HH.MED.12

A COMPARISON OF URINARY β_2 MICROGLOBULIN LEVELS IN PATIENTS WITH CHRONIC KIDNEY DISEASE OF UNKNOWN AETIOLOGY AND CONTROLS FROM MEDAWACHCHIYA AND JA-ELA

E. A. R. I. E. Siriwardhana[1], P. A. J. Perera[1], R. Sivakanesan[2], D. T. D. J. Abeysekera[3]

[1]Department of Biochemistry, Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka
[2]Department of Biochemistry, Faculty of Medicine, University of Peradeniya
[3]Department of Pharmacology, Faculty of Medicine, University of Peradeniya

Chronic kidney disease of unknown aetiology (CKDu) has been reported in developing countries including Nicaragua, countries of Balkan region, Tunisia and Sri Lanka. Numerous studies carried out to date in these countries have failed to reveal the credible contributory factors for this disease. The objective of the present study was to compare the urinary β_2 microglobulin (β_2M) levels of CKDu subjects from Medawachchiya with those of normal subjects from Medawachchiya (Control M) and Ja-Ela (Control J).

The test group consisted of 30 CKDu patients who were randomly selected from the CKDu patient register of Medawachchiya renal clinic. Normal age and sex matched individuals were selected as controls from the same division (Control M, n=30) and from Ja – Ela (Control J, n=30), an area which has been declared to be free from CKDu.

Spot urine samples from all the subjects were collected and β_2M estimated in duplicate using an ELISA test kit (BIOQUANT, B-2MG BQO10T, Germany). The mean urinary β_2M level in CKDu patients (1.24 ± 0.71 µg/mL) was significantly higher ($p<0.05$) than that of control groups M (0.16 ± 0.05 µg/mL) and J (0.17 ± 0.05 µg/mL), while the control groups M and J had similar β_2M levels. The urinary β_2M levels between males and females of each of the three groups revealed no significant ($p > 0.05$) differences. Urinary β_2M was significantly ($p < 0.05$) higher in males (1.31 ± 0.76 µg/mL) of the test group than of the males in the control groups (0.14 ± 0.04 µg/mL and 0.18 ± 0.05 µg/mL, respectively, in groups M and J). Similarly, significantly higher β_2M concentration was seen in females of the test group (1.14 ± 0.65 µg/mL) than in females in the control groups (0.17 ± 0.05 µg/mL and 0.16 ± 0.05 µg/mL, respectively, in groups M and J).

Renal tubular function based on urinary β_2M showed a significant difference between those afflicted with CKDu and controls in the CKDu prevalent Medawachchiya Divisional Secretariat, as well as those from Ja-ela. Urinary β_2M excretion is significantly higher in those affected with CKDu.

Funding: University Grants Commission and Rajarata University of Sri Lanka.