ROLE OF RODENTS AS A RESERVOIR OF SOME ENTERIC PARASITES
(With One Table)

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(Received at 31/5/1990)

SUMMARY

Hundred thirty rats of different species (70 Rattus rattus, 36 Rattus norvegicus and 24 Arvicanthus neloticus) were trapped from different localities at Behera and Alexandria governorates and examined for the presence of some enteric parasites.

Hymenolepis diminuta, Hymenolepis nana, Entamoeba histolytica, Giarda Lambila cyst and Cryptosporidium oocyst were detected at a rate of 15.38, 13.84, 3.1, 5.38 and 4.6% respectively.

The public health important of each parasite for both man and animal was discussed.

INTRODUCTION

Rodents are widely distributed throughout the world and account for about 40% of the mammals living of the present time (WHO, 1972). In the last years, rodents population has markedly increased in number in Egypt (MORSY et al., 1980).

Excluding the role of rodents in the different economic losses they produce, they are responsible for transmitting bacterial, viral, rickettsial and parasitic diseases. The world wide distribution and public health importance of parasitic diseases infesting rodents have attracted the attention of several investigations (CHANDLER and READ, 1961; LEE and LEE, 1966; ARAFA, 1965; SCHAFICA et al., 1981; TOSSON et al., 1981; EL-MASRY et al., 1985 and EL-SOKKARY & HEIKHEL, 1986).

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The purpose of the present work is to illustrate the role of rodents as reservoir of some enteric parasites.

MATERIAL and METHODS

Hundred thirty rodents were trapped alive from Alexandria and Behera governorates. The captured rodents were identified according to KAMEL (1958) and anaesthetised by chloroform vapour. Each rodent was dissected and its intestine extracted and split open in a wide petri-dish full of saline. The contents were thoroughly examined for adult Hymenolepis spp. Smears from different parts of the intestine were taken, some of them were mixed with saline and iodine solution for direct microscopic examinations while others were dried in air and fixed with methanol then stained by modified Ziehl-Neelson technique (HENRIKSEN and POHLELNZ, 1981) for Cryptosporidium oocysts. Other smears were stained with Heidenhims iron haematoxylin for Entamoeba and Giardia stages.

RESULTS

Presented in Table (1).

DISCUSSION

The results presented in Tale (1) revealed that the total incidence of Hymenolepis diminuta eggs in the examined rodents were 15.38%. These results are higher than those obtained by SCHAFICA et al. (1981) and EL-MASRY et al. (1985) however, lower than those obtained by ABOUSHADDY et al. (1983) and EL-SOKKARY and HEIKEL (1986) and nearly similar to the results obtained by KAOUO et al. (1983).

These variations may be attributed to the climatic conditions which including temperature and relative humidity prevailing in such areas. Moreover, Hymenolepis nana eggs were detected at a rate of 13.84% in the examined rodents (Table 1) which is nearly similar to the results obtained by EL-MASRY et al. (1985) and lower than the results obtained by ARAFA (1968), KAOUO et al. (1983) and EL-SOKKARY & HEIKEL (1986) however, MONIB (1980) detected Hymenolepis nana in the examined rodents without mentioning their incidence percentage. Regarding the public heath importance of both Hymenolepis diminuta and Hymenolepis nana, RIELY (1920) and EL-MASRY (1985) detected both types in children and considered, rodents faeces as a main source of human infestation.

Entamoeba histolytica cysts were detected at an incidence of 3.1% (Table 1) in the examined rodents which is higher than those obtained by EL-MASRY et al. (1985) and lower than that obtained by TOSSON et al. (1981) however, OMAR (1976) could not detected Entamoeba histolytica in the examined rats. Concerning the public heath importance, NEAL (1950) stated that rodents play a prominent role in the transmission of amoebic dysentery to man. On the other hand, WHO (1979) reported that

In the examined rodents, Table (1) shows the number and types of enteric parasites.

<table>
<thead>
<tr>
<th>Type of Parasites</th>
<th>H. duodenale</th>
<th>G. lamblia</th>
<th>Cryptosporidium</th>
<th>Cryptosporidium</th>
<th>( \text{H. duodenale} \times \text{Cryptosporidium} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rodent</td>
<td>4.6</td>
<td>5.7</td>
<td>4.9</td>
<td>4.2</td>
<td>2.3</td>
</tr>
<tr>
<td>Total</td>
<td>13.9</td>
<td>14.5</td>
<td>14.6</td>
<td>14.3</td>
<td>15.9</td>
</tr>
</tbody>
</table>
the infestation with *Entamamoeba histolytica* may be hazard for persons dealing with animals and rodents. On the other hand, *Entamoeba histolytica* cysts were detected in the examined *Rattus rattus* and *Rattus norvegicus* at an incidence of 4.3 and 2.8%, respectively. However, these cysts could not be detected in the examined *Arvicanthus neloticus* (Table 1).

Giardia lambila cyst was present in the examined *Rattus rattus norvegicus* only at an incidence of 5.6% which is nearly similar to those reported by EL-MASRY et al. (1985).

Cryptosporidium oocysts were observed in the stained faecal smears of both *Rattus rattus* and *Rattus rattus norvegicus* at a rate of 5.7% and 5.6%, respectively (Table 1). The specificity of the mammalian species of cryptosporidium is not known (Grant et al., 1980). The possibility of cross infestation between rodents and man with cryptosporidium need further investigations.

Generally, the presence of rodents constitute a complex economic and public health problems. So, rat proofing measures in human being and animal buildings and the maintenance of sanitary measure together with the mechanical, chemical and biological destruction of rodents are essential.

**REFERENCES**


RODENTS & ENTERIC PARASITES


