Allocating kidneys from “Expanded Criteria Donors”: Karpinski score provides independent predictors of renal function and graft survival

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OBJECTIVES

Criteria for organ allocation for Single Kidney Transplantation (SKT) or Double Kidney Transplantation (DKT) from “Expanded Criteria Donor” (ECD) are debated. Objective of our study is: 1) compare kidney survival of SKT vs DKT and different groups of ECD, defined on the Karpinski score; 2) evaluation of correlation between histological score and donor’s clinical characteristics with kidney function and survival in ECD

METHODS

We included all ECD transplants performed in our Center from 1998 to 2014 (n = 457) and divided SKT and DKT in 4 groups (SKT0 and SKT1; DKT2 and DKT3), which represent kidneys allocated with “classic” criteria (SKT 0: score ≤ 3; DKT 2: score 4) and “extensive” criteria (SKT1: score 4-5; DKT3: score > 4). We evaluated kidney and patient survival (Kaplan-Meier) and association between donor variables and renal outcomes (logistic, univariate and multivariate analysis).

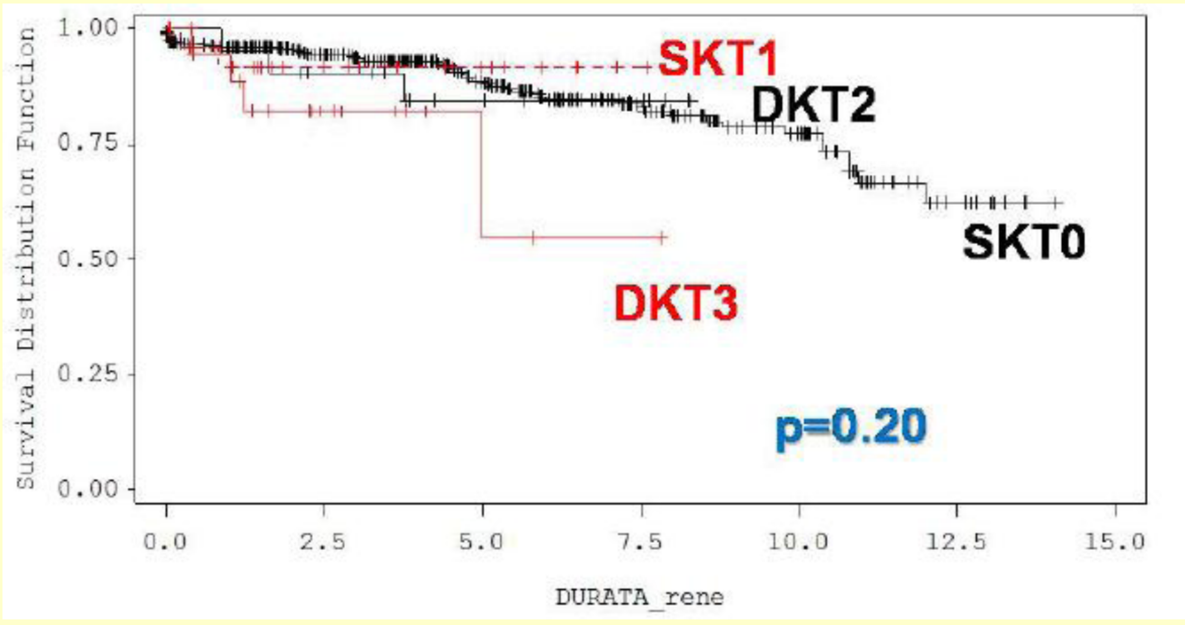

Figure 1. Death-censored graft survival stratified for histological category

RESULTS

We have found no significative difference between survival in SKT and DKT if we consider them globally; indeed, if we analyze histological classes (Figure 1) we found a non significative trend toward a worse graft survival in DKT3. Risk factors for a worse 1-year graft function are age, hypertension, eGFR (Cockroft-Gault) < 50 ml/min; DKT2 group result to have a “protective effect” toward renal function (OR = 0,18 p = 0,004) in multivariate analysis.

CONCLUSIONS

The comparison between sub-populations of ECD obtained with Karpinski score demonstrates a lower graft survival in DKT3 and a strong protective effect of DKT2, if we consider end-point of 1-year renal function. Histology allows to stratify the heterogeneous population of ECD into sub-classes with independent prognostic value, that can guide allocation by integrating clinical characteristics and medical history of the donor.

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