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The role of Doppler in evaluation of systemic lupus erythematosus nephritis

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Objective: To evaluate role of renal Doppler in assessment of systemic lupus erythematosus nephritis.

Materials & Methods: The study included 32 systemic lupus erythematosus patients with renal affection and pathologically proven lupus nephritis (LN) by renal biopsy and pathological classification was divided into five different classes of lupus nephritis LN according to the 2003 International Society of Nephrology (ISN)/Renal Pathology Society (RPS) classification. Ultrasound and Doppler for both kidneys were performed for all of them; ultrasound assessed renal size, parenchymal thickness and echogenicity, corticomedullary differentiation and back pressure changes. Doppler examination evaluated general renal vascularity; kidney vascularity was assessed by measuring 3 different segmental arteries, approximately at the junction of renal sinus and parenchyma. Resistivity indices were calculated from segmental, lobar and interlobar arteries. Our radiological findings were correlated with clinical, laboratory and pathological findings.

Results: The patients' age ranged from 13-45 with a mean 28.19 ± 8.026 SD there was a significant increase in renal resistivity index RI in LN patients when compared with SLE patients without renal affection and normal group, P value 0.022. Only 2 cases (6.3%) of LN cases showed a decrease in vascularity of the kidneys which showed no significant correlation with the disease severity or duration, distribution of renal pathologic findings according to International Society of Nephrology and the Renal Pathology Society classes within the LN group. Class II represented 9%, class III represented 38%, class IV represented 31% and class V represented 16% and class IV represented 6% of LN patients according to biopsy results. There is positive correlation between RI and renal biopsy classification with high significance, P value 0.001 with $r=0.794$.

Conclusion: Color Coded Doppler play an important role in diagnosis of different lupus nephritis classes and RI could be used as a marker of severity in SLE patients with kidney involvement, suggesting the possible use of RI as a marker in the assessment of outcome and treatment.

Biography

Ahmed Abdel Samie Mahmoud has completed his Masters degree in Radiology from Cairo University and MD from Al-azhar University School of Medicine. He is an Assistant Professor and Head of Radiology Department in Theodor Bilharz Research Institute, Cairo, Egypt. He has published 10 papers in reputed journals and has been serving as a Reviewer for the *Egyptian Journal of Radiology and Nuclear Medicine*.

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