

## Early Assessment of Intrarenal Arterial Resistance Index and Long-Term Renal Function in Renal Transplant Recipients in South Western Nigeria

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### ABSTRACT

**Background:** Color Doppler ultrasonography of intrarenal arterial resistance index (RI), performed early after kidney transplant, has proven to reliably predict short-term allograft function.

**Purpose:** The aim of this study was to assess whether early Doppler assessment could also predict long-term renal function.

**Material and methods:** A retrospective study of intrarenal RI using ultrasound in 41 stable kidney transplant patients who underwent RI assessment within 1 month after the transplant. Color Doppler ultrasonography was done to calculate the intrarenal RI within the first four weeks after transplant. The mean values of the intrarenal RI of the interlobar arteries of the allograft kidneys were measured and recorded. The data were analyzed with the aid of computer-based SPSS 20.0 software for windows.

**Results:** Older recipient age, active smoking and proteinuria were associated with a higher intrarenal RI. Multivariate analyses showed that renal RI and donor age were independent predictors of allograft outcome. Kaplan-Meier estimates of cumulative graft survival were significantly worse in patients who had the values of the RI of 0.7 or more, than they were in patients who had the values of the RI of less than 0.7 ( $p=0.002$ ).

**Conclusion:** This study reveals that renal RI determined within the first month after renal transplant predicts long-term allograft function in kidney transplant recipients.

**Keywords:** Doppler ultrasonography, Graft survival, Renal resistance index

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