

## Leptospirosis seroprevalence among a cohort of renal patients and healthy individuals of two Districts in Sri Lanka: An interim analysis

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### Introduction

Leptospirosis is a zoonosis capable of causing renal injury. Chronic Kidney Disease (CKD) and CKD of uncertain aetiology (CKDu) are renal diseases with public health significance in Sri Lanka. Untreated asymptomatic leptospirosis could contribute to the development and progression of CKDu as suggested by previous scientific literature. CKDu is known to be widely prevalent among the farming community of Sri Lanka.

The aims of this study were to; (1) find the seroprevalence of leptospirosis among CKDu patients and healthy individuals in Girandurukotte (Badulla District), a CKDu endemic region and Kandy (Kandy District), a CKDu non-endemic region in Sri Lanka and (2) identify risk factors that could lead to leptospirosis among residents in Girandurukotte and Kandy.

### Methods

A cross-sectional study was carried out recruiting clinically diagnosed CKDu patients as cases from the District Hospital, Girandurukotte (n=85) and National Hospital, Kandy (n=50, both CKD/CKDu). Healthy residents with normal serum creatinine levels (0.5-1.2 mg/ dL) were recruited from Girandurukotte (n=234) and Kandy (n=270) as controls.

Seroprevalence of leptospirosis was determined through a direct ELISA assay detecting anti-leptospiral IgG antibodies. Furthermore, descriptive analysis, association of variables and comparison of possible risk factors such as age, gender, farming exposure and rat infestation in residencies were analysed using SPSS software. Relative risk (RR) ratio was calculated using MedCalc online software package.

### Results

A seroprevalence of 19.23% (45/234) and 28.23% (24/85) were observed for leptospirosis among controls and CKDu patients from Girandurukotte while, a seroprevalence of 22.59% (61/270) and 24.00% (12/50) were observed among controls and CKD/CKDu patients from Kandy. The RR was 1.47 (95% CI 0.96 to 2.25,  $p=0.08$ ) and 1.06 (95% CI 0.62 to 1.82,  $p=0.83$ ) for Girandurukotte and Kandy, respectively. None of the study participants reported an illness suggestive of leptospirosis in the past.

### Conclusions

A statistically significant association between asymptomatic leptospirosis and CKDu was not observed in this study. However, since ELISA is only used as a screening test, confirmatory immunological assays such as Western Blotting should be carried out before making a solid conclusion.

**Keywords:** *Leptospirosis, CKDu*

**Funding:** University Research Grant (URG/2018/28M) and National Science Foundation (RPHS/2016/CKDu/06)

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