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Evaluation of renal function parameters in living kidney donors with Tc-99m-mercaptoacetyltriglycine acid (99mTc-MAG3) and Cr-51-ethylenediamine tetraacetic acid (51Cr-EDTA) as a prognosis factor for long-term graft survival and function

Abstract

The aim of this study was to characterize the impact of renal function parameters obtained from ^{99m}Tc-MAG3 scintigraphy and ^{51}Cr-EDTA GFR measurements in 108 live kidney donors on the outcome of transplantation. We found that there was no significant influence of ^{99m}Tc-MAG3 renal transit parameters (mean transit time: p=0.26, sigmoidal shape analysis: p=0.11) or the split kidney function (p=0.59) on the death-censored graft survival at 10 years. Interestingly, the graft survival was significantly shortened in recipients who had a donor with a ^{51}Cr-EDTA GFR of 90 ml/min/1.73 m^2 or less (p=0.01, HR=6.4). Thus, our data support the use of nuclear medicine examinations for the donor evaluation in the context of live kidney transplantation.