

Association of sTNFR1 and BNP Levels with Diminished Estimated Glomerular Filtration Rate in Type 2 Diabetic Egyptian Patients

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Renal dysfunction is a key risk factor for all-cause mortality in patients with type 2 diabetes (T2D). Special attention has been raised regarding the role of soluble tumor necrosis factor receptor1 (sTNFR1) and brain natriuretic peptide (BNP) in diabetic nephropathy (DN) since they play a crucial role in the pathogenesis of T2D complications. Elevated concentrations of sTNFR1 and BNP were found to be associated with progression to end stage renal disease (ESRD) in T2D. We determined serum levels of sTNFR1 and BNP in T2D patients and correlated them with various clinical variables especially kidney function and urinary albumin creatinine ratio (UACR). This study included 30 patients with T2D who were divided into two groups according to estimated glomerular filtration rate (eGFR): group 1 with (eGFR < 60 mL/min/1.73m²) and group 2 with (eGFR > 60 mL/min/1.73 m²). They were compared with 15 sexes and age matched healthy individuals as a control group. Serum levels of sTNFR1 and BNP were determined using ELISA. Serum levels of sTNFR1 and BNP were significantly higher in group 1 when compared with group 2 ($P= 0.000$, $P= 0.000$) and they were significantly higher in both group 1 and group 2 as compared with control ($P= 0.000$, $P= 0.000$); ($P= 0.000$, $P = 0.000$) respectively. Both sTNFR1 and BNP levels showed significant negative correlation with eGFR ($r = - 0.58$, $P = 0.000$); ($r= - 0.77$, $P= 0.000$) respectively, and significant positive correlation with UACR ($r= 0.84$, $P= 0.000$); ($r=0.80$, $P= 0.000$) respectively. In conclusion, increased circulating levels of sTNFR1 and BNP were associated with loss of kidney function in T2D patients.