Diagnostics and biomarkers

OC - (8432) - EVALUATION OF AN ANTIBODY-DETECTING POINT-OF-CARE TEST FOR THE DIAGNOSIS OF TAENIA SOLIUM TAENIASIS AND NEUROCYSTICERCOSIS/CYSTICERCOSIS IN AN ENDEMIC AREA

Mubanga, Chishimba (Zambia); Mwape, Kabemba (Zambia); Zulu, Gideon (Zambia); Phiri, Isaac (Zambia); Trevisan, Chiara (Belgium); Dorny, Pierre (Belgium); Gabriel, Sarah (Belgium); Van Damme, Inge (Belgium)

1 - The University of Zambia, School of Veterinary Medicine, Department of Clinical services; 2 - Ministry of Health; 3 - Institute of Tropical Medicine, Antwerp; 4 - University of Ghent

Taenia solium taeniasis/ (neuro) cysticercosis is a neglected parasitic zoonosis with significant economic and public health impacts. Neurocysticercosis is responsible for 30% cases of acquired epilepsy in endemic areas. Diagnosis and case management of neurocysticercosis/taeniasis in resource limited endemic countries is challenging. Reliable, inexpensive and easy to use diagnostic tools with sufficient sensitivity and specificity are currently not available. A new point of care (POC) test based on recombinant rT24H and rES33 proteins developed by the Centre for Disease Control in Atlanta which combines diagnosis of taeniasis and cysticercosis has been developed, however, its performance at community level is not known. The aim of this study is therefore, to evaluate the diagnostic performance of this test in a community setting.

The study site is Mtandaza community, Sinda district, Eastern Province of Zambia. The diagnostic accuracy is being evaluated for taeniasis and (neuro) cysticercosis in 1200 randomly selected participants in a community based study. The performance characteristics (sensitivity and specificity) for neurocysticercosis will be computed by cross-tabulating of POC results with those of the ‘Neurocysticercosis diagnosis’ while a Bayesian approach will be used for cysticercosis and taeniasis to compare the performance of the index test with reference tests (Enzyme-linked Immuno-electrotransfer blot (EITB), B158/B60 Ag-ELISA, Ab-ELISA, Copro-Ag ELISA, PCR).

Preliminary results of 505 POC tests so far conducted show that 0.8% were positive for taeniasis, 9.1% for cysticercosis and, 4.6% were invalid or unclear. Except for Copro-Ag and B158/B60 Ag-ELISA for taeniasis and cysticercosis respectively, reference tests are yet to be conducted.

Results will show the diagnostic value of the POC test and its applicability for use at community level in endemic areas. If successful, implementation of the tool will enable early detection of taeniasis and suspected neurocysticercosis cases and lead to improved patient management and treatment outcomes.