Abstract

Helminth fauna of wild rats (*Rattus* sp.) in Jamaica, with special emphasis on infections with *Angiostrongylus cantonensis* (Nematoda: Metastrongylidae)

Cecelia Alberga Waugh

Angiostrongylus cantonensis, as well as, some gastrointestinal helminth parasites of rats are of major public health significance in the tropics but little or nothing was known about their existence and distribution in wild rats in Jamaica. The main aim of this study was to investigate the population distribution of *A. cantonensis* and gastrointestinal helminths of feral rats across the island. Additionally, the population distribution of *A. cantonensis* in terrestrial molluscs was investigated, as well as, the mode of transmission of the parasite to humans in Jamaica.

A total of four hundred and thirty seven (437) wild rats including 297 *R. rattus* and 140 *R. norvegicus* were collected. Parasitic helminths (11 genera) were found in 179 (47%) of the rats. The overall prevalence of *A. cantonensis* from the cardiopulmonary system of the rats was 32% (n = 437). The risk factors for infection of wild rats with *A. cantonensis* in Jamaica were *R. rattus* and the northeast Regional Health Authority. The prevalence of gastrointestinal parasites including seven species of nematodes, two species of cestodes and one species of acanthocephalan was 29.7 % (n=130). The enteric nematodes were identified as

Syphacia obvelata (0.2%), *Trichuris* sp. (0.2%), *Rictularia* sp. (0.7%), *Strongyloides ratti* (1.1%), *Protospirura muricola* (4.3%) and *Nippostrongylus brasiliensis* (14.2%). The cestode *Raillietina* sp. (0.2%) was also found in one rat. The two most important zoonotic parasites were *Moniliformis moniliformis* (11.2%) and *Hymenolepis diminuta* (3.8%).

Seven hundred and seventy seven (777) terrestrial molluscs comprising 12 species snails and slugs were examined for *A. cantonensis* and 12.5% (n=97) were infected. *Thelidomus aspera*, *Pleurodonte* sp., *Sagda* sp., *Poteria* sp. and a Veronicellid slug were the five species positive for *A. cantonensis* larvae. Limited numbers of *A. cantonensis* larvae were shed in the slime of infected *T. aspera.* Preliminary knowledge , attitude and practice (KAP) studies have shown that the food consumption practices of Jamaicans put them of risk of contracting the food-borne disease caused by *Angiostrongylus*.

This present approach adds new information to previous studies done in the Caribbean and presents the first record of enteric helminths and *A. cantonensis* from *Rattus* sp. and terrestrial molluscs in Jamaica. It strengthens the case for further study of the parasites of wild mammals and confirms the need to maintain effective rodent control in Jamaica.

Keywords: Cecelia Alberga Waugh, *Angiostrongylus*, gastrointestinal, helminth, zoonotic, mollusc and Jamaica