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SERUM TGF BETA 1 AS AN EARLY MARKER OF CHRONIC KIDNEY DISEASE OF UNCERTAIN ETIOLOGY

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Chronic Kidney Disease of uncertain etiology (CKDu) is a recently described tubular interstitial nephropathy in some tropical countries including Sri Lanka. The major limitation of the traditional markers is missing the early disease. The aim of this study was to identify the importance of the serum Transforming Growth Factor 1 (TGF beta1) as an early marker for CKDu in Sri Lanka. In the case group, 76 of definite, non-dialysis CKDu patients were recruited. For control groups, endemic control (EC 79), endemic CKD (ECKD 79), non-endemic control (NEC 85) and non-endemic CKD (NECKD 85) were recruited. Serum TGF beta 1 was measured in a Luminex MAGPIX platform. The higher mean value of TGF beta1 (69587 pg/mL) was obtained from the CKDu group compared to other control groups. There was a significant difference in mean TGF beta1 of CKDu with other four control groups ($p < 0.001$). A significant difference was seen in CKDu group between stage 2 and 4, 3a and 4 and 3b and 4. In CKDu and NECKD group, there was a negative correlation with serum creatinine ($r = -0.293$ & -0.247) and positive correlation ($r = 0.332$ & 0.242) with the eGFR which were significant ($p < 0.01$). According to the ROC analysis, to differentiate CKDu from the other endemic and non-endemic CKD forms TGF beta1 showed a good AUC than the serum creatinine (0.955 & 0.987 respectively). For healthy control groups, TGF beta1 showed a slightly decreased value of AUC than the serum creatinine (0.862 & 0.902). The negative correlation of TGFbeta1 with the serum creatinine also supports the feature of early detection of the CKDu. Our results suggest that serum TGF beta1 could be a marker of early detection of CKDu and useful to differentiate CKDu from other CKD types.

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Keywords: Chronic Kidney Disease of uncertain etiology, Early marker, Transforming Growth Factor beta 1, Tubular interstitial nephropathy