

## CORRELATES OF HEAT STRESS IN CKD-AFFECTED REGIONS OF SRI LANKA

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The potential associations between kidney function parameters derived from urinalysis and symptoms of heat stress among Sri Lanka agricultural workers were examined. Participants in four villages (n=261) covering high- and low-prevalence chronic kidney disease (CKD) areas completed a questionnaire to elicit symptoms of heat stress and also provided urine samples. Among 216 agricultural workers without diabetes or kidney disease, the mean age of the sample was 46.6 and 37% were males. Among the heat stress and dehydration symptoms, headache and dry mouth were reported 3+ days/week by over 30% of the population, and exhaustion, dizziness and heart racing by over 20%. Participants in the three villages from the high-prevalence CKD area were more likely to show evidence of kidney damage (ACR > 30, 72.2% vs. 55.6%, p < .05) and greater

heat stress-dehydration symptoms (8.4 vs. 6.1, p < .001). In a circumscribed region of Sri Lanka, villagers experiencing higher temperatures and higher prevalence of CKDu overall had greater evidence of kidney damage by standard urine parameters, such as ACR, even after exclusion of people with diabetes or CKD. Since the entire sample consisted of agricultural workers using similar farming practices, higher temperatures may be a factor in the increased incidence of kidney disease. Participants in the higher temperature villages reported more symptoms of dehydration and heat stress, consistent with exposure to this environmental stress.

**Keywords:** Chronic Kidney Disease, Heat Stress, Agricultural Workers