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Detection of *Parastrongylus cantonensis* (Rat Lungworm) in *Rattus* spp. from Three Major Public Markets in Davao City

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Abstract

Neuroangiostrongyliasis, caused by the rat lungworm *Parastrongylus cantonensis*, is an emerging tropical disease. Research on *P. cantonensis* in rats has not yet been conducted in Davao City. This study aims to determine its incidence in *Rattus* spp. from three major public markets, establishing baseline data for potential health risks. The study employed a quantitative descriptive cross-sectional research design wherein rats were collected from three major public markets in Davao City using mechanical traps, then sedated and euthanized prior to dissection. Digested lung tissue was then centrifuged, filtered, and examined under a microscope to identify the presence of *P. cantonensis*. In a study conducted across three major public markets in Davao City, 66 rats belonging to the genus *Rattus* were identified, specifically *R. norvegicus*, *R. tanezumi*, and *R. rattus*. Among them, some tested positive for *P. cantonensis*, indicating an overall incidence rate of 4.54%. In urban areas, particularly markets, *Rattus* species play a crucial role in the persistence and spread of this significant zoonotic parasite. The urban environment provides abundant food sources, allowing rats to thrive and increasing their interactions with intermediate hosts like snails or slugs. This situation heightens the risk of zoonotic transmission, especially for those consuming raw or undercooked intermediate hosts. Given the rats' importance as reservoirs of *P. cantonensis*, public health measures emphasizing proper food safety and hygiene are essential to reduce the risk. These interventions can significantly lower transmission chances and protect human health. It is recommended that community education programs that address the risks and prevention strategies for *P. cantonensis* should be done as they are crucial for raising awareness and promoting public health; to strictly implement of the existing program, with a focus on comprehensive rodent control measures and improved sanitation practices, particularly among vendors, to minimize public health risks; and for researchers to utilize advanced molecular diagnostic procedures with optimized protocols in parasite identification to enhance the reliability, accuracy, and precision of detecting *P. cantonensis* infections.