Causes and Dynamics of Chronic Kidney Diseases in Vavuniya District

Jimalan, J., Shanmuganathan, S. and Navaneethan, P.

Tremendous increase of Chronic Kidney Diseases (CKD) in Vavuniya district is found to be a serious public health risk in recent years. The statistical records of Vavuniya General Hospital (from 2004-2008), interview with 50 CKD patients and 50 community people from higher risk areas and field visits were used as input datasets to screen out the causal factors. Based on the input data sets, the spatial and temporal patterns of the disease's prevalence were obtained and the possible causal factors also were prioritized. The results indicated that the temperature has positive effect ($r = 0.346$) and the rainfall has no effect ($r = 0.007$) on the diseases occurrence. The Spatial pattern reveals that the incidents of CKD are much concentrated towards the urban area and the boundary of North Central Province. The quality of water, water scarcity, and the intake of inadequate quantity of water and the wide use of agrochemicals were ranked as the 1^{st}, 2^{nd}, 3^{rd} and 4^{th} causal factors respectively. The smoking habit, snake bites, genetic factors and some internal physiological factors-diabetics and blood pressure were identified as minor causes. The mean ages for CRF (Chronic Renal Failure) and patients had kidney stones are 58 years (SD ± 13.86) and 40 years (SD ± 16.47) respectively. The male female ratio is found to be 2.4: 1 and 2.6:1 among the patients affected by CRF and kidney stones respectively. The exact causes of CKD prevalence is still mystery, but the geological origin and other changes occurred in the natural environmental settings are suspected to be the major causes. It was speculated that the over extraction of ground water in rapid urbanized activities and illegal encroachments of cascades have indirect effects on CKD, as lowering the quantity and quality of drinking water by means of disrupting the natural recharging mechanisms. The research findings will be beneficial to reduce the incidents of CKD through medical screening programmes, awareness, policy making, etc. in future, the focus must be towards water quality test in the risk to safe zone for the validation of results with concrete output.

Keywords: Chronic, Temporal, Spatial, Encroachments, Urbanization.