

Do traditional renal diagnostic markers within normal range accurately demarcate CKDu cases from healthy in endemic regions?

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Introduction:

Chronic Kidney Disease of uncertain etiology (CKDu) is an interstitial Nephritis leading to chronic kidney disease. 30% of CKDu patients who present with symptoms and abnormal renal functions with acute interstitial nephritis (AIN) become asymptomatic over a period of time with normalizing renal dysfunction. We report the biochemical profile of these patients.

Method:

Biopsy proven patients with CKDu (13 males, mean age 42 years) and normal renal functions at 24th and 36th months follow up were selected. They initially presented as AIN. Patients with antiproteinuric treatment excluded. Serum creatinine (SCr) and urine proteins (dipstick) were done. GFR was calculated using MDRD formula. 2 out of 13 patients had renal tubular markers of RBP4, B2MG, A1MG, NGAL and KIM1 measured using Luminex multiplex bioassay. Tubular markers were interpreted as fold increase from assay manufacturers normal range (ng/L).

Results:

Their mean blood pressure and ultrasound bipolar length range were 120/78 mmHg and 8.3cm to 10.6 cm respectively. Proteinuria was trace in 4 and nil in rest of cases. The median, maximum and minimum GFR was 77, 104 and 64 ml/min/1.73M² respectively. Mean biopsy chronicity (tubulointerstitial and glomerular fibrosis) as a percentage from total number of indices was 33%. The mean fold increase of RBP4, B2MG, A1MG, NGAL and KIM1 were 49, 26, 4.1, 2.5 and none respectively.

Conclusion:

CKDu may be underdiagnosed if traditional renal markers alone are used. A prospective study with tubular markers is warranted for detection of early CKDu with novel interventions.

Key words:

CKDu, interstitial Nephritis, traditional renal markers, tubular markers