

INTRODUCTION AND PURPOSE

Parasitic diseases are a major cause of morbidity in developing countries where sanitary conditions are deficient. *Giardia duodenalis* is considered one of the most common causes of protozoal diarrhea in both humans and animals worldwide, being the responsible for 280 million infections annually in Asia, Africa and Latin America. According to host species, morphology and molecular differences, there are eight different *G. duodenalis* assemblages, of which assemblages A and B are the most common in humans. Cape Verde is a developing country with fecal contamination problems due to poor infrastructure in the islands. Some cases of parasitoses have been studied and identified in this Archipelago, most of them on Santiago Island, being the giardiasis common in the population. At present, there is no information about the occurrence of *Giardia* in rodents in Cape Verde. Therefore, the present study aimed to obtain the first data on the prevalence and distribution of giardiasis in rodents from the Archipelago, and to identify the potential zoonotic risk that it implies.

RESULTS

The overall prevalence of giardiasis was 11%, being the infected rodents in 5 of the 7 areas studied, highlighting the wide distribution of *Giardia* sp. in the island. The presence of *Giardia* in the two rodent species found on the island of Santiago is confirmed. Significant differences in the obtained prevalence between South and Central areas ($\chi^2= 8.97$; $p<0.05$) were found. While, there were no differences when comparing the presence of *Giardia* between hosts, age and the sex. A total of six sequences for the TPI gene were obtained. The nucleotide sequences showed high homology with *G. duodenalis* genotype B.

MATERIAL AND METHODS

The study was carried out on Santiago Island (Cape Verde), located in the Atlantic Ocean about 455 km off the west coast of Senegal. Seven different areas spread over five different locations of the island were sampled (Figure 1). A total of 122 wild rodents (62 *Mus musculus domesticus* and 60 *Rattus rattus*) were captured and euthanased. Fecal samples were obtained, and cysts were concentrated using a modification of the Richie's formaldehyde-ether method, stained with iodine solution and examined by light microscopy. The DNA was extracted from *Giardia*-positive samples using the Fast DNA® Spin kit for Soil (Qbiogene). *Giardia* isolates were genotyped by the amplification of a fragment of the triose phosphate isomerase (TPI) gene, and sequencing. A BLAST search was carried out, and a phylogenetic analysis was performed to assess the genetic diversity among *Giardia* isolates detected in this study. Chi-square test was used to evaluate parasitological results.



Figure 1. Sampling areas in Santiago (Cape Verde)

CONCLUSIONS

1. These are the first data about *Giardia* in rodents in Cape Verde.
2. The results of our study highlight the role of *R. rattus* and *M. m. domesticus* as reservoirs of *Giardia* species in Santiago.
3. This finding is of relevance from the public health point of view, considering the health risk that implies the presence of a zoonotic assemblage in rodents from peridomestic areas in Santiago.