Absence of Anti-Rabies Antibodies in Wild Animals in the Central, Southeast, and Northeast Regions of Brazil

Matheus Ramalho Pereira[1]; Joares Adenilson May Junior[2,3]; Juliana Amorim Conselheiro[4]; Gisely Toledo Barone[4]; Adriano Rodrigues Lagos[5]; Felipe Viana Manzano[5]; Fernando Vieira Machado[5]; Ricardo Shoiti Ichikawa[1]; Bruna Letícia Devidé Ribeiro[1]; Camila Michele Appolinário[1]; Jane Megid[1]

[1]Animal Production and Preventive Veterinary Medicine – FMVZ – São Paulo State University (Unesp) - Botucatu, Brazil; [2]Laboratory of Protozoology and Vector Rickettsiosis – Federal University of Rio Grande do Sul (UFRGS); [3]Onçafari Association – Brazil; [4]Laboratory of Zoonosis and Vector-Borne Diseases – Rabies Sector – Surveillance of Zoonosis Division – São Paulo, Brazil; [5]Condition Management Division – OOAMG.F Eletrobras – Brazil.

INTRODUCTION

Rabies is a highly lethal viral zoonotic disease that poses significant public health challenges worldwide. In Brazil, the sylvatic cycle of rabies is particularly critical due to the country's rich biodiversity of wild mammals, which serve as hosts and potential reservoirs for the virus. Effective epidemiological surveillance of these wildlife species is essential for understanding the dynamics of rabies virus circulation in natural environments and for assessing their role in the disease's transmission. This study aimed to conduct a serological evaluation of terrestrial mammals from Brazil's Midwest, Northeast, and Southeast regions by detecting neutralizing antibodies against the rabies virus.

METHODS

The study involved processing serum samples from various terrestrial mammals collected from the Midwest, Northeast, and Southeast regions of Brazil, and submitted to the Fluorescent Antibody Virus Neutralization Test (FAVN)[1] at the São Paulo Zoonosis Control Center.

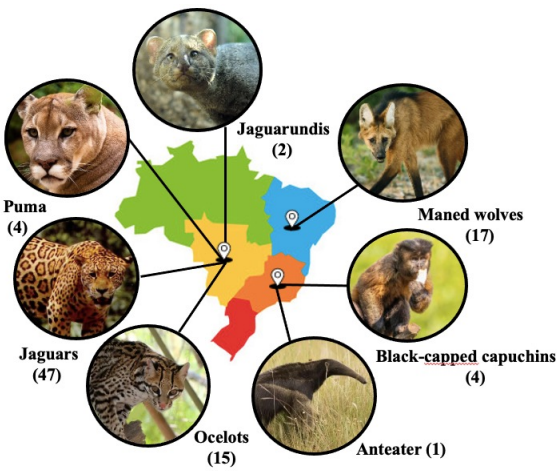

Figure 1: Distribution of sample species in Brazil.

RESULTS

The analysis revealed no detectable neutralizing antibodies against the rabies virus in any of the samples tested.

CONCLUSION

Despite conducting the study in regions where sylvatic rabies is known to occur, the absence of neutralizing antibodies highlights the complexities and uncertainties surrounding the sylvatic rabies cycle in Brazil. Further research is necessary to deepen our understanding of rabies epidemiology in these wildlife populations and to inform effective control strategies.

References: [1] F. Cliquet, M. Aubert, L. Sagné. Development of a fluorescent antibody virus neutralisation test (FAVN test) for the quantitation of rabies-neutralising antibody. Journal of Immunological Methods. Volume 212, Issue 1, 1998. Pages 79-87, ISSN 0022-1759, https://doi.org/10.1016/S0022-1759(97)00212-3.

jane.megid@unesp.br