PA-129 CULTIVATION OF TWO IS2404 POSITIVE *MYCOBACTERIUM SPP.* FROM THE ENVIRONMENT OF ASANTE AKIM DISTRICT OF GHANA

Innocent Afeke,[1] Phyllis Addo,[2] Mercy Newman,[3] Lies Durnez,[4] Miriam Eddyani,[4] Nana Ammisah,[2] Mona Abas,[2] Maxwell Quartey,[2] Anthony Ablordey[2]. *[1]UHAS, Ghana; [2]NMIMR, Ghana; [3]University of Ghana Medical School, Ghana; [4]ITM Antwerp, Belgium*

10.1136/bmjgh-2016-000260.156

Background Buruli ulcer (BU) is one of the neglected tropical diseases. *Mycobacterium ulcerans* is the aetiologic agent of Buruli ulcer. Many extensive studies have failed to isolate *M. ulcerans* in pure culture from the environment, even in highly endemic areas of BU. We investigated the role of macro-invertebrates as possible hosts or vectors for *M. ulcerans* by attempting to cultivate *M. ulcerans* from these organisms.

Methods The study was conducted in 5 villages in the Asante Akim District of Ghana for 10 months. Primary detection of *M. ulcerans* was done by real-time PCR targeting insertion sequence IS*2404* coupled with the detection of IS*2606* and Ketone reductase genes for increased sensitivity and specificity. Primary cultures were done using routine bacteriological media for culturing mycobacteria, L-J and special enrichment liquid broth, BACTEC®.

Results The overall rate of detection of IS*2404* in the general macro-invertebrate population was 12.8%. Cluster of CT-values was observed around a mean value of 35.88 and range values of 28.35–38.61. Statistically, there were no significant differences between the various CT-values obtained, $p>0.05$. The difference in ΔCT values (IS*2606*-IS*2404*) for homogenate sample obtained from Naucoridae which was positive for the three targets on *M. ulcerans* genome was estimated to be 1.77. The present study reports the cultivation of two IS*2404* positive *Mycobacteria spp.* from two aquatic macro-invertebrates of the families Belostomidae and Notonectidae both of the order Hemiptera. The isolate from Belostomidae was identified as either *M. ulcerans* or *M. marinum* with 98% identities that from Notonectidae was 98% identical to *M. neoaurum*. The organisms are yet to be passaged through mice footpad and fully characterised.

Conclusions For the first time *M. neoaurum* species was reported to have harboured IS*2404* element. Aquatic Hemiptera are highly suspected to be vectors or hosts for *M. ulcerans* and they may transmit the pathogen to humans through biting.