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Original Article

Arterial Resistive Index (RI) in Type II Diabetic Nephropathy Stages and Healthy Controls

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Abstract:

Background/Objective: Doppler ultrasonography can be an effective method to assess the severity of diabetic nephropathy. This study was conducted to investigate the relationship between Doppler ultrasound resistive index (RI) values and the clinical and laboratory findings in patients with diabetic nephropathy.

Patients and Methods: Doppler ultrasound was performed for 45 patients with type II diabetes mellitus and 30 healthy controls. Clinical and laboratory findings of cases and controls were also recorded.

Results: Diabetic patients were categorized into 3 groups according to the severity of their nephropathy, based on the serum creatinine level and 24-hour urine protein. The mean±SD RI was 0.59±0.03 for the control group, 0.67±0.04 for stage I, 0.73±0.02 for stage II, and 0.85±0.07 for stage III diabetic nephropathy (p<0.001). RI was fignificantly associated with the 24-hour urine protein and creatinine (R2=0.75 and =0.67, respectively; p<0.001) and a suitable regression model was adopted to predict the 24- hour urine protein and serum creatinine level based on RI.

Discussion: RI increases with the progression of diabetic nephropathy. RI can be used for estimation of the 24-hour urine protein and serum creatinine and for determining the stage of nephropathy, especially for patients not cooperating for collection of the 24- hour urine protein.

Keywords:

Diabetic Nephropathy · Serum Creatinine · 24-Hour Urine Protein · Doppler Ultrasound

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