

## **Risk Factors, Incidents of Acute Kidney Injury and Liver Involvement among Leptospirosis Patients Admitted to the Teaching Hospital, Ratnapura**

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### **Abstract**

Leptospirosis is a global zoonotic infection and severity is highly variable. Renal and hepatic complications are major concerns of the disease. Therefore, the study was aimed to identify the potential risk factors and evaluate the progression of renal injury and liver involvement among leptospirosis patients admitted to the Teaching Hospital, Ratnapura. A prospective cross-sectional study was conducted on 103 clinically suspected leptospirosis patients above 15 years of age. An interviewer-administered questionnaire was used to collect socio-demographic, geographical, behavioral, occupational, and agricultural information. Clinical information of patients was collected from medical records and biochemical and hematological investigations were extracted from the laboratory reports. The majority of patients were males (94.2%) with a mean age of  $45 \pm 15$  years. The highest percentage of the population was engaged in mining (31.8%) and farming (30.7%). Most patients had open wounds, cuts, or bruises on the skin (66%), and had bathed or waded in flood water or contaminated fresh water (57.4%). Acute kidney Injury (AKI) was developed among 26.2% of the population (KDIGO criteria). A significant increase in creatinine ( $p < 0.001$ ), CRP level ( $p < 0.001$ ), differential count of neutrophils ( $p < 0.001$ ), and a significant decrease in the differential count of lymphocytes ( $p < 0.001$ ) and platelet count ( $p < 0.01$ ) was observed in AKI patients when compared with non-AKI patients. Liver involvement was observed in 28.16% of the study population (National Guideline of Leptospirosis). A significant increase in AST ( $p < 0.001$ ), ALT ( $p < 0.001$ ), and decreased platelet count ( $p < 0.05$ ) was observed between patients with and without liver involvement. In conclusion, involvement in mining and farming activities were identified as major occupational risk factors for the disease. Approximately one-third of the patient's population had AKI and liver involvement.

**Keywords:** *AKI, Leptospirosis, Liver involvement, Risk factors*