

DRINKING WATER QUALITY ASSESSMENT TOWARDS “CHRONIC KIDNEY DISEASE OF UNKNOWN ETIOLOGY (CKDu)” IN NORTH CENTRAL PROVINCE (NCP) OF SRI LANKA.

H.M.S. Wasana, D. Aluthpatabendi and J. Bandara*

Institute of Fundamental Studies (IFS), Hanthana Road, Kandy, Sri Lanka

The rising prevalence of chronic renal failure (CRF) in the North Central Province (NCP) has profound consequences for the increasing trend in mortality and morbidity. Renal biopsy studies in patients reveal the possibility of a toxin-mediated renal disease. Trace metals in the environment are considered as a major geo-environmental factor that could contribute to the etiology of renal damage. Hence, the exposure of heavy metals has received more attention. There is also a suggestion that, at least to some extent, the fluoride content of drinking water contributes to the CKDu.

Based on observations of this study, there is strong evidence that CKDu has a profound relationship to drinking water consumption. Even in high disease prevalence areas, such as Kebithigollewa, there are certain areas which can be isolated as non-endemic regions, where people consume spring water for drinking. Interestingly no patients have been reported from such areas, where people consume spring water for a considerable period of time.

The objective of this investigation is to study and compare the drinking water quality of comparatively high and low prevalence areas, with spring water quality with respect to CKDu.

Drinking water samples were collected from high prevalence areas (Padaviya, Kebithigollewa and Medawachchiya Divisional Secretariats (DS) divisions); low prevalence areas (Anuradhapura town area and Pulmoddai area); and from springs (four springs in the Kebithigollewa DS). Patient availability in each sampling location was also recorded for further studies. Water samples were analyzed for F, Al, Cd, As, Ca, Mg and water hardness. Fluoride in collected drinking water samples given below.

Area	No.of samples	Minimum(mg/l) (Min)	Maximum(mg/l) (Max)	Average(mg/l) (Avg)
Padaviya (Pad)	120	0.164	1.530	0.554
Medawachchiya (Med)	100	0.231	3.270	1.020
Kebithigollewa(Keb)	80	0.176	3.130	1.336
Anuradhapura town area (Anu)	30	0.121	0.883	0.411
Pulmude (Pul)	30	0.064	1.030	0.412
Springs (Spr)	24	0.061	0.069	0.066