

OP 50

Burden of leptospirosis in Chronic Kidney Disease of uncertain aetiology (CKDu) patients and non-CKDu healthy individuals within Girandurukotte, Sri Lanka

Fonseka GRA¹, Senarathne P¹, Mallikaarachchi MADKS¹, Sarathkumara YD¹, Muthusinghe BDS², Lokupathirage S³, Nanayakkara N⁴, Gunaratne L⁵, Yoshimatsu K^{2,3}, Koizumi N⁶, Gamage CD^{1*}

¹Department of Microbiology, Faculty of Medicine, University of Peradeniya, Sri Lanka, ²Graduate School of Infectious Diseases, Hokkaido University, Japan, ³Department of Microbiology and Immunology, Faculty of Medicine, Hokkaido University, Japan, ⁴Nephrology and Transplantation Unit, Kandy Teaching hospital, Sri Lanka, ⁵Renal Unit, District Hospital, Girandurukotte, Sri Lanka, ⁶Department of Bacteriology, National Institute of Infectious Diseases, Tokyo, Japan.

Background: Leptospirosis, the most globally prevalent bacterial zoonosis has been gaining attention lately as a risk factor/aetiological agent for CKDu. While the cause of CKDu can be multi-factorial and vary regionally, its' association with leptospirosis is worth investigating.

Objective: To find the seroprevalence of leptospirosis among CKDu patients and non-CKDu individuals in Girandurukotte and to identify the infecting serogroup of leptospirosis among CKDu and non-CKDu individuals residing in Girandurukotte.

Method: Clinically diagnosed CKDu patients were recruited as cases from the Girandurukotte District Hospital, Badulla (n=48). Non-CKDu healthy individuals residing in Girandurukotte with normal serum creatinine levels (0.5-1.2 mg/dL) were recruited as controls (n=92). These serum samples were subjected to Microscopic Agglutination Test (MAT) with a panel consisting of 12 serovars; Autumnalis, Bataviae, Canicola, Grippotyphosa, Hardjo, Hebdomedis, Javanica, Panama, Patoc, Terrasovi, Shermani, and Wolffi. A titre value of $\geq 1:400$ was deemed as positive. The MAT results and demographic data of the subjects were analysed through a univariate analysis using SPSS.

Results: Out of 140 samples, 15 were MAT positive and 3/48 (6.3%) CKDu samples were positive for Hardjo. 12/92 (13.1%) non-CKDu samples were positive for Hardjo (n=11) and Autumnalis. Six samples gave weak reactions at low titre values of $\leq 1:200$ for Autumnalis (n=2), Bataviae (n=1), and Hardjo (n=3) suggesting minor exposure and not infection. A significant association between CKDu and leptospirosis prevalence was not observed.

Conclusion: Although, an association between CKDu and leptospirosis seroprevalence was not observed, these data suggest possible chronic infection as some seropositive samples had titres values as high as $\geq 1:800$ but remained asymptomatic. The predominantly infecting serogroup in Girandurukotte is Hardjo, a cattle/buffalo associated serogroup. Both study groups seemed to be predominantly infected with said serogroup suggesting that the dynamics of leptospirosis transmission need to be monitored urgently in this farming community.

Acknowledgement: Partially funded by University Research Grant (URG/2018/28M) and National Science Foundation of Sri Lanka (RPHS/2016/CKDu/06).