VALIDATION OF THE RISK INDEX FOR LIVING DONOR KIDNEY TRANSPLANTATION (LKDPI) IN A EUROPEAN COHORT

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Background: Recently, a risk index for living donor kidney transplantation (LKDPI) was proposed (Massie et al. AJT 2016) to compare living donor kidneys (LDK) to each other and to deceased donor kidneys. Until now, the LKDPI has not been validated externally.

Methods: This retrospective analysis included 1305 consecutive adult kidney transplant recipients (889 deceased donor kidneys, 416 LDK), transplanted 2000-2016. Outcome was followed over a median of 6.5 years.

Table 1

Patient characteristics (n=1305)

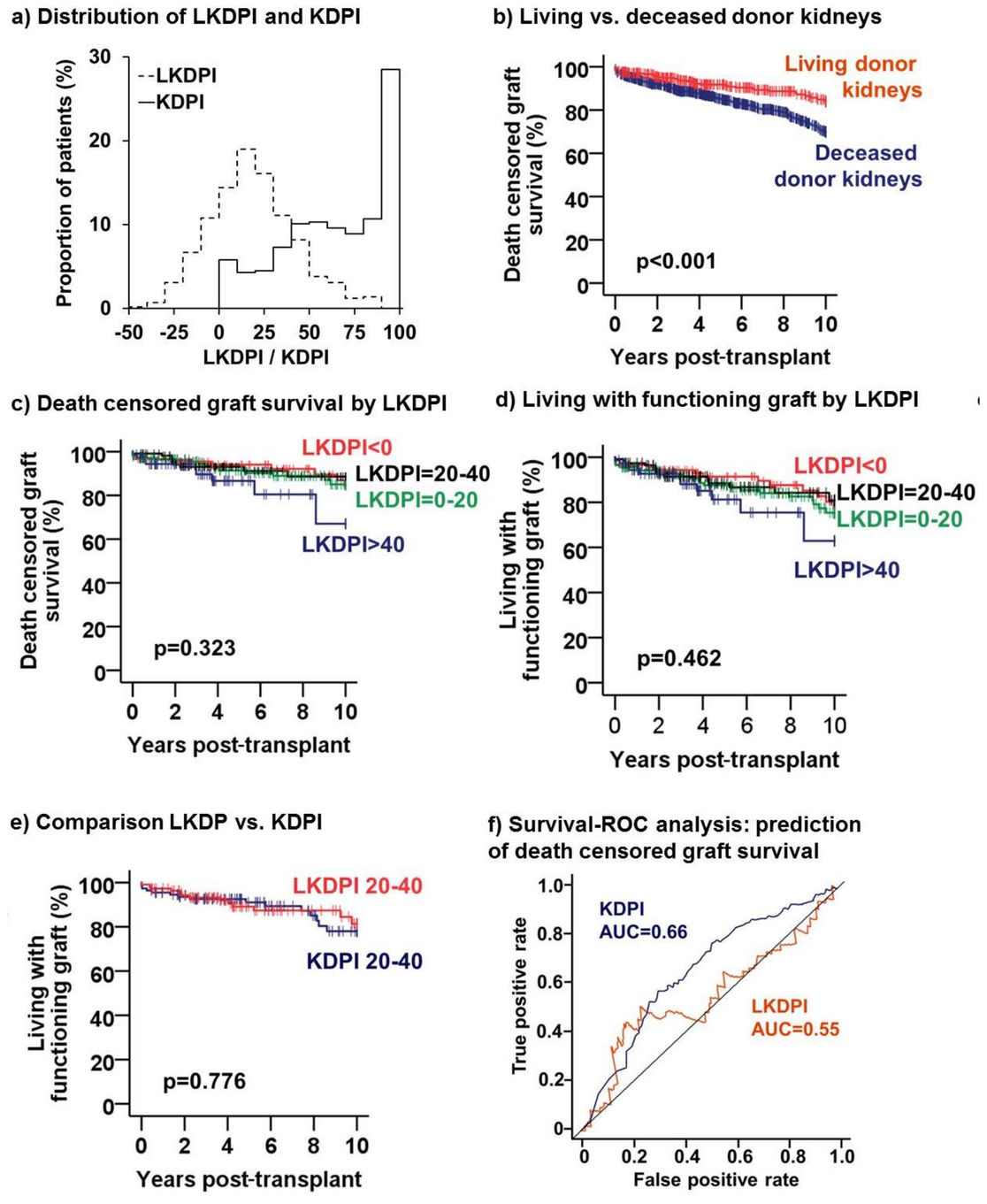
	Deceased kidney donors	Living kidney donors	p
N	889	416	
Mean recipient age, years (SD)	53.5 (13.7)	43.3 (14.2)	<0.001
Mean donor age, years (SD)	54.2 (15.6)	49.8 (11.5)	<0.001
Recipient male, n	523 (58.8 %)	280 (67.3 %)	0.003
Donor male, n	481 (54.5 %)	152 (36.5 %)	<0.001
Donor characteristics			
Median BMI (IQR)	25.7 (23.6-27.8)	25.1 (22.5-27.8)	0.013
Median creatinine, mg/dl (IQR)	0.9 (0.7-1.2)	0.8 (0.7-0.9)	<0.001
Hypertension	347 (39.0 %)	91 (21.9 %)	<0.001
Diabetes mellitus	97 (10.9 %)	4 (1.0 %)	<0.001
Median HLA-mismatches (IQR)	3 (2-4)	3 (2-4)	<0.001
Mean cold ischemia time, hours (SD)	12.1 (5.1)	2.5 (0.8)	<0.001
Recipients characteristics			
Mean recipient BMI (SD)	25.6 (4.5)	25.2 (4.4)	0.083
Prior kidney transplantation, n	139 (15.6 %)	22 (5.3 %)	<0.001
Median time on dialysis, months (IQR)	67.0 (39.2-92.0)	10.3 (0.2-29.0)	<0.001
Mean Raw EPTS (SD)	2.05 (0.66)	1.20 (0.74)	<0.001

Results: The median LKDPI was 17, while the median KDPI was 69 with a high proportion of donor kidneys with a high KDPI (40% KDPI ≥80) (Fig.1a). LDK showed a significant better death censored graft survival (Fig.1b). Categorization of LDK into LKDPI subgroups (LDKPI<0, 0-20, 20-40 and >40) revealed no significant difference in death censored graft survival (after 10 years 84% vs. 85% vs. 89% vs. 67%, respectively, p=0.323). Without reaching statistically significance, there was a tendency for poorer graft survival for kidneys with LKDPI>40 (Fig.1c). Comparing corresponding subgroups of LKDPI and KDPI (LKDPI/KDPI 0-20 or 20-40) showed comparable graft survival (Fig.1e).

In Cox regression models KDPI (HR 1.15; p<0.001) and age of the living kidney donor (HR1.03; p=0.046), but not LKDPI (HR 1.11; p=0.100) were significantly associated with the risk of graft loss. A multivariate model adjusted for recipient characteristics assessed by the EPTS score revealed KDPI (HR 1.17; p<0.001) but not LKDPI (HR 1.11; p=0.135) as a significant independent predictor of graft loss. ROC analyses for graft survival demonstrated lower predictive discrimination of the LKDPI (AUC 0.55) compared to the KDPI (AUC 0.66) (Fig.1f).

Conclusions: These results provide some evidence for the comparability of LKDPI to KDPI regarding posttransplant outcome, but our data suggest limited benefit of the LKDPI for the prognosis of graft survival in this European cohort.

Figure 1



DOI: 10.3252/pso.eu.54ERA.2017