73</td>
<td>14</td>
<td>21.8</td>
<td>5</td>
</tr>
<tr>
<td>Buffaloes</td>
<td>90</td>
<td>16</td>
<td>17.7</td>
<td>9</td>
</tr>
<tr>
<td>Sheep</td>
<td>50</td>
<td>15</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>total</td>
<td>213</td>
<td>45</td>
<td>5</td>
<td>16</td>
</tr>
</tbody>
</table>

Table 2: Treatment of Paramphistomum sp. infected animals with Mirazid®.

<table>
<thead>
<tr>
<th>Animal</th>
<th>No. treated</th>
<th>dose</th>
<th>Days</th>
<th>Total dose</th>
<th>Cure</th>
<th>Cure %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheep</td>
<td>2</td>
<td>600mgm</td>
<td>3</td>
<td>1800</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>Cattle</td>
<td>5</td>
<td>1500mgm</td>
<td>4</td>
<td>6000</td>
<td>4</td>
<td>80</td>
</tr>
<tr>
<td>Buffalos</td>
<td>9</td>
<td>1500mgm</td>
<td>5</td>
<td>7500</td>
<td>4</td>
<td>44.4</td>
</tr>
</tbody>
</table>

Discussion

In the present study, the three trematod parasites detected by stool examination were Fasciola sp. Dicrocoelium dendriticum and Paramphistomum sp. In cattle the rate of infection was 14 (21.8%), zero% and 5 (7.3%) respectively. In buffaloes the rate of infection was 16 (17.7%), zero% and 9 (10%) respectively. In sheep the rate of infection was 15 (30%), 5(5%) and 2 (4%) respectively. So, sheep was infected with the three parasites, but with the least number of Paramphistomum sp. Both cattle and buffaloes were not infected with D. dendriticum, but buffaloes were more infected (10%) with Paramphistomum sp. than cattle (7.3%).

In Egypt, fascioliasishave been well encountered in man and animals as a zoonotic parasite (Haseeb et al., 2002). D. dendriticum has been reported before in man and animals in North Sinai Governorate (Massoud et al., 2003). Paramphistomum sp., P. microbothrium, Cotylophorus cotylophorum and C. gregarious have been reported among slaughtered cattle and buffaloes by El-Seify et al. (1999) in Kafr El-Sheik Governorate in the rates of 35.9%, 9.4% and 54.7% respectively. The total infection rate was 24.7% in cattle and 17.4% in buffaloes. However, in the present study the infection rates was relatively less than that reported in Kafr El-Sheikh.
As to treatment of paramphitomiasis, infected sheep (100%) and cattle (80%) recovered with total doses of 1800 and 6000 mgm respectively. On the other hand, only 4 buffaloes out of 9 (44.4%) recovered with a total dose of 7500 mgm. A dose higher than that was not tried. El-Sefy et al. (1999) reported that the most effective drug was Oxyclonanide (Zanil) which induced complete disappearance of the parasite egg in the faecal samples of treated animals. They added that Albendazole and Nitobi-nine induced moderate reduction in the faecal egg count and that Niclosamide was totally non-effective against adult paramphistomes.

In Egypt, Mirazid® was safely and successfully used in the treatment of human fascioliasis (Abo-Madyan et al., 2004) and edible animals' fascioliasis (Haridy et al., 2003, Massoud et al., 2003, Morsy et al., 2005). Massoud et al. (2003) successfully treated two dicrocoeliasis dendriticum humans one with Prazi-quantel (25mg/kg 3 times daily after meals, for four successive days) and second with Mirazid® (2 capsules of 300 mg each, daily an hr before breakfast, for six successive days) as indicated clinically and parasitologically. One imported sheep and two locally bred goats naturally infected with D. dendriticum were successfully treated with Oleo-resin solution (dose of 6 ml of 10gm% equal to 2 Mirazid®, capsules before break-fast) orally once daily for four successive days as indicated by stool examination and macroscopic examination of the slaughtered animals. Besides in Saudi Arabia, Commiphora molmol was successfully and safely used in treatment of dicrocoeliasis dendriticum in humans and sheep by Al-Mathal and Fouad (2004). Besides, Abo-Zinadah (2005) reported successful treatment of two imported fascioliasis infected sheep with Commiphora molmol. The infection and the cure rate were achieved by ELISA-Fhes and microscopically before slaughtering and after treatment macroscopic after sheep slaughtering. The encouragement to use the Macca-Mur was based on two facts. It is a wild medicinal wild plant, C. molmol (Family: Burseraceae, Order: Rutales) known in Saudi Arabia as Myrrh, Gum, Myrrh/Myrrha (Armoush and El-Omary, 2003). Similar results of the high cure rate of Mirazid® on human fascioliasis were reported by El-Go-hary et al. (1999); Motawea et al. (2001); Massoud et al. (2001);
References


