

FIRST FINDINGS OF MYCOBACTERIA IN AFRICAN RODENTS AND INSECTIVORES USING STRATIFIED POOL SCREENING

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With the rising number of HIV/AIDS patients in developing countries, the control of mycobacterial infections is of growing importance. Previous studies revealed rodents and insectivores as carriers of mycobacteria. However, it is not yet clear how widespread mycobacterial infection is in these animals and what their role is in spreading the disease. Therefore the prevalence of mycobacteria in rodents and insectivores was studied in and around Morogoro, Tanzania.

Live rodents were trapped, with three types of live traps, in three habitats. Pieces of organs were pooled per habitat, species and organ type (stratified pooling); these pools were examined for the presence of mycobacteria by PCR, microscopy and culture methods. The mycobacterial isolates were identified using phenotypic techniques and sequencing.

In total, 708 small mammals were collected of which 31 were shrews. By pool prevalence estimation 2.65% of the animals were carriers of mycobacteria, with a higher prevalence in the urban areas and in *Cricetomys gambianus* and the insectivore *Crocidura hirta*. Nontuberculous mycobacteria (*Mycobacterium chimaera*, *M. intracellulare*, *M. arupense*, *M. parascrofulaceum* and *Mycobacterium* spp.) were isolated from *C. gambianus*, *Mastomys natalensis* and *C. hirta*.

This study is the first to report findings of mycobacteria in rodents and insectivores in Africa and the first in mycobacterial ecology to estimate the prevalence of mycobacterial infections after stratified pool screening. The fact that small mammals in urban areas carry more mycobacteria than those in the fields and that potentially pathogenic mycobacteria were isolated, points out a risk for other animals and humans, especially HIV/AIDS patients.