6th World Congress and Expo on **Applied Microbiology**
&
8th Edition of International Conference on **Antibiotics, Antimicrobials & Resistance**
&
12th International Conference on **Allergy & Immunology**
October 21-22, 2019 Rome, Italy

Rhodesian human African *Trypanosomiasis* (rHAT) in Kafue national park, Zambia

David Squarre[1], **Chihiro Sugimoto**[2], **Boniface Namangala**[1], **Kyoko Hayashida**[2] and **Junya Yamagishi**[2]
[1]National Parks and Wildlife in Zambia, Zambia
[2]Hokkaido University, Japan

Statement of the Problem: The World Health Organization (WHO) describes Human African Trypanosomiasis (HAT) as a neglected tropical disease affecting mostly the poor communities in sub Saharan Africa. The disease is caused by a multi host haemo-flagellate protozoan parasite of genus Trypanosoma and is transmitted by infected tsetse fly (Glosinna spp). The Kafue National Park (KNP), located in Central Zambia was considered devoid of the parasite due to lack of compelling data on presence, abundance and diversity of the circulating parasites especially in wildlife populations and the risk to public health has not been elucidated. The lack of true information on trypanosome diversity and its expression in wildlife reservoir population renders the current control of the disease sub optimal.

Methodology & Theoretical Orientation: Case studies of a 46 years old male resident of KNP and cross sectional study to screen wildlife reservoir of the KNP for rHAT was employed. Blood samples from both affected patients and wildlife reservoirs were assessed using a combination of molecular methods such as LAMP, ITS-PCR, SRA-PCR and the results were validated by Mini-Ion Sequencing.

Findings: The study demonstrated the presence of rHAT in human and wildlife populations of KNP. Further characterization of the parasites reveal the diversity of trypanosomes in KNP.

Conclusion & Significance: The outcomes of this study reaffirms the presence of rHAT in KNP and further declares that KNP is a genuine neglected and re-emerging foci of rHAT. The first step to control this neglected disease is the recognition of its presence and its perceived risk. Based on results contained here, it is recommended that the already fixed and accessible health facility be strengthened with capacity to diagnose and treat rHAT within and around the KNP. Based on this data the risk of rHAT infection to the public can be correctly estimated and appropriate intervention instituted.

Recent Publications

1. Masahiro Kajihara, Bernard M. Hang'ombe, Katendi Changula, Hayato Harima, Mao Isono, Kosuke Okuya, Reiko Yoshida, Akina Mori-Kajihara, Yoshiki Eto, Yasuko Orba, Hirohito Ogawa, Yongjin Qiu, Hirofumi Sawa, Edgar Simulundu, Daniel Mwizabi, Musso Munyeme, David Squarre, Victor Mukonka, Aaron S Mweene, Ayato Takada: Marburgvirus in Egyptian Fruit Bats, Zambia. Emerging Infectious Diseases 05/2019; 25(8)., DOI:10.3201/eid2508.190268

2. David Squarre, Ilunga Kabongo, Musso Munyeme, Chisoni Mumba, Wizaso Mwasinga, Lottie Hachaambwa, Chihiro Sugimoto, Boniface Namangala: Human African Trypanosomiasis in the Kafue National Park, Zambia. PLoS Neglected Tropical Diseases 05/2016; 10(5):e0004567., DOI:10.1371/journal.pntd.0004567

3. David Squarre, John Yabe, Chisoni Mumba, Maxwel Mwase, Katendi Changula, Wizaso Mwasinga, Musso Munyeme: Toxaemia secondary to pyloric foreign body obstruction in two African lion (Panther leo) cubs.

Asian Pacific Journal of Tropical Biomedicine 08/2015; 5(9)., DOI:10.1016/j.apjtb.2015.07.010

4. M Mwase, C Mumba, D Square, S Kawarai, H Madarame: Cutaneous Squamous Cell Carcinoma presenting as a Wound with Discharging Sinus Tracts in a Wild African Lion (Panthera leo). Journal of comparative pathology 09/2013; 149(4)., DOI:10.1016/j.jcpa.2013.06.004

5. Mudenda B Hang'ombe, James C L Mwansa, Sergio Muwowo, Phillip Mulenga, Muzala Kapina, Eric Musenga, David Squarre, Liywali Mataa, Suzuki Y Thomas, Hirohito Ogawa, Hirofumi Sawa, Hideaki Higashi: Human-animal anthrax outbreak in the Luangwa valley of Zambia in 2011. Tropical Doctor 04/2012; 42(3):136-9., DOI:10.1258/td.2012.110454

Biography

David Squarre is currently the head wildlife veterinarian for the Department of National Parks and Wildlife in Zambia. He previously worked and managed the wildlife veterinary service department at the Zambia Wildlife Authority. He works mostly with free ranging wildlife in National Parks and protected areas in Zambia. He is currently a PhD candidate at Hokkaido University, Japan, focusing on vector bourne zoonotic parasites. He is also persuing his MSc in Conservation Genetics and Wildlife Forensics at the University of Edinburgh, Scotland. He has published more than 15 peer reviewed papers on subjects related to wildlife health and conservation. He has presented his work at several conferences on wildlife health and conservation at the Society for Wildlife Forensics, Scotland (2017), Japan Graduate (JGRID) and society for conservation GIS 2014 (california). He has received several awards including the Hashimoto award, Japanese Society for the Promotion of Science (JSPS) and Society for Conservation GIS (SCGIS).

Notes: