What is hot in clinical solid organ transplantation

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McGill University Health Center
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Sept 30, 2014

Valle de la Luna, San Juan, Argentina

Disclosure

- Astellas and Novartis
  - Educational grant (Transplant Program)
  - Support for database (Transplant Program)

2013 - 2/2014 literature scan
All organs

- Am J Transplant
- Transplantation
- Transplant Int
- J Heart Lung Transplant
- Liver Transplantation
- Kidney Int
- J Am Soc Nephrol
- Clin J Am Soc Nephrol
- JAMA
- Ann Int Med
- Lancet
- N Engl J Med

Outline

- Donor source / organ preservation
- Immunosuppression
- Complications

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- Donor source / organ preservation
- Immunosuppression
- Complications

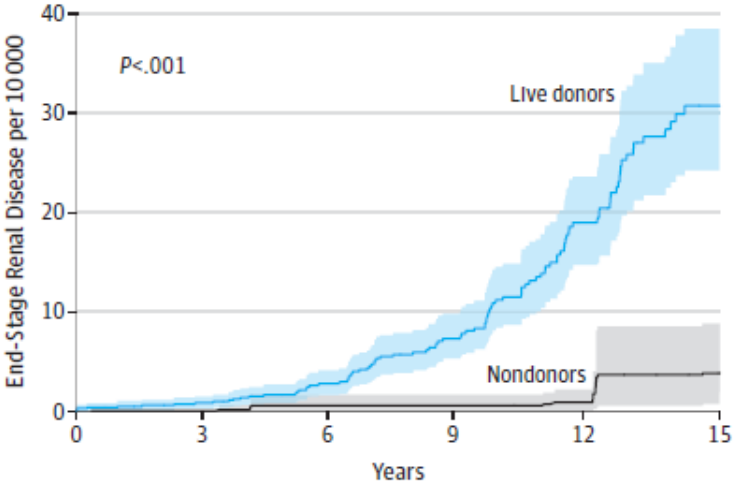
Original Investigation

Risk of End-Stage Renal Disease Following Live Kidney Donation

Abimereki D. Muzaale, MD, MPH; Allan B. Massie, PhD; Mei-Cheng Wang, PhD; Robert A. Montgomery, MD, DPhil; Maureen A. McBride, PhD; Jennifer L. Wainright, PhD; Dorry L. Segev, MD, PhD

, Johns Hopkins University

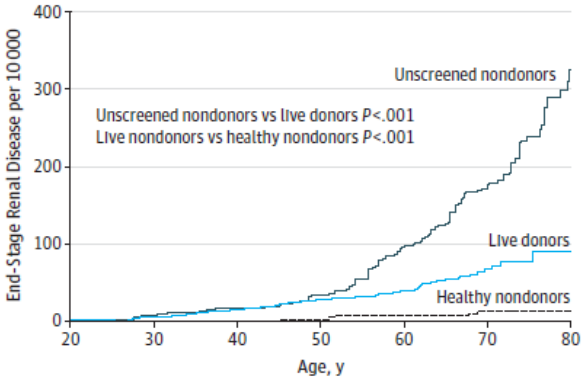
A Cumulative incidence of end-stage renal disease



No. at risk

Live donors	96 217	77 587	58 979	39 231	21 573	8781
Nondonors	96 217	95 930	95 422	94 734	94 199	50 124

Figure 3. Estimated Lifetime Risk of End-Stage Renal Disease in Matched But Unscreened Nondonors, Live Kidney Donors, and Matched Healthy Nondonors



No. at risk

Unscreened nondonor	1296	18 436	36 272	40 863	26 982	7990	647
Live donor	1143	13 144	22 647	22 944	12 151	2575	218
Healthy nondonor	1306	18 487	36 397	40 961	28 358	9011	870

Nondonors were identified among participants in the third National Health and Nutrition Examination Survey. Healthy nondonors were a subset of unscreened nondonors. Comparisons were made by bootstrapping.

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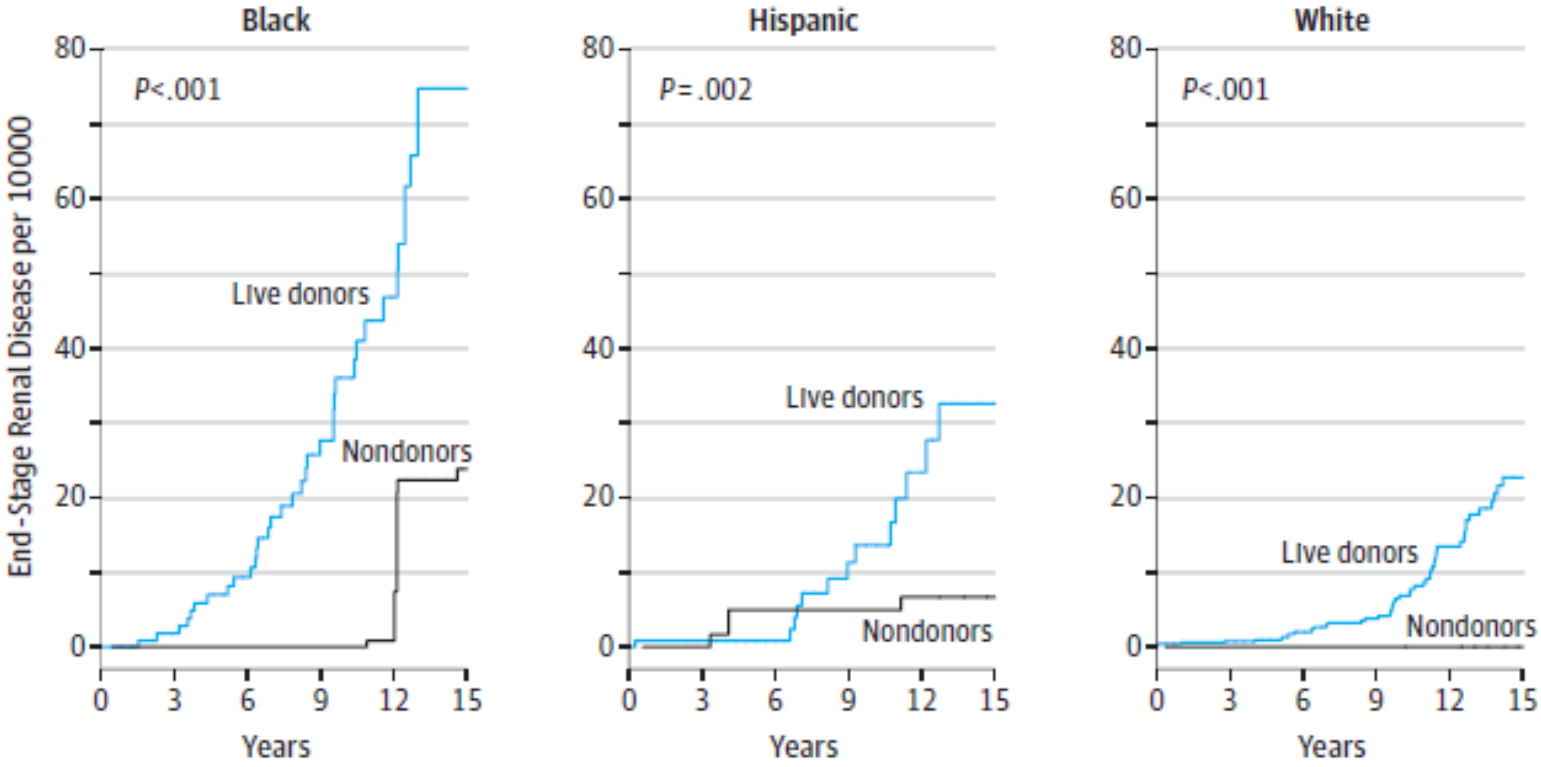
B Cumulative incidence of end-stage renal disease by race/ethnicity



No. at risk

Live donors	12387	7910	2887	12061	6989	2452	71769	44080	16234
Nondonors	12387	12256	12093	12061	11957	11818	71769	71209	70288

Original Investigation

Risk of End-Stage Renal Disease Following Live Kidney Donation

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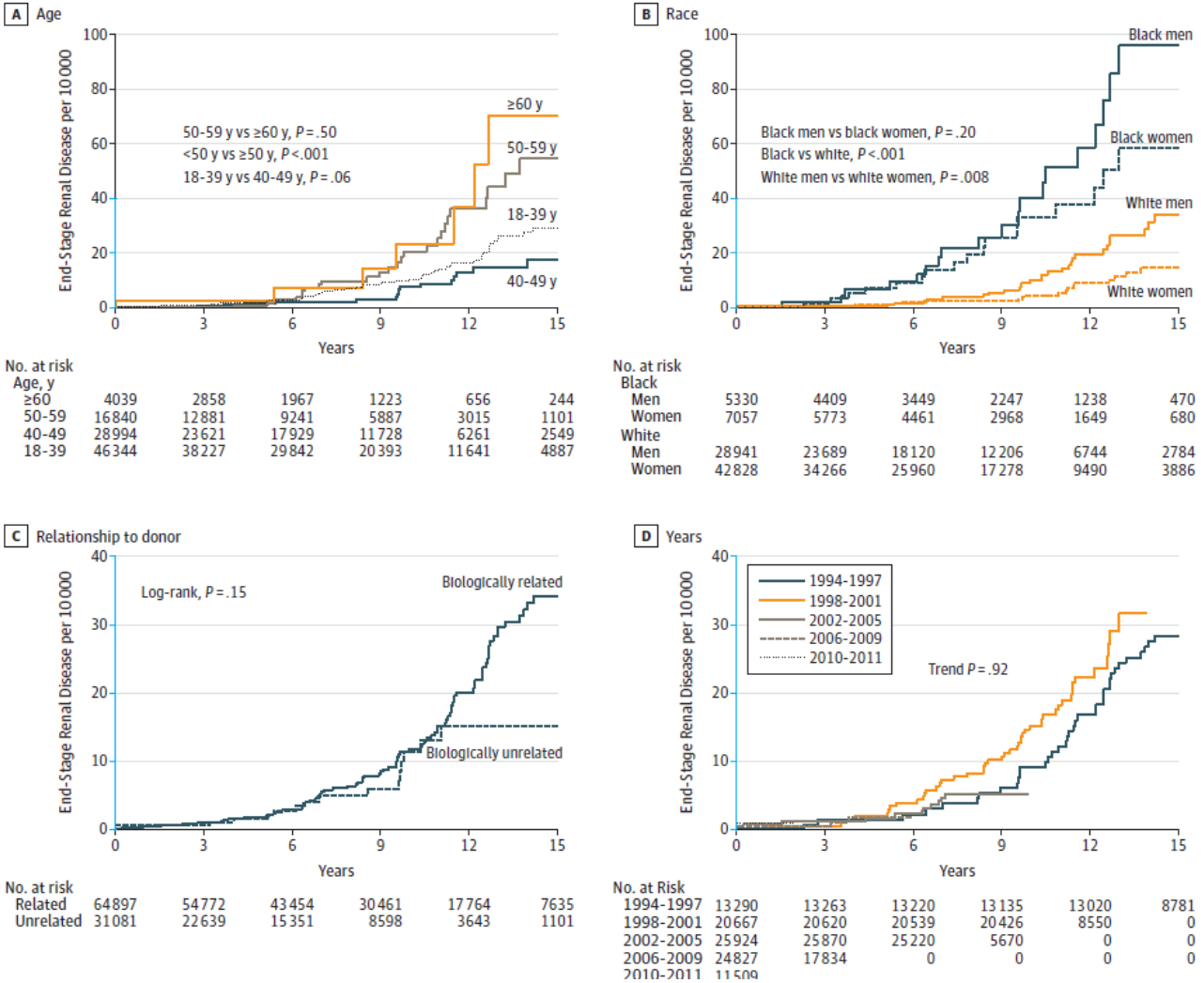
, Johns Hopkins University

Figure 2. Cumulative Incidence of End-Stage Renal Disease in Live Kidney Donors



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doi: 10.1111/j.1600-6143.2012.04323.x

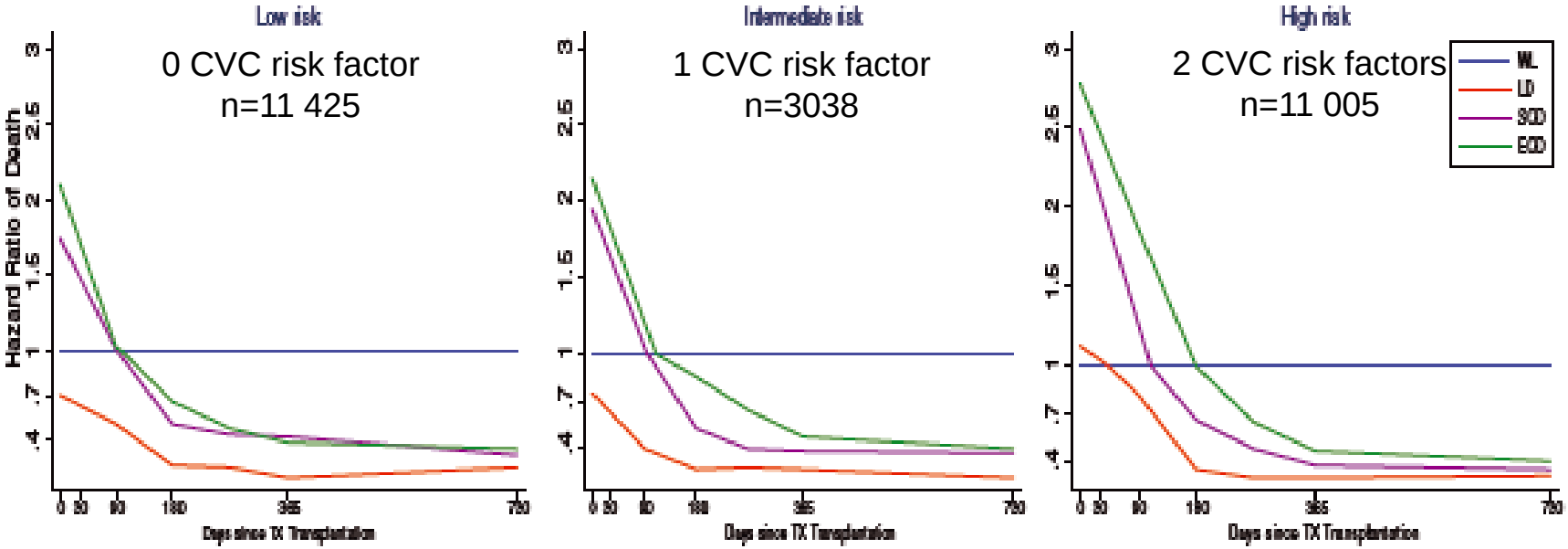
Quantification of the Early Risk of Death in Elderly Kidney Transplant Recipients

J. S. Gill[a,b,c,*], E. Schaeffner[d], S. Chadban[e], J. Dong[a], C. Rose[a], O. Johnston[a] and J. Gill[a,b]

[a]Division Of Nephrology, University of British Columbia, Vancouver, Canada

- 25468 KTx pts >65 yrs
- USRDS 1995 - 2007

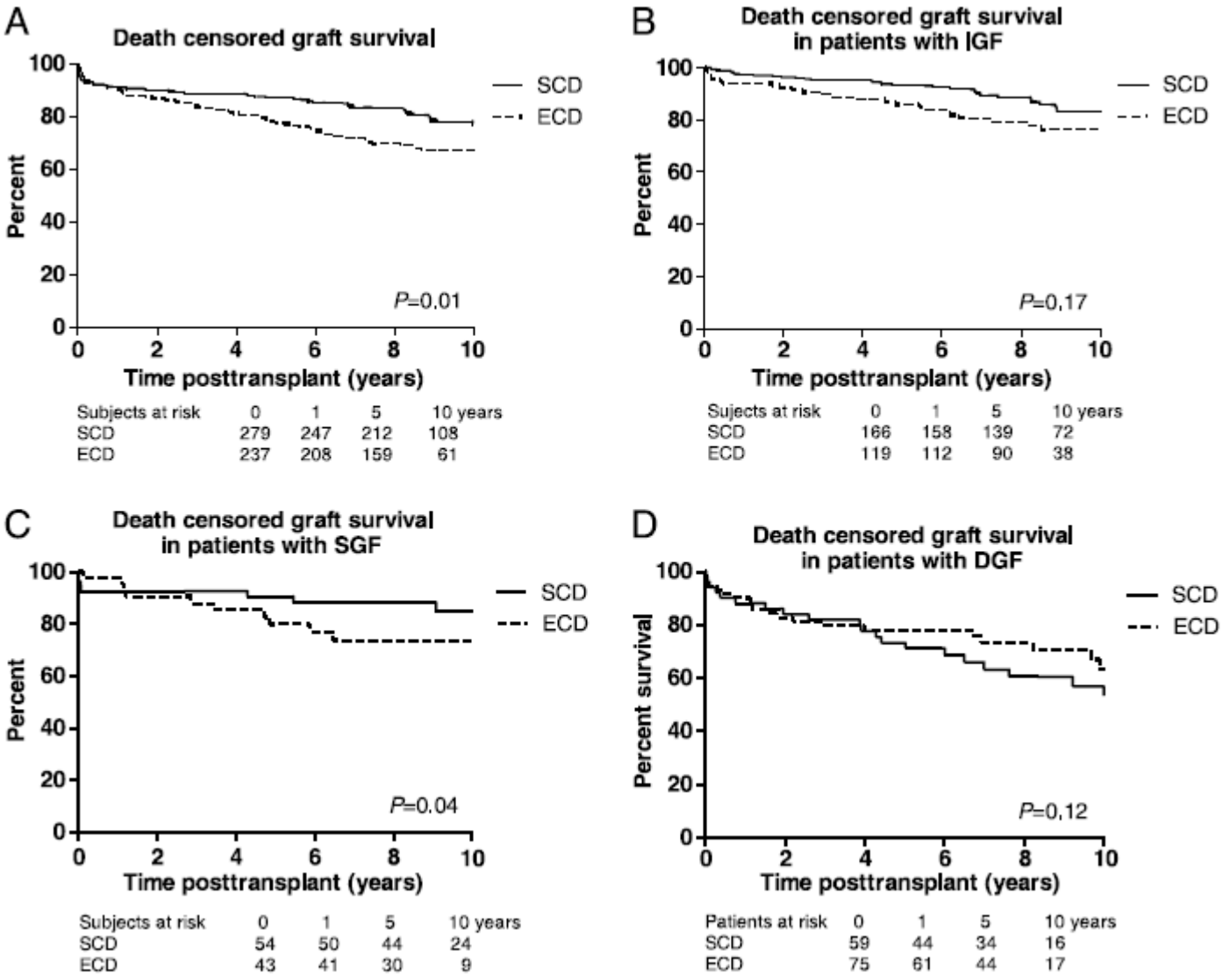
- ESRD due to diabetes = High Risk
- CVC risk factors
  - IHD, CHF, CVA, PVD



Impact of Early Graft Function on 10-Year Graft Survival in Recipients of Kidneys From Standard- or Expanded-Criteria Donors

Nassima Smail,[1] Jean Tchervenkov,[2] Steven Paraskevas,[2] Dana Baran,[1] Istvan Mucsi,[1] Mazen Hassanain,[2,3] Prosanto Chaudhury,[2] and Marcelo Cantarovich[1,4]

McGill University Health Center



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doi: 10.1111/j.1600-6143.2012.04311.x

Does Expanded Criteria Donor Status Modify the Outcomes of Kidney Transplantation From Donors After Cardiac Death?

S. K. Singh[a,d] and S. J. Kim

	Non-ECD/Non-DCD (N = 50,242)	Non-ECD/DCD (N = 4,840)	ECD/Non-DCD (N = 12,172)	ECD/DCD (N = 562)
PNF	0.7%	0.9%	1.5%	2.9%
DGF	21.3%	39.6%	30.5%	53.3%

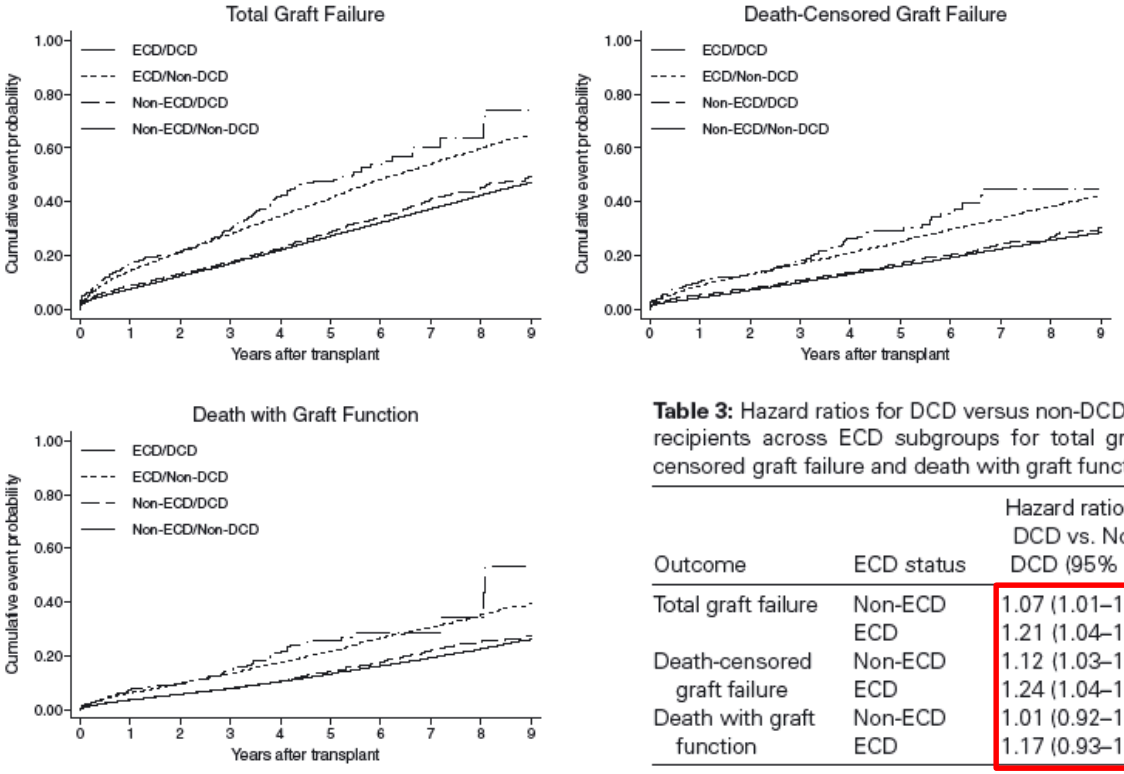

Table 3: Hazard ratios for DCD versus non-DCD kidney transplant recipients across ECD subgroups for total graft failure, death-censored graft failure and death with graft function

Outcome	ECD status	Hazard ratio for DCD vs. Non-DCD (95% CI)	p-Value for interaction
Total graft failure	Non-ECD	1.07 (1.01–1.15)	0.14
	ECD	1.21 (1.04–1.40)	
Death-censored graft failure	Non-ECD	1.12 (1.03–1.23)	0.34
	ECD	1.24 (1.04–1.54)	
Death with graft function	Non-ECD	1.01 (0.92–1.12)	0.26
	ECD	1.17 (0.93–1.45)	

Figure 2: Kaplan–Meier curves for total graft failure, death-censored graft failure and death with graft function by ECD/DCD subgroups. Log-rank $p < 0.0001$ for the overall comparison of ECD/DCD subgroups for each of the three study outcomes. See Supporting Table S2 for log-rank p values from pairwise comparisons of ECD/DCD subgroups for the three study outcomes.

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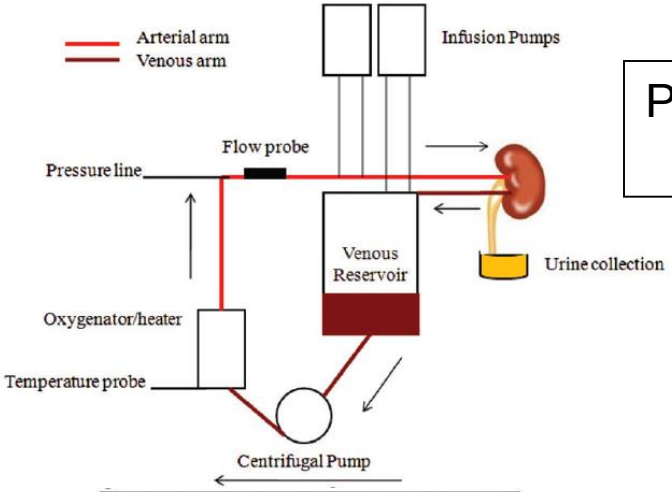
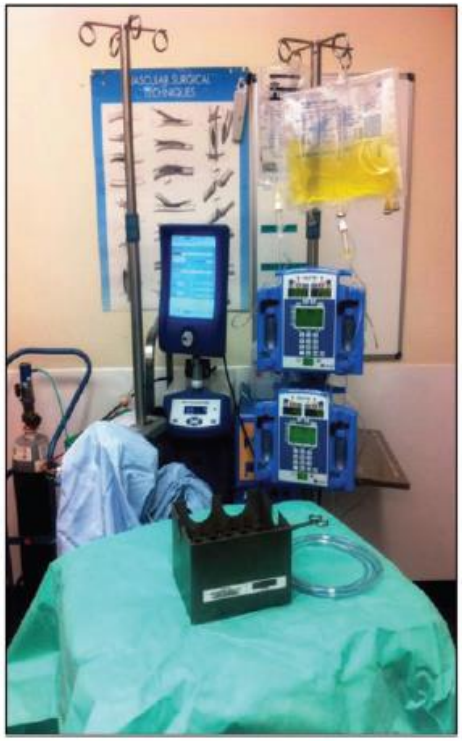
Renal Transplantation After *Ex Vivo* Normothermic Perfusion: The First Clinical Study

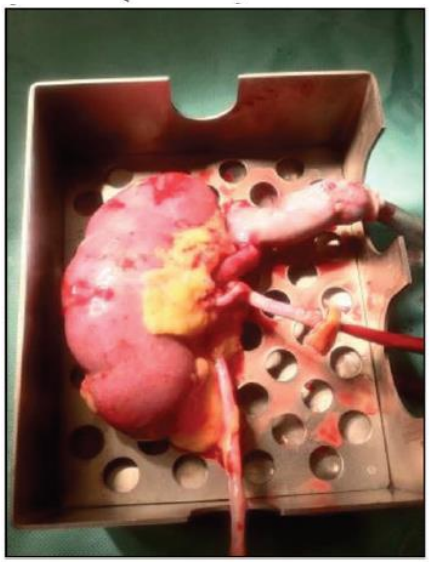
M. L. Nicholson* and S. A. Hosgood

Department of Infection, Immunity and Inflammation, Transplant Group, Leicester General Hospital, University of Leicester, Leicester, UK



Perfusion time
63 ± 16 min





- ECD
- DGF
  - EVNP 1/18 (5.6%)
  - Controls 17/47 (36.2%)
    P=0.014

Outline

- Donor source / organ preservation
- Immunosuppression
- Complications

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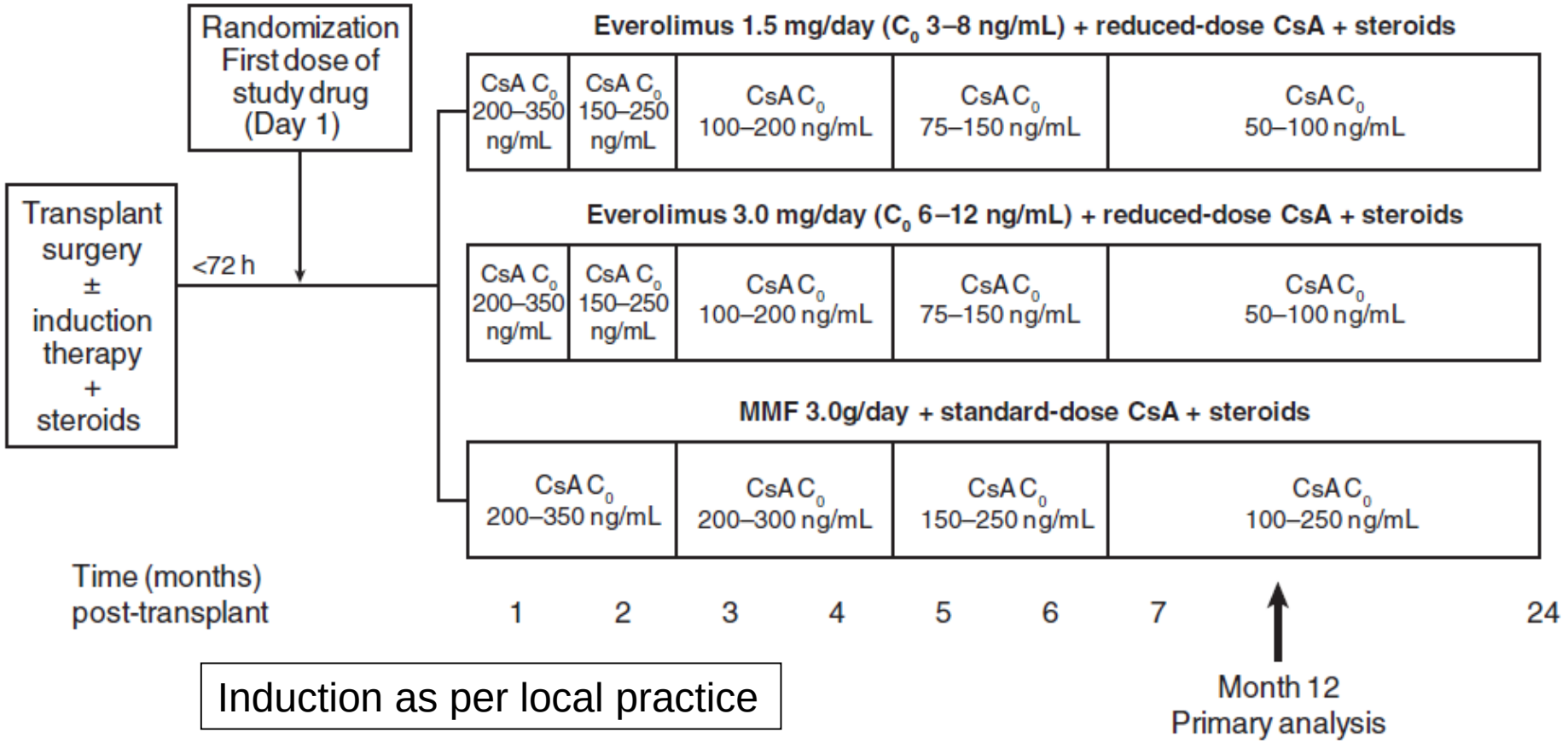
Everolimus Versus Mycophenolate Mofetil in Heart Transplantation: A Randomized, Multicenter Trial

H. J. Eisen[a,*], J. Kobashigawa[b], R. C. Starling[c], D. F. Pauly[d], A. Kfoury[e], H. Ross[f], S.-S. Wang[g], B. Cantin[h], A. Van Bakel[i], G. Ewald[j], S. Hirt[k], H. Lehmkuhl[l], A. Keogh[m], M. Rinaldi[n], L. Potena[o], A. Zuckermann[p], G. Dong[q], C. Cornu-Artis[r] and P. Lopez[r]



Induction as per local practice

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- Efficacy
  - EVL 1.5 mg was not inferior to MMF at 1 and 2 yrs
  - ↓ CAV (IVUS)
- Infections
  - CMV: ↓ incidence on EVL (7.2% vs. 19.4%)
  - Bacterial: ↑ incidence on EVL (30.1% vs. 22%)

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- Discontinuation
  - EVL 29.7% vs. MMF 19% (1-yr)
  - EVL 33.3% vs. MMF 25.7 (2-yr)

- Mortality
  - EVL 1.5 mg 10.6% vs. MMF 9.2% at 2 yrs
  - EVL 3.0 mg 9.9% vs. MMF 2.8% (P=0.018) - terminated

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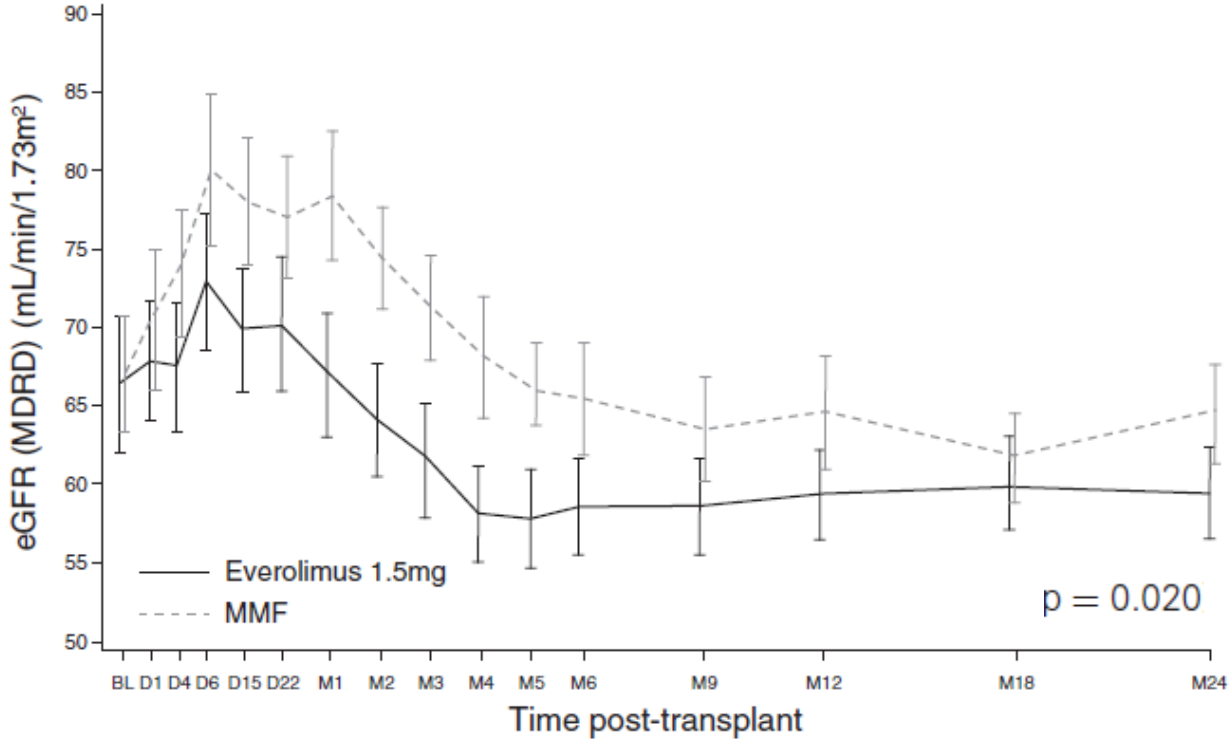
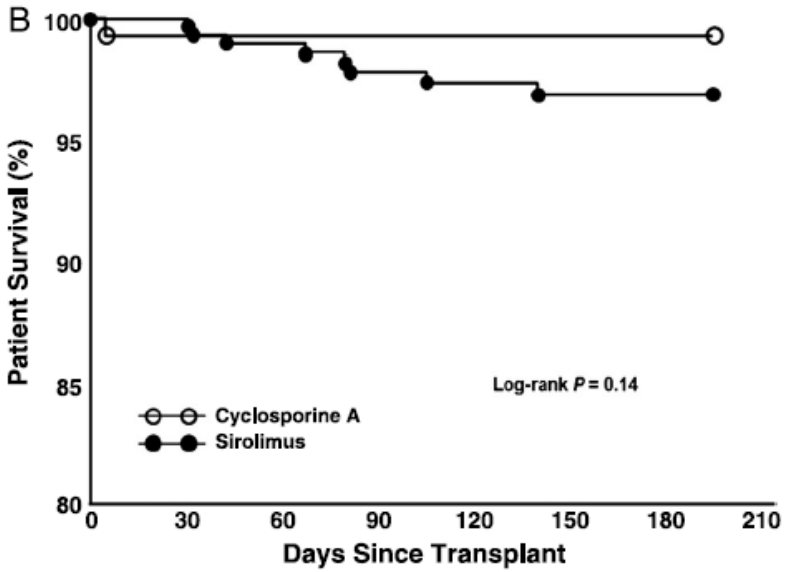
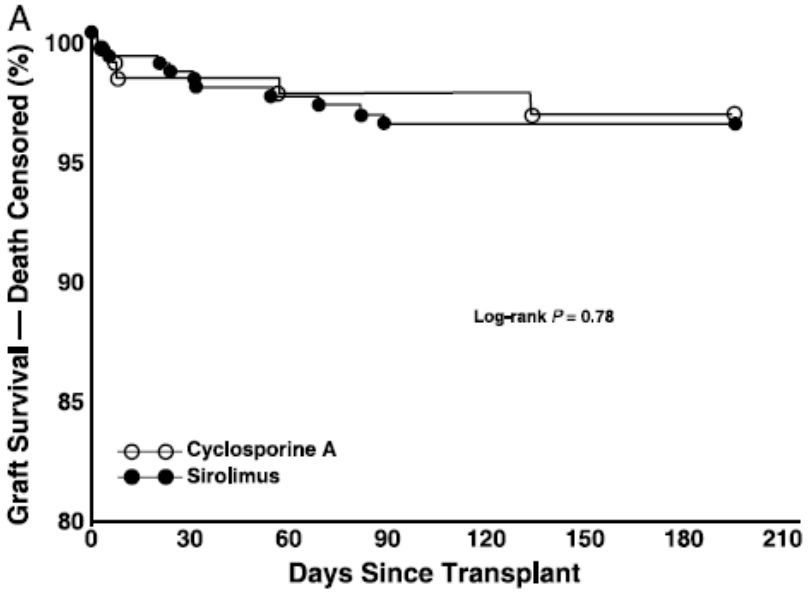


Figure 4: Estimated GFR (eGFR) to month 24 in the everolimus 1.5 mg and MMF study group (intent-to-treat [ITT] population). Data are shown as mean values with 95% confidence intervals (CIs).

A Randomized, Open-Label Study of Sirolimus Versus Cyclosporine in Primary De Novo Renal Allograft Recipients

Stuart M. Flechner,[1,9] Alihan Gurkan,[2] Anders Hartmann,[3] Christophe M. Legendre,[4] Graeme R. Russ,[5] Josep M. Campistol,[6] Francesco P. Schena,[7] Carolyn M Hahn,[8] Huihua Li,[8] Joan M. Korth-Bradley,[8] Sandi See Tai,[8] and Seth L. Schulman[8]





Transplantation 2013;95: 1233–1241

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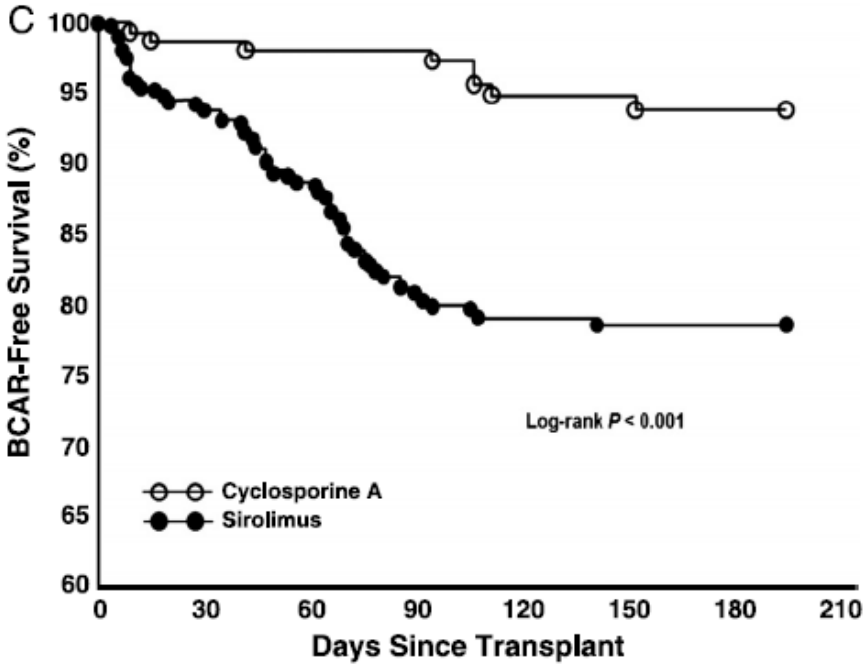

- Enrollment was stopped after 12 months
- SRL (n=314)
- CsA (n=161)

- Drug D/C
  - Rapa: 17.4%
  - CsA: 6.8% (P=0.001)

Transplantation 2013;95: 1233–1241

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doi: 10.1111/ajt.12460

Long-Term Belatacept Exposure Maintains Efficacy and Safety at 5 Years: Results From the Long-Term Extension of the BENEFIT Study

L. Rostaing[1,2,*], F. Vincenti[3], J. Grinyó[4], K. M. Rice[5], B. Bresnahan[6], S. Steinberg[7], S. Gang[8], L. E. Gaite[9], M.-C. Moal[10], G. A. Mondragón-Ramirez[11], J. Kothari[12], L. Pupim[13] and C. P. Larsen[14]

Similar incidence of malignancies
Better lipid profile

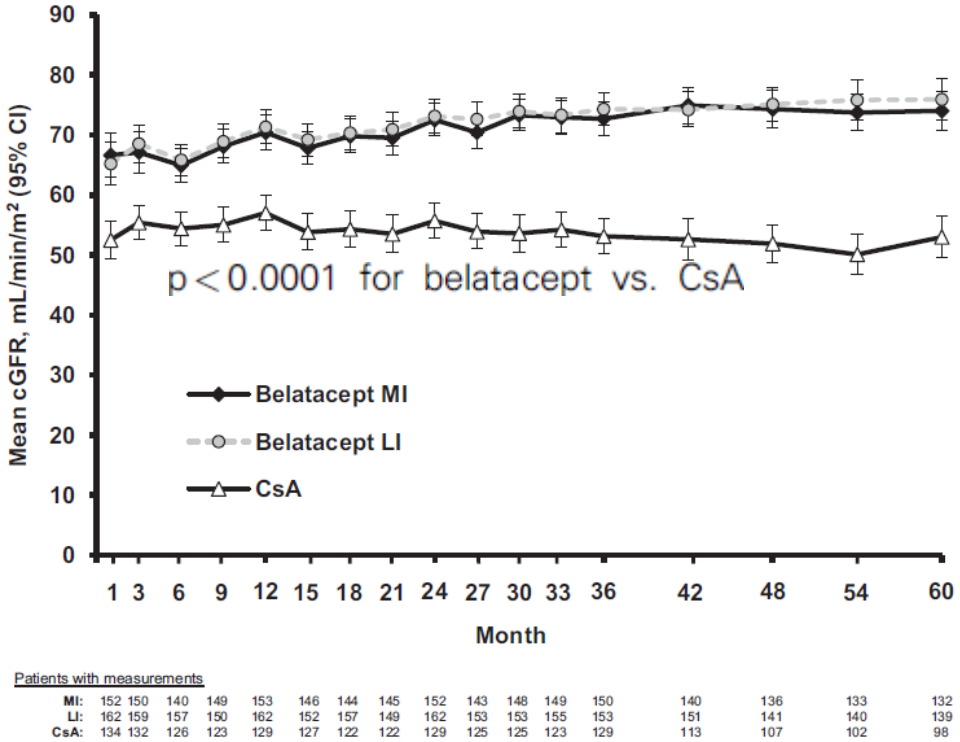


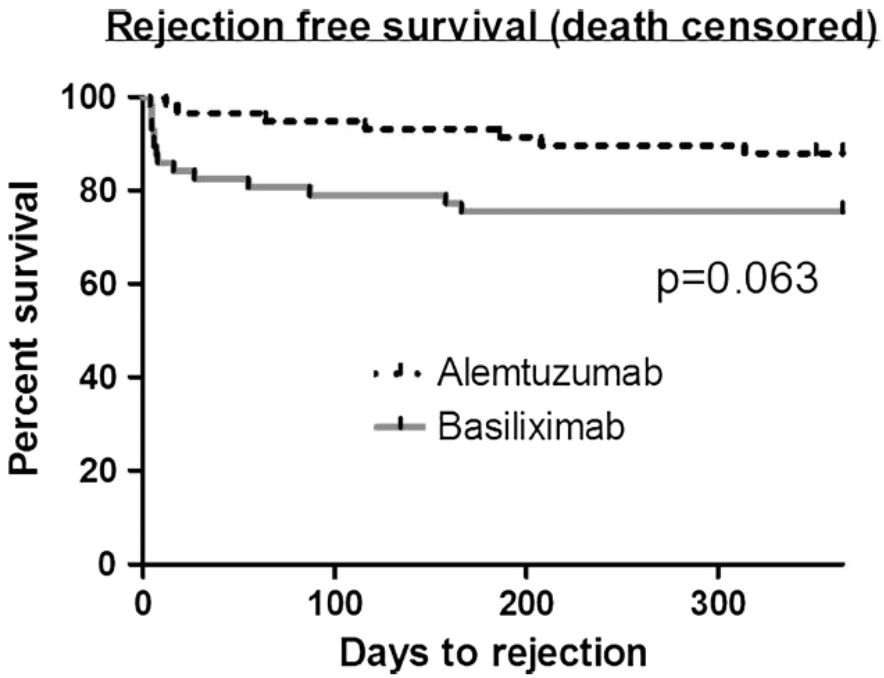
Figure 3: Mean (95% confidence intervals) cGFR (MDRD) over 60 months in the LTE. cGFR values were as observed. CsA, cyclosporine A; cGFR, calculated glomerular filtration rate; LI, less intensive; LTE, long-term extension; MDRD, Modification of Diet in Renal Disease; MI, more intensive.

Alemtuzumab Induction in Renal Transplantation Permits Safe Steroid Avoidance with Tacrolimus Monotherapy: A Randomized Controlled Trial

Matthew P. Welberry Smith,[1] Aravind Cherukuri,[1] Chas G. Newstead,[1] Andrew J.P. Lewington,[1] Niaz Ahmad,[2] Krish Menon,[2] Stephen G. Pollard,[2] Padmini Prasad,[3] Steve Tibble,[1] Emma Giddings,[1] and Richard J. Baker[1,4]

St. James's University Hospital, Leeds, UK

- 116 KTx (RCT)
- Methylpred 1g x1
- Alemtuzumab + Tac
- Basiliximab + MMF + Tac
- Tac levels
  - <3 mo: 9-14 ng/ml
  - >3 mo: 4-9 ng/ml



Similar incidence of infections

Transplantation 2013;96: 1082–1088

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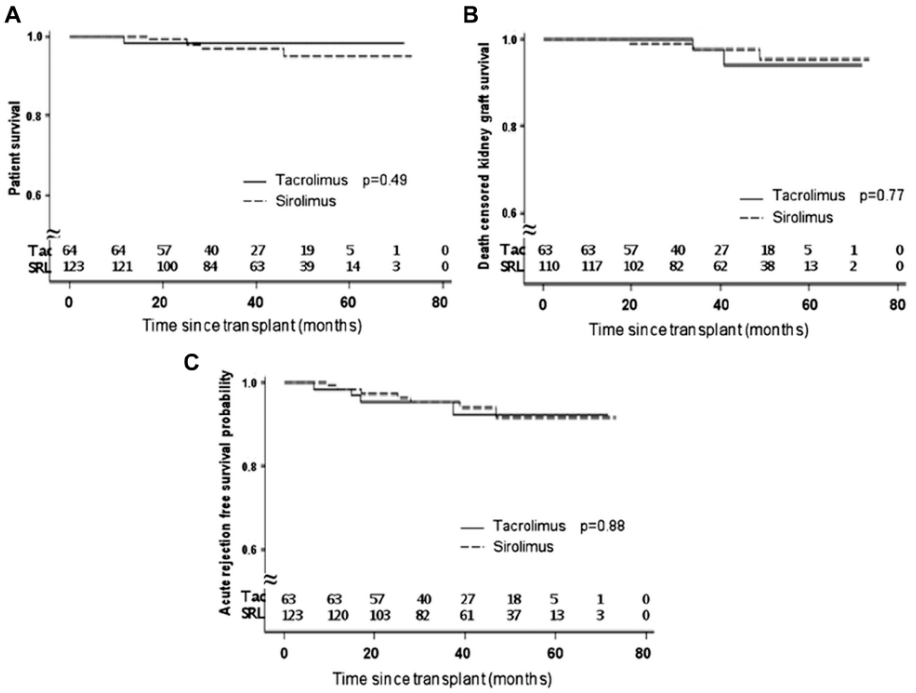
Impact of Calcineurin-Inhibitor Conversion to mTOR Inhibitor on Renal Allograft Function in a Prednisone-Free Regimen

D. Chhabra[1], A. Alvarado[2,3], P. Dalal[2], J. Leventhal[2], C. Wang[4], N. Sustento-Reodica[2,5], N. Najafian[6], A. Skaro[2], J. Levitsky[2], V. Mas[7] and L. Gallon[2,3,*]

Northwestern University, Chicago, IL

- RCT, 200 KTx
- Alemtuzumab + MMF + Tac + rapid steroid WD
- At 1-yr Rapa vs. Tac (2:1)
- Exclusion criteria
  - eGFR <40, Prot >0.5 g/d
  - AR, severe dyslipidemia
  - WBC <2000, PLT <100000



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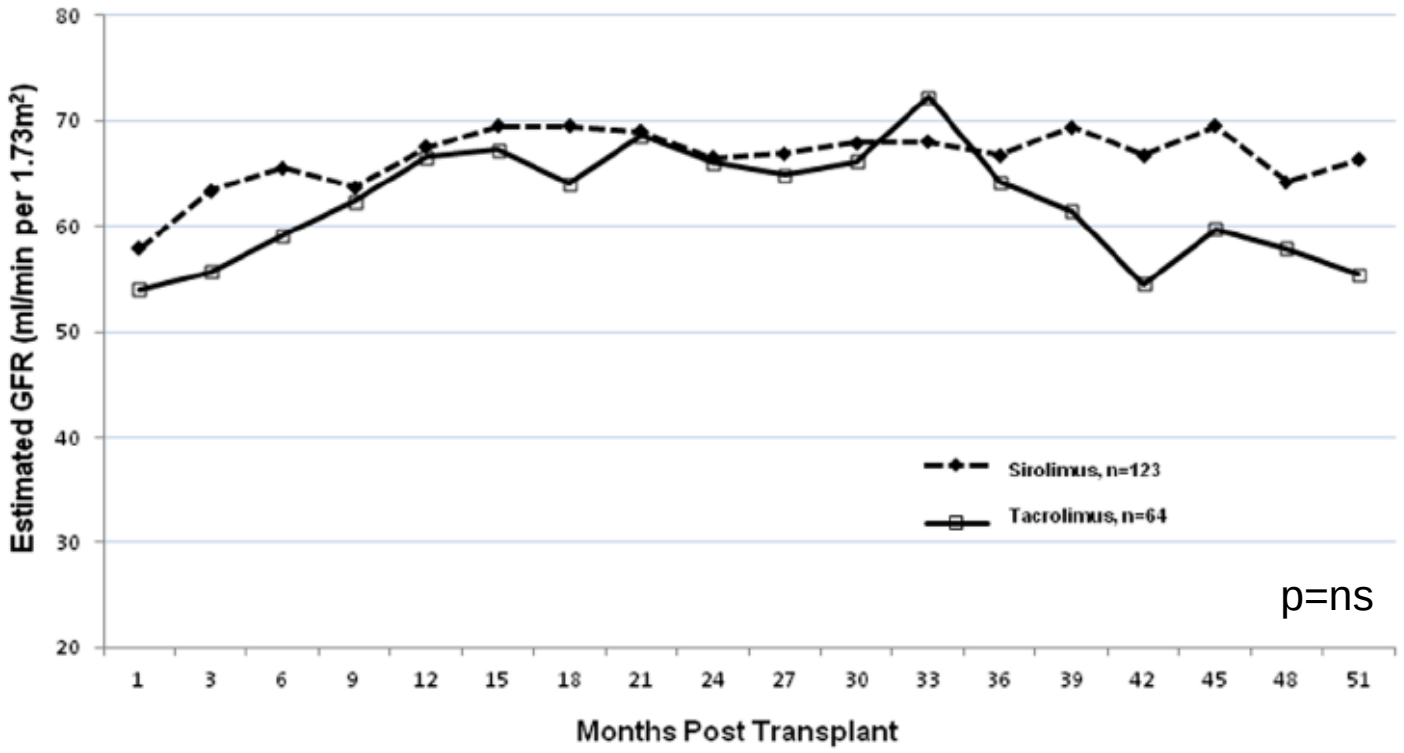

No difference in DSA

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doi: 10.1111/ajt.12481

Planned Randomized Conversion From Tacrolimus to Sirolimus-Based Immunosuppressive Regimen in *De Novo* Kidney Transplant Recipients

H. T. Silva Jr.[1,*], C. R. Felipe[1], V. D. Garcia[2], E. D. Neto[3], M. A. Filho[4], F. L. C. Contieri[5], D. D. B. M. de Carvalho[6] and J. O. M. Pestana[1]

- RCT, 297 KTx
- Basiliximab, MPS, Pred, Tac
- Conv to Rapa at 3 mo vs. continue on Tac

Table 3: Key efficacy and safety parameters

Parameters n, (%)	SRL (n = 97)	TAC (n = 107)	TACex (n = 79)
Clinical rejection	2 (2.1)	3 (2.8)	5 (6.3)
BCAR	21(21.6)	21 (19.6)	32 (40.5)
Borderline	5 (5.1)	4 (3.7)	6 (7.6)
IA	8 (8.2)	12 (11.2)	9 (11.4)
IB	5 (5.1)	3 (2.8)	2 (2.5)
IIA	2 (2.1)	1 (0.9)	12 (15.2)
IIB	1 (1.0)	1 (0.9)	3 (3.8)
Treated acute rejection	13 (14.4)	5 (4.8)	10 (12.7)
4–24 months		p = 0.047	

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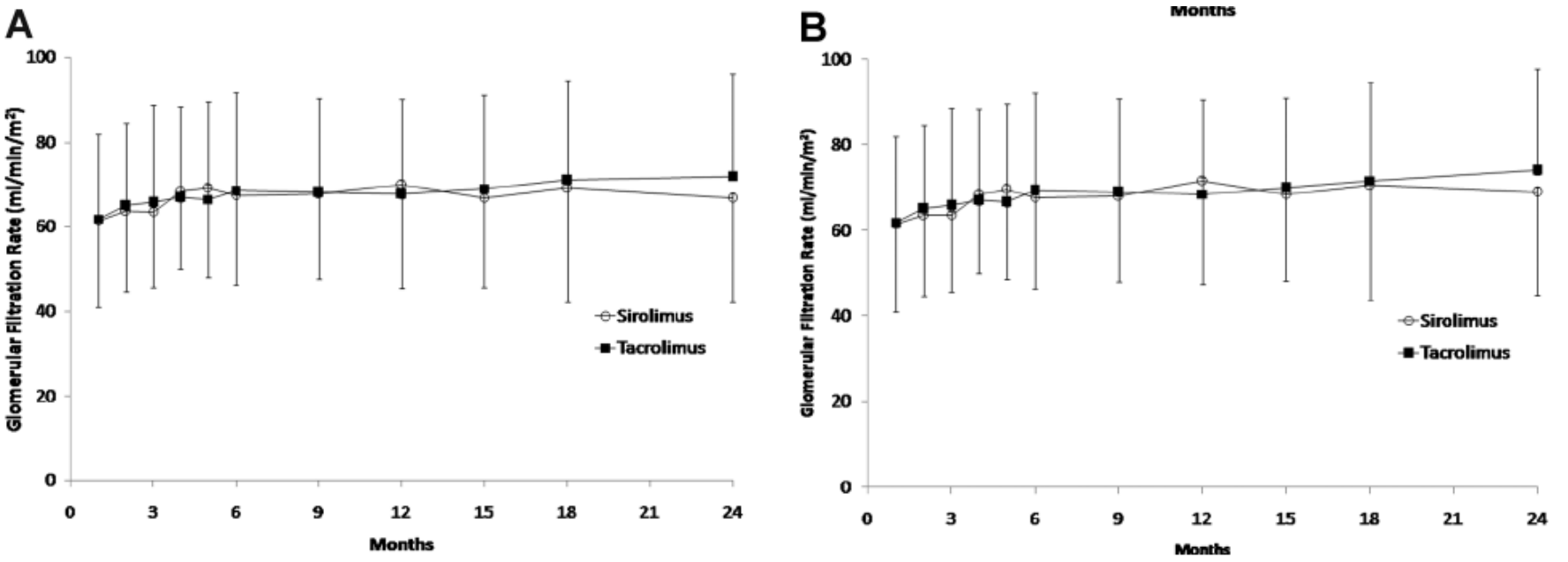

Figure 2: Mean (± standard deviation) estimated glomerular filtration rate (eGFR; four-variable MDRD formula) for the sirolimus and tacrolimus groups in the intention-to-treat (A) and on-therapy population (B).

P/Cr at 2-yrs

- Tac 0.15±0.53
- Rapa 0.36±0.59 (P=0.03)

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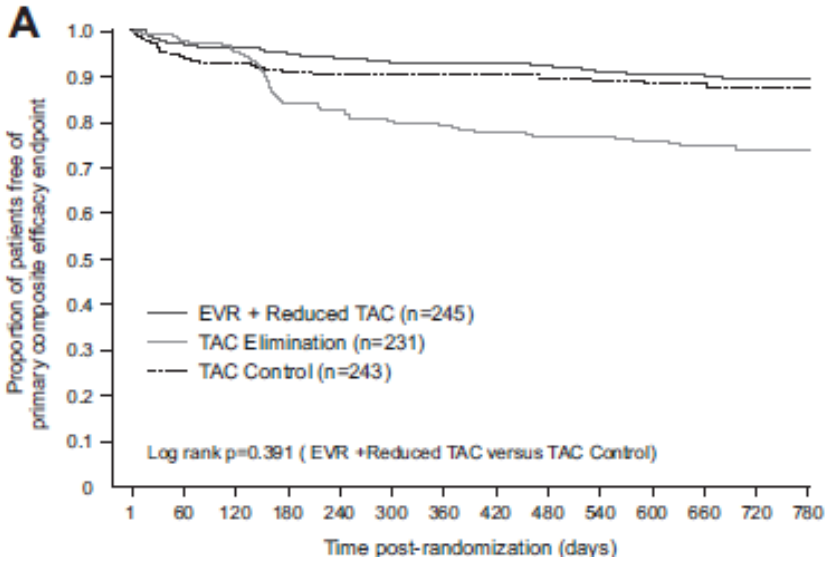
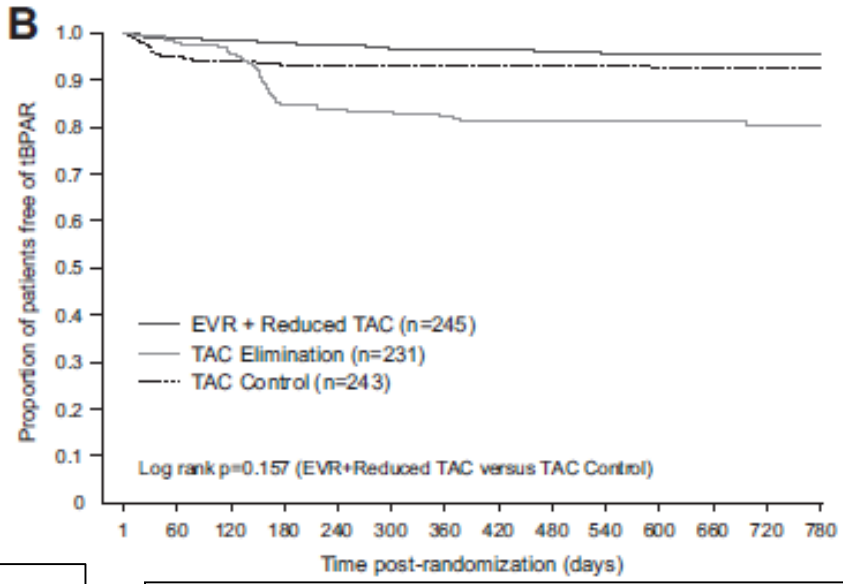
doi: 10.1002/ajt.12280

Renal Function at Two Years in Liver Transplant Patients Receiving Everolimus: Results of a Randomized, Multicenter Study

F. Saliba[1,*], P. De Simone[2], F. Nevens[3], L. De Carlis[4], H. J. Metselaar[5], S. Beckebaum[6,7], S. Jonas[8], D. Sudan[9], L. Fischer[10], C. Duvoux[11], K. D. Chavin[12], B. Koneru[13], M. A. Huang[14], W. C. Chapman[15], D. Foltys[16], G. Dong[17], P. M. Lopez[18], J. Fung[19] and G. Junge[18], for the H2304 Study Group[†]

Figure 2: Kaplan–Meier plots for the proportion of patients free from (A) the primary composite efficacy endpoint of tBPAR, graft loss or death and (B) tBPAR (ITT population).





Conversion to EVR at 1 month post-Tx

- MPA local practice
- Prednisone (at least 6 months)
- EVR 1 mg bid (3-8 ng/ml)
- Reduced Tac 3-5 ng/ml
- Tac control 8-12 ng/ml and 6-10 ng/ml > month 4

Primary efficacy composite end-point

- BPAR
- Graft loss
- Death

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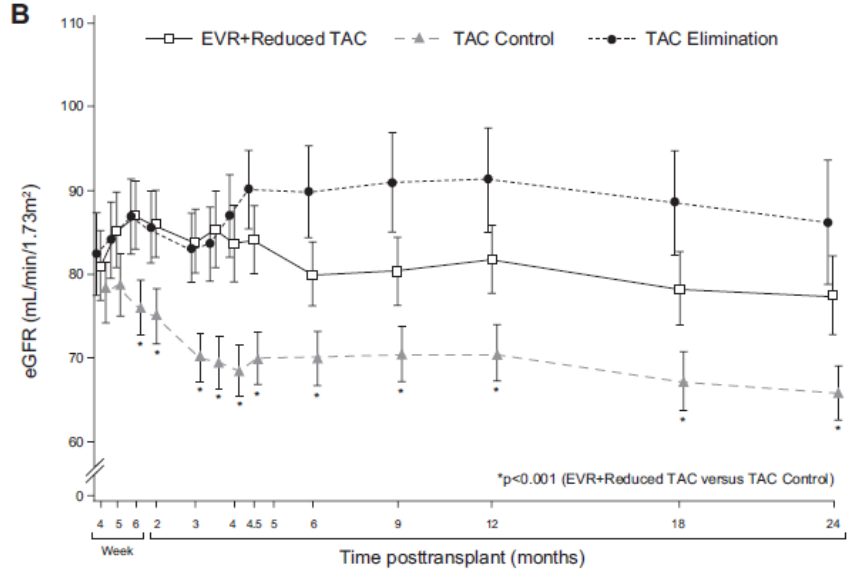
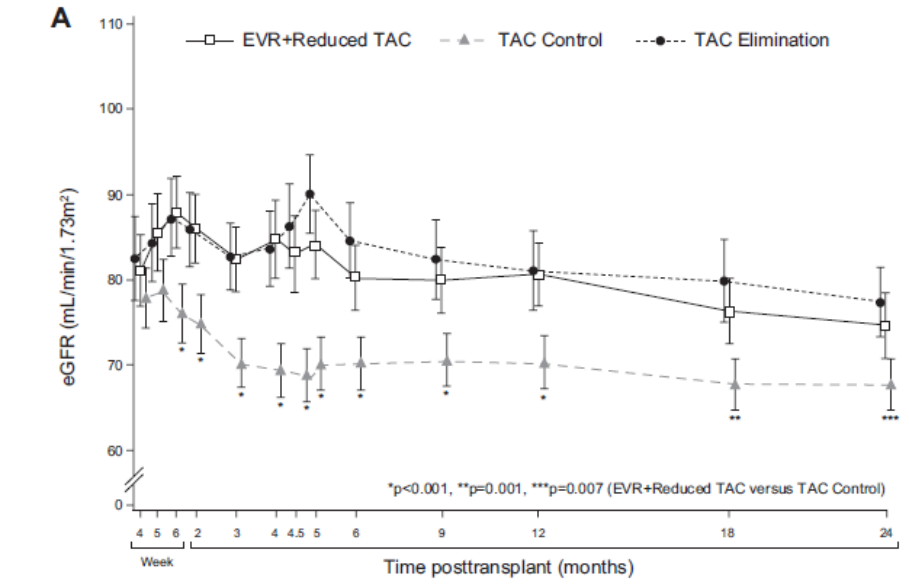
Figure 3: eGFR (MDRD4) according to treatment group (A) ITT population (B) on-treatment patients. Values are shown as mean and 95% CI.



No. patients	W4	M2	M3	M4	M4.5	M5	M6	M9	M12	M18	M24
TAC Elimination	218	212	190	163	138	154	136	106	195	67	57
EVR+Reduced TAC	233	216	205	183	166	188	177	179	216	149	124
TAC Control	227	225	218	191	177	197	193	188	209	163	147



No. patients	W4	M2	M3	M4	M4.5	M5	M6	M9	M12	M18	M24
TAC Elimination	218	218	213	170	148	163	202	196	195	175	163
EVR+Reduced TAC	233	223	221	189	168	191	204	216	216	203	184
TAC Control	227	227	229	192	177	197	218	215	209	197	186

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Table 2: Primary efficacy endpoint and selected secondary efficacy endpoints at month 24 (ITT population)

	EVR + Reduced TAC, N = 245	TAC Control, N = 243	TAC Elimination, N = 231	EVR + Reduced TAC vs. TAC Control	
				Difference (97.5% CI)	p value[1]
Primary efficacy endpoint[2,3]					
n	24	29	55		–
KM incidence rate, %	10.3	12.5	26.0	−2.2 (−8.8, 4.4)	0.452
Secondary end points					
Graft loss or death	17 (7.3)	14 (6.2)	18 (8.6)	1.1 (−4.2, 6.4)	0.638
Graft loss, n (KM %)	9 (3.9)	7 (3.2)	6 (2.8)	0.8 (−3.2, 4.7)	0.661
Death, n (KM %)	12 (5.2)	10 (4.4)	15 (7.3)	0.8 (−3.7, 5.2)	0.701
tBPAR, n (KM %)[4]	11 (4.8)	18 (7.7)	42 (19.9)	−2.9 (−7.9, 2.2)	0.203
BPAR, n (KM %)[4]	14 (6.1)	30 (13.3)	52 (26.4)	−7.2 (−13.5, −0.9)	0.010

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Association Between Steroid Dosage and Death With a Functioning Graft After Kidney Transplantation

G. Opelz* and B. Döhler

Department of Transplantation Immunology, University of Heidelberg, Heidelberg, Germany

- 41953 KTx
- 1995 - 2010

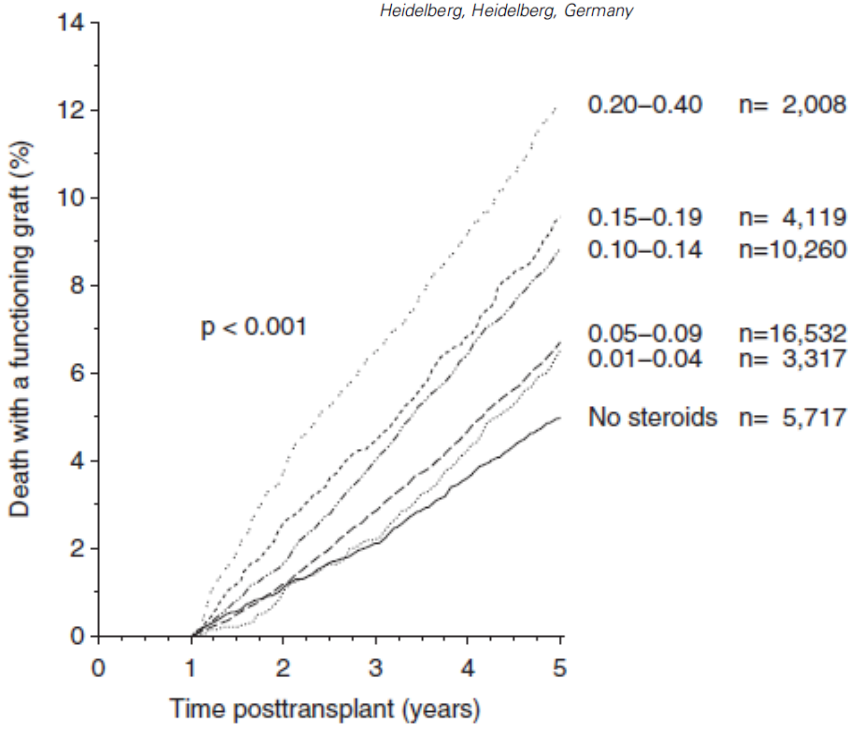

Figure 1: Cumulative incidence of death with a functioning graft during years 2–5 posttransplant in kidney transplant recipients according to dose of maintenance steroids administered at year 1. Steroid dose is indicated as mg/kg/day. Log rank $p < 0.001$.

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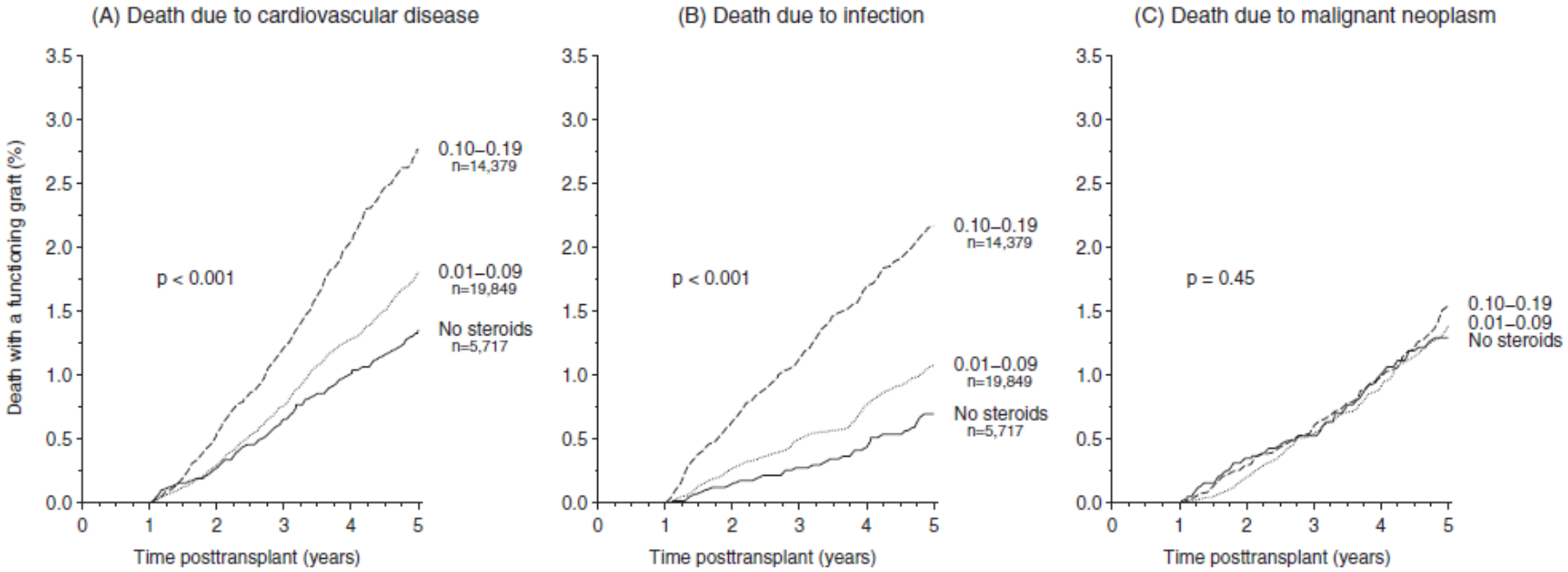

Figure 3: Death due to (A) cardiovascular disease (B) infection and (C) malignant neoplasm during years 2–5 posttransplant in kidney transplant patients with a functioning graft according to steroid dose (mg/kg/day) at year 1 posttransplant.

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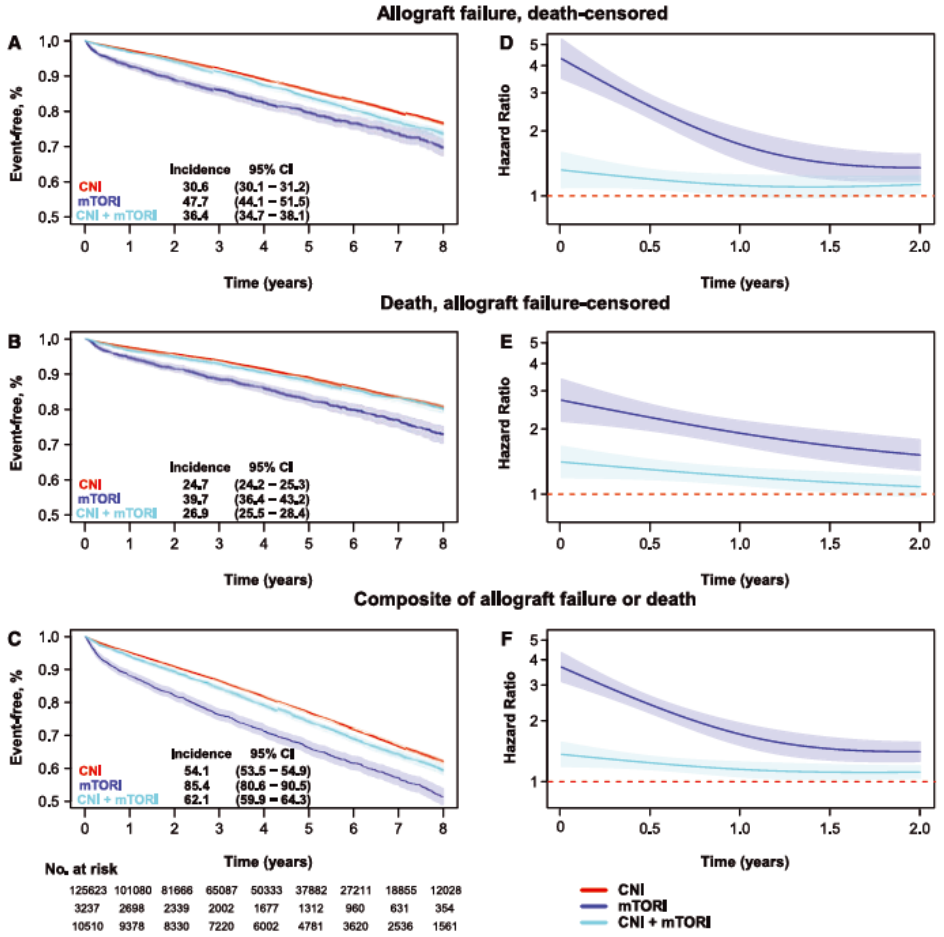
doi: 10.1111/j.1600-6143.2012.04281.x

Inhibitors of mTOR and Risks of Allograft Failure and Mortality in Kidney Transplantation

T. Isakova[a,†], H. Xie[b,†], S. Messinger[b], F. Cortazar[c], J. J. Scialla[a], G. Guerra[a], G. Contreras[a], D. Roth[a], G. W. Burke III[d], M. Z. Molnar[e,f,g], I. Mucsi[g,h,i] and M. Wolf[a,*]

- 139370 KTx (1999-2010)
- USRDS
- Use of mTOR (n=3237)
- 1st 2 yrs (vs. CNI)
- Years 2-8 (vs. CNI)



Valle de la Luna – San Juan, Argentina

Outline

- Donor source / organ preservation
- Immunosuppression
- Complications

Imaging

American Journal of Transplantation 2013; 13: 2395–2401
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doi: 10.1111/ajt.12385

Role of Pretransplant Echocardiographic Evaluation in Predicting Outcomes Following Liver Transplantation

216 LTx (2007-2010)
Pre-Tx 2-dimensional/Doppler echo

L. Kia[1], S. J. Shah[2], E. Wang[3,4], D. Sharma[1], S. Selvaraj[2], C. Medina[1], J. Cahan[4], H. Mahon[4] and J. Levitsky[4,5,*]

Northwestern University, Chicago, IL

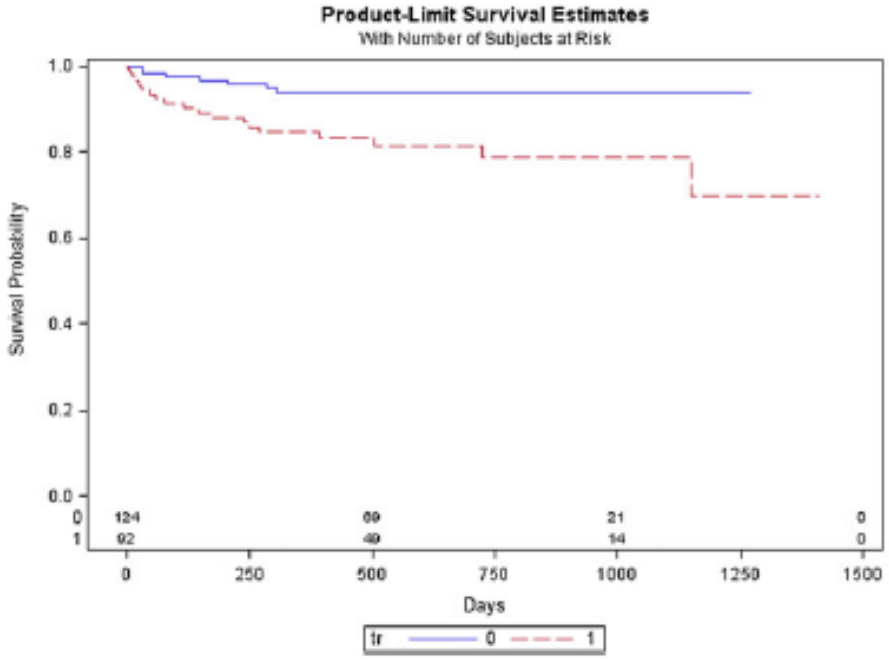

Figure 1: Patient survival following liver transplantation based on the presence or absence of ≥mild tricuspid regurgitation (log rank test, p = 0.0018), where 0 = none or trace TR and 1 = mild, moderate or severe TR.

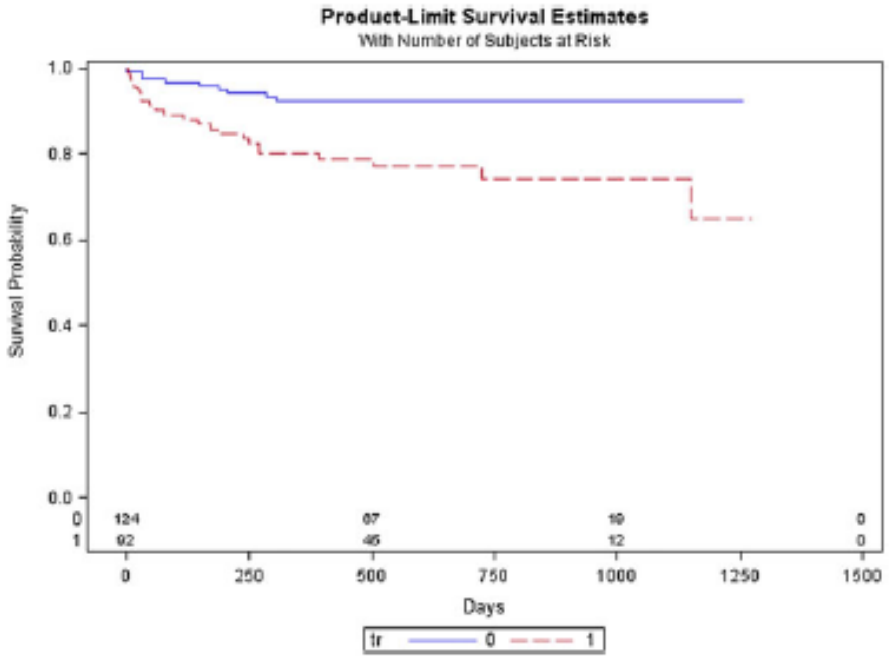

Figure 2: Graft survival following liver transplantation based on the presence or absence of ≥mild tricuspid regurgitation (log rank test, p = 0.0006), where 0 = none or trace TR and 1 = mild, moderate or severe TR.

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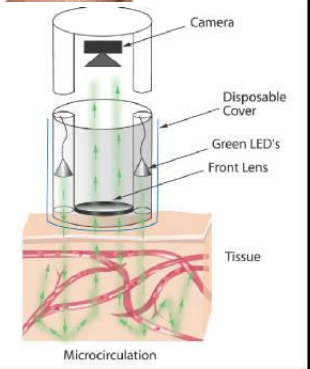
doi: 10.1111/ajt.12182

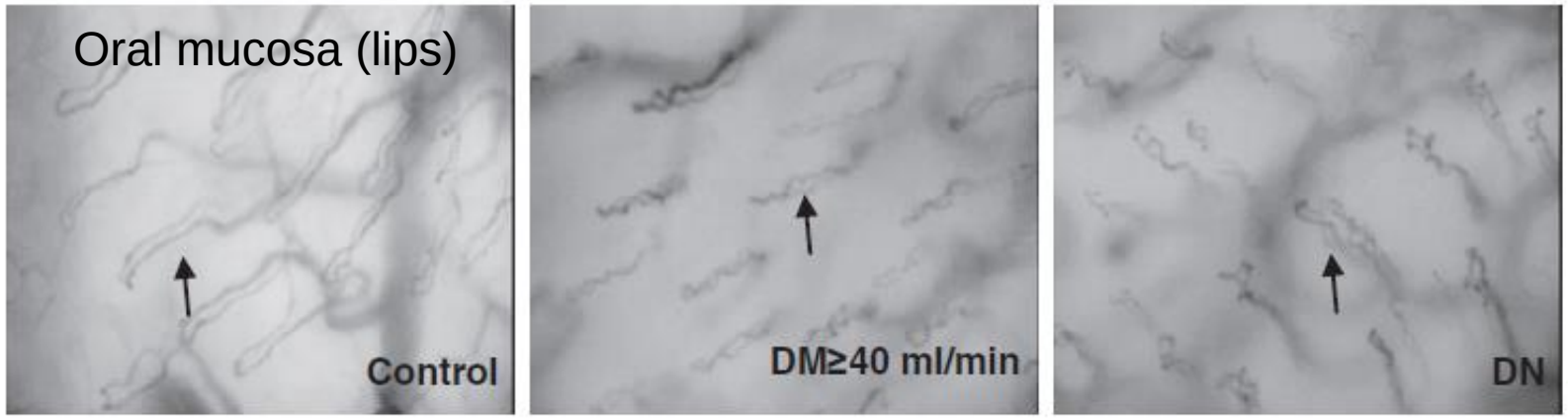
Microvascular Damage in Type 1 Diabetic Patients Is Reversed in the First Year After Simultaneous Pancreas–Kidney Transplantation

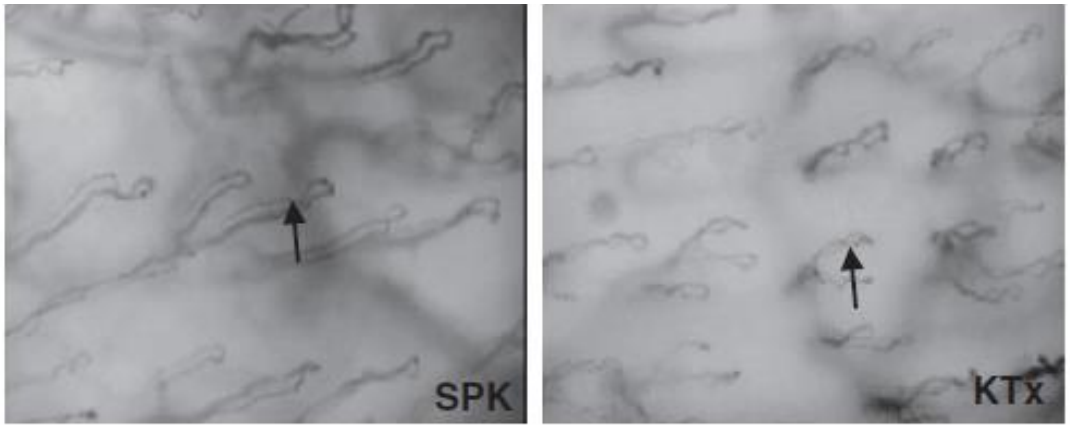
M. Khairoun[a,*], E. J. P. de Koning[a], B. M. van den Berg[a,b], E. Lievers[a], H.C. de Boer[a,b], A. F. M. Schaapherder[c], M. J. K. Mallat[a], J. I. Rotmans[a,b], P. J. M. van der Boog[a], A. J. van Zonneveld[a,b], J. W. de Fijter[a], T. J. Rabelink[a,b] and M. E. J. Reinders[a,b]

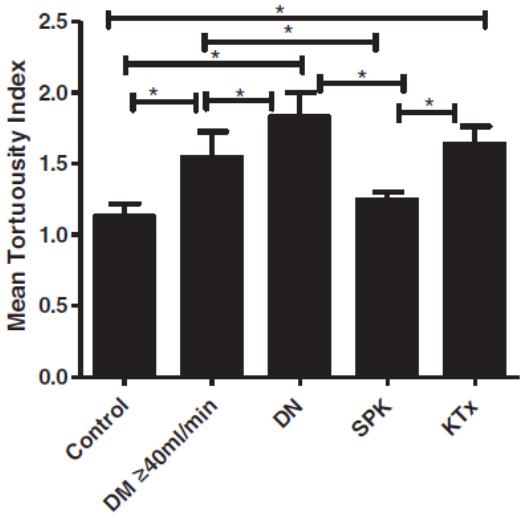
[a]Department of Nephrology, [b]Einthoven Laboratory for Experimental Vascular Research and [c]Department of Surgery, Leiden University Medical Center, the Netherlands.

Sidestreamdarkfield
Noninvasive tool to visualize human microcirculation









- Normalization of Angiopoietin-2 / Angiopoietin-1 ratio
- Normalization of soluble thrombomodulin

Antibodies

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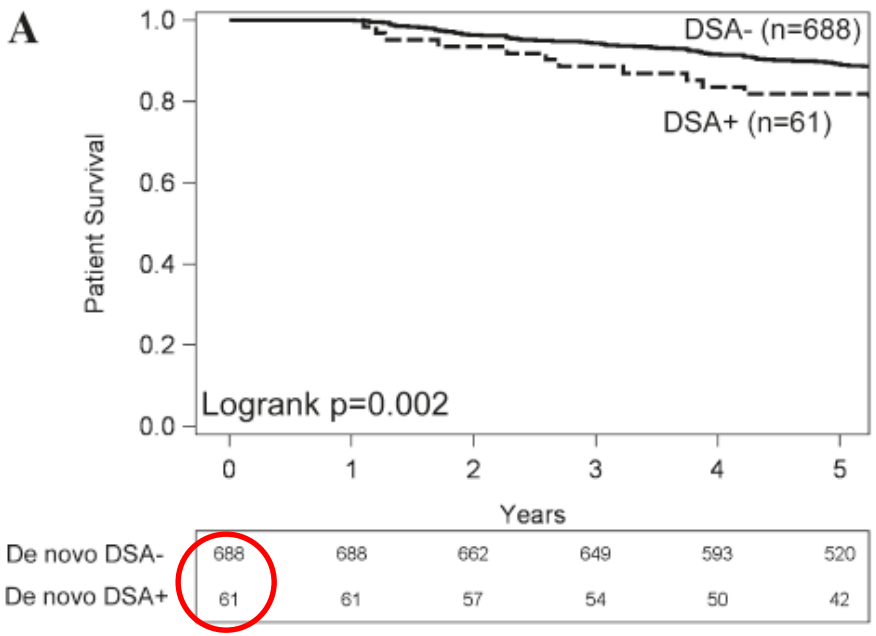
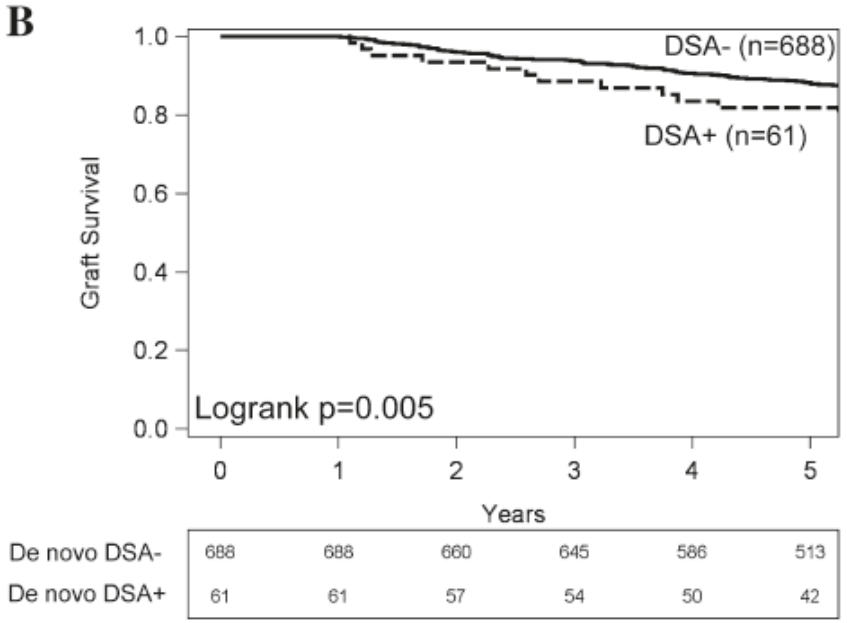
De Novo Donor-Specific HLA Antibodies Decrease Patient and Graft Survival in Liver Transplant Recipients

H. Kaneku[1,*], J. G. O'Leary[2], N. Banuelos[3], L. W. Jennings[2], B. M. Susskind[2], G. B. Klintmalm[2] and P. I. Terasaki[1,3]

[1]University of California, Los Angeles, Los Angeles, CA
[2]Annette C. & Harold C. Simmons Transplant Institute, Baylor University Medical Center, Dallas, TX





8.1%

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doi: 10.1111/ajt.12147

Class II Alloantibody and Mortality in Simultaneous Liver–Kidney Transplantation

J. G. O'Leary[a,*], H. M. Gebel[b], R. Ruiz[a], R. A. Bray[b], J. D. Marr[a], X. J. Zhou[c], S. M. Shiller[c], B. M. Susskind[a], A. D. Kirk[d] and G. B. Klintmalm[a]

[a]Annette C. & Harold C. Simmons Transplant Institute, Baylor University Medical Center, Dallas, TX
[b]Department of Pathology and Laboratory Medicine, Emory University, Atlanta, GA

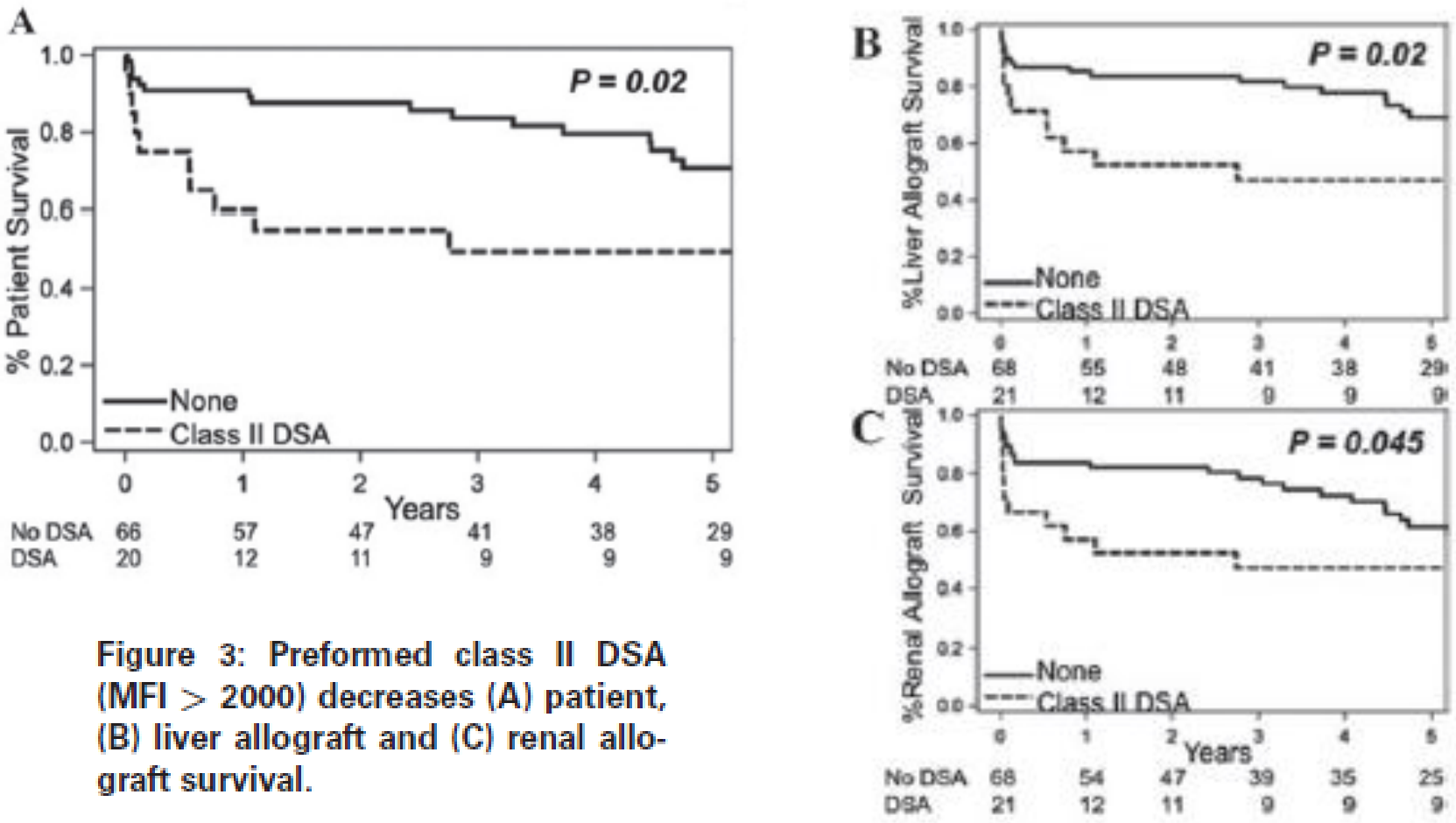

Figure 3: Preformed class II DSA (MFI > 2000) decreases (A) patient, (B) liver allograft and (C) renal allograft survival.

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Donor-Specific HLA Antibodies in a Cohort Comparing Everolimus With Cyclosporine After Kidney Transplantation

L. Liefeldt[a,†,*], S. Brakemeier[a,†], P. Glander[a], J. Waiser[a], N. Lachmann[b], C. Schönemann[b], B. Zukunft[a], P. Illigens[a], D. Schmidt[a], K. Wu[a,c], B. Rudolph[c], H.-H. Neumayer[a] and K. Budde[a]

[a]Department of Nephrology, Charité Campus Mitte, Charité - Universitätsmedizin Berlin, Berlin, Germany

- 2 RCT, 127 KTx
- CsA vs. EVL at 3 months

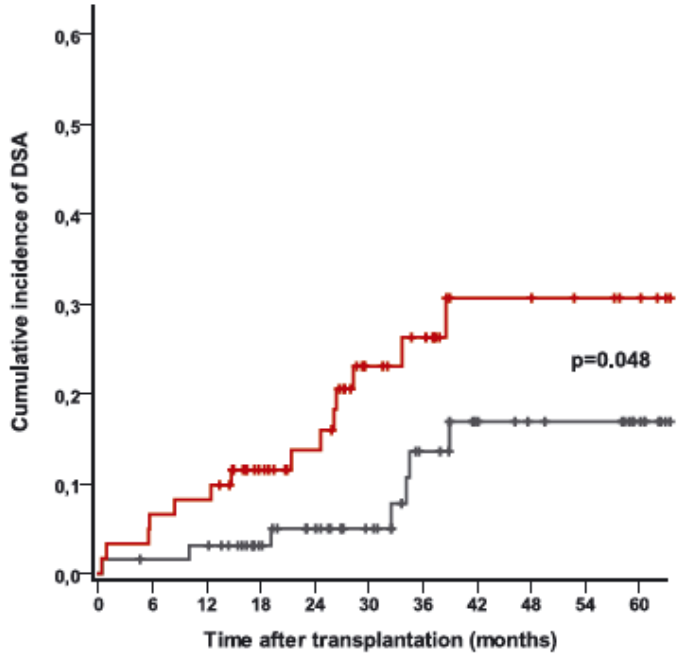

Figure 1: Cumulative incidence plot of DSA-detection in 61 patients (red) with everolimus-based immunosuppression compared to 66 patients (black) with cyclosporine-treatment (log-rank: p = 0.048).

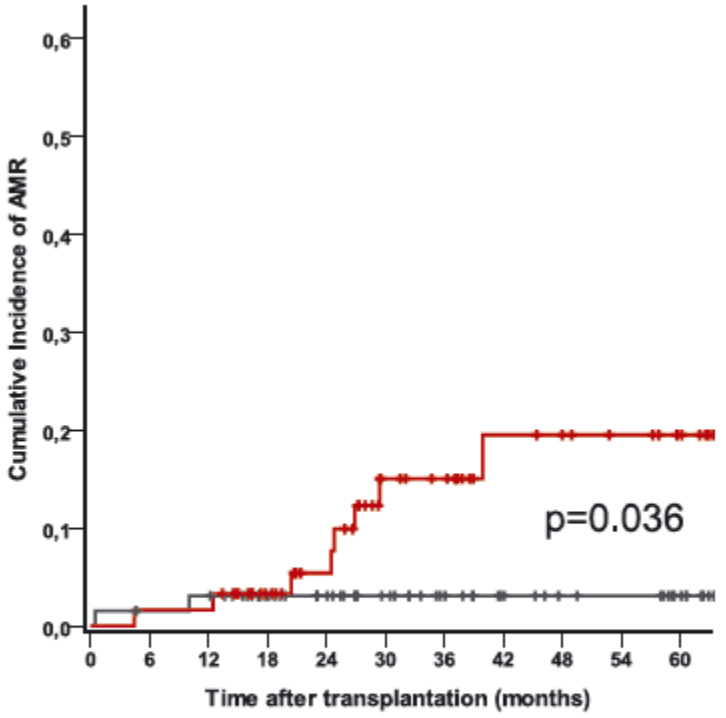

Figure 2: Cumulative incidence plot of first antibody-mediated rejection in 61 patients (red) with everolimus-based immunosuppression compared to 66 patients (black) with cyclosporine-treatment (log-rank: p = 0.036).

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Microarray Diagnosis of Antibody-Mediated Rejection in Kidney Transplant Biopsies: An International Prospective Study (INTERCOM)

P. F. Halloran[1,2,*], A. B. Pereira[1,3], J. Chang[1], A. Matas[4], M. Picton[5], D. De Freitas[5], J. Bromberg[6], D. Serón[7], J. Sellarés[7], G. Einecke[8] and J. Reeve[1,9]

[1]Alberta Transplant Applied Genomics Center, University of Alberta, Edmonton, AB, Canada
[2]Department of Medicine, Division of Nephrology and Transplant Immunology, University of Alberta, Edmonton, AB, Canada

- 6 centers
- 264 pts
- 300 KTx Bx

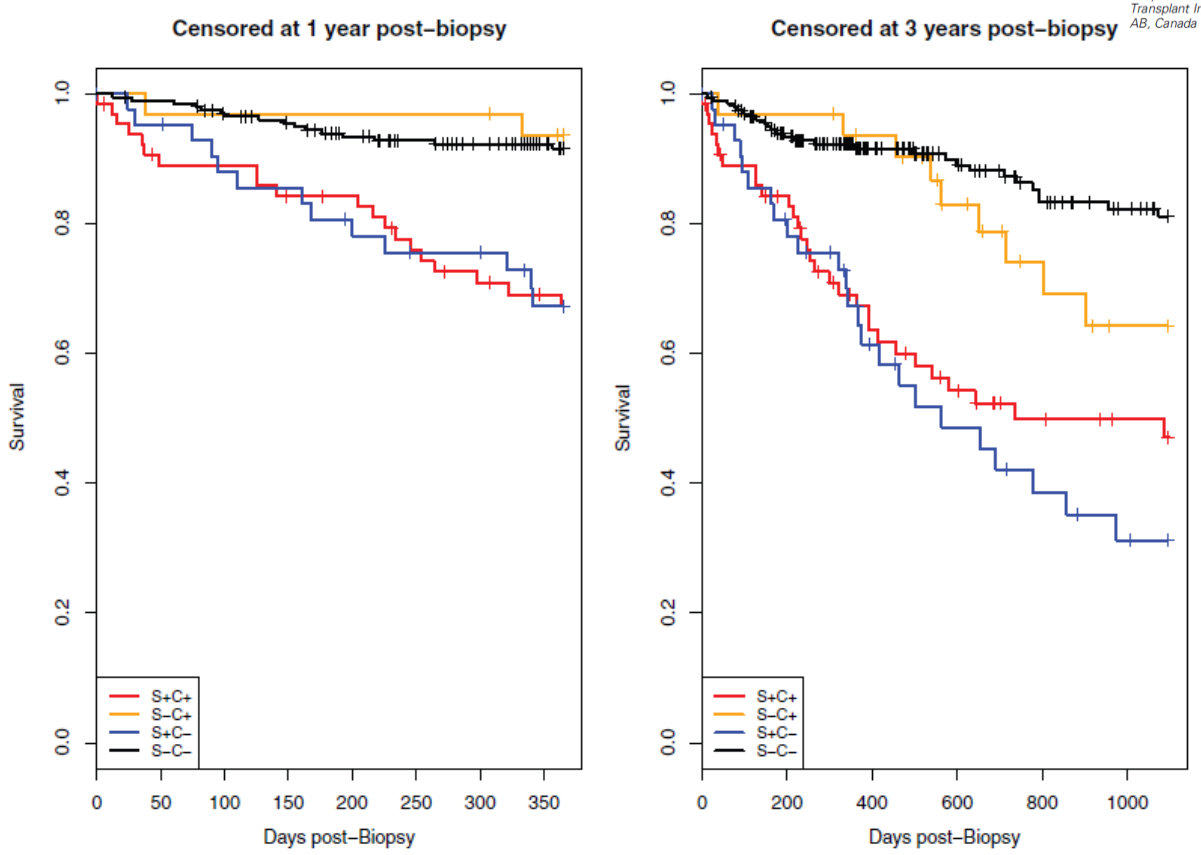

Figure 2: Kaplan–Meier graft survival curves. Based on one random biopsy per patient in the patients receiving late (>1-year posttransplantation) biopsies in INT300. The ABMR score is dichotomized into S^+ (>0.2) and S^- (≤0.2), as is the conventional assessment of ABMR/mixed as C^+ and C^- by the local center. ABMR, antibody-mediated rejection; INT300, 300 new indication biopsies from consenting subjects in six kidney transplant programs from five countries.

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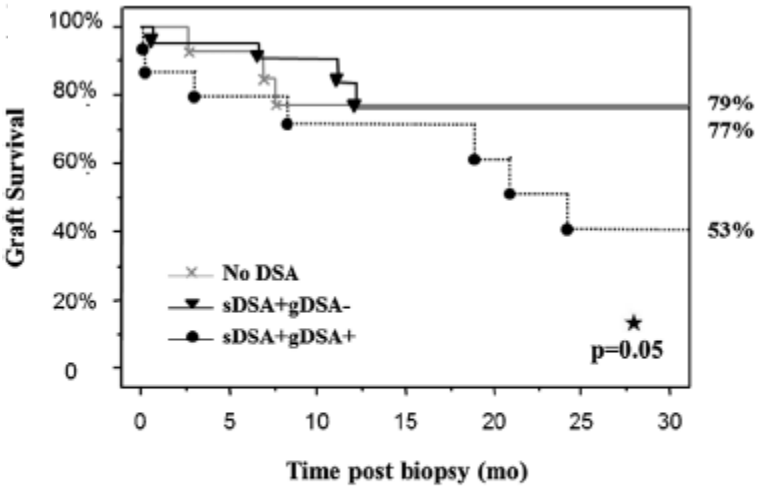
doi: 10.1111/ajt.12438

Kidney Intragraft Donor-Specific Antibodies as Determinant of Antibody-Mediated Lesions and Poor Graft Outcome

T. Bachelet[1,2,3], L. Couzi[1,3], S. Lepreux[4], M. Legeret[1], G. Pariscoat[2], G. Guidicelli[2], P. Merville[1,3] and J.-L. Taupin[2,3,*]

[1]Department of Nephrology, Dialysis and Transplantation, CHU Bordeaux, Bordeaux, France
[2]Laboratory of Immunology and Immunogenetics, CHU Bordeaux, Bordeaux, France

- 51 KTx Bx for cause
- Anti-HLA single Ag flow beads
- sDSA 37/51 pts
- gDSA 15/51 pts
- gDSA correlated with
  - Microcirculation lesions
  - C4d+
  - Worse short term outcome



Number at risk	D0	M6	M12	M18	M24	M30
sDSA+gDSA+	15	12	8	7	4	2
sDSA+gDSA-	22	21	14	9	6	5
No DSA	14	13	11	6	6	2

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doi: 10.1111/ajt.12531

Postanastomotic Transplant Renal Artery Stenosis: Association With *De Novo* Class II Donor-Specific Antibodies

M. Willicombe[1,*], B. Sandhu[1], P. Brookes[2], W. Gedroyc[3], N. Hakim[1], M. Hamady[3], P. Hill[1], A. G. McLean[1], S. Moser[3], V. Papalois[1], P. Tait[3], M. Wilcock[1] and D. Taube[1]

[1]Imperial College Kidney and Transplant Centre, Hammersmith Hospital, London, UK

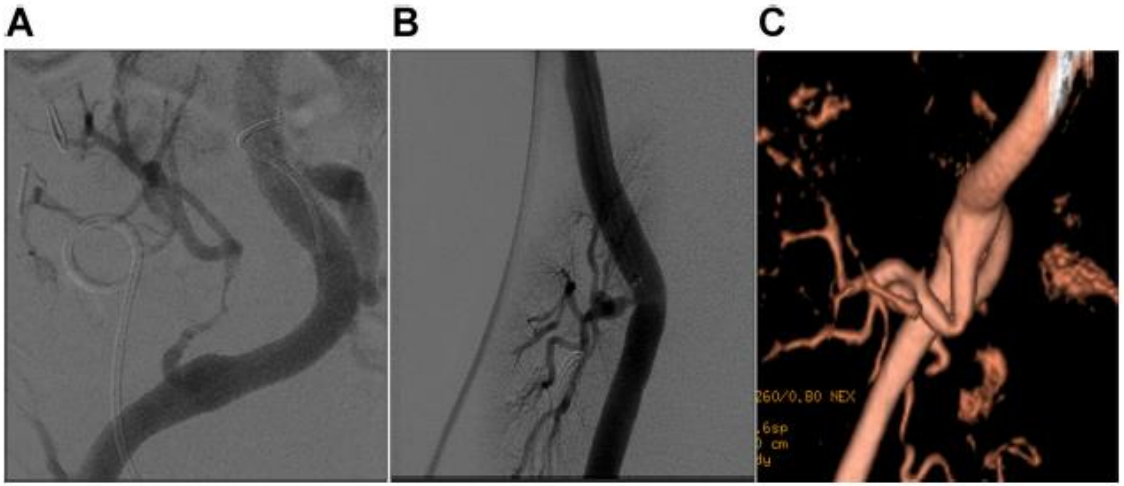

Figure 4: Examples of different anatomical subtypes of transplant renal artery stenoses. (A) Postanastomotic, diffuse. (B) Anastomotic. (C) Bend/kink.

<u>Postanastomotic RAS</u>
- Diabetic pts
- Older pts
- Deceased/older donors

<u>Anastomotic RAS</u>
- Living donors

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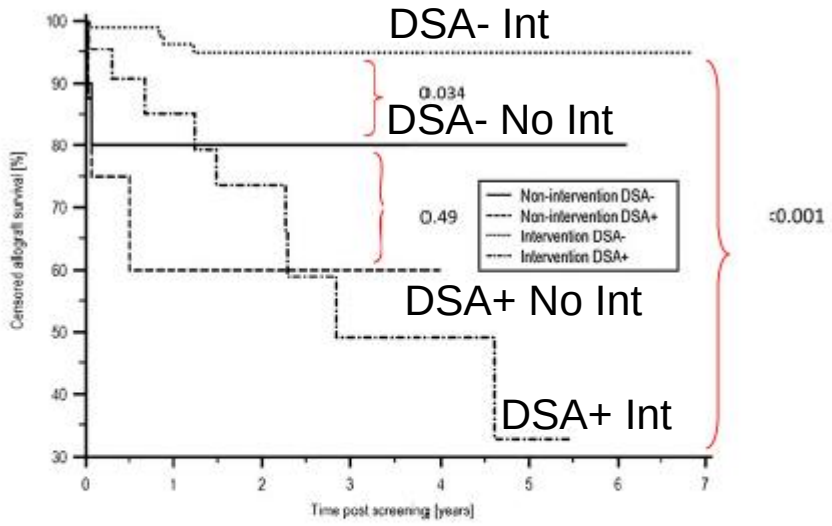

DSA-no intervention	10	6	6	4	3	2	1	0
DSA+ no intervention	8	4	3	2	0	0	0	0
DSA- intervention	97	67	49	33	18	11	6	1
DSA+ intervention	22	15	12	4	2	0	0	0

Post-anastomotic RAS vs. No RAS

- Rej w/arteritis (OR 4.83, P=0.0095)
- Rej w/capillaritis (OR 3.03, P=0.03)
- De novo class II DSA (OR 4.41, P<0.001)

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doi: 10.1111/ajt.12395

Higher Risk of Kidney Graft Failure in the Presence of Anti-Angiotensin II Type-1 Receptor Antibodies

M. Taniguchi[1,*], L. M. Rebellato[2], J. Cai[1], J. Hopfield[1], K. P. Briley[2], C. E. Haisch[3], P. G. Catrou[2], P. Bolin[4], K. Parker[4], W. T. Kendrick[5], S. A. Kendrick[5], R. C. Harland[3,4] and P. I. Terasaki[1]

[1]Terasaki Foundation Laboratory, Los Angeles, CA

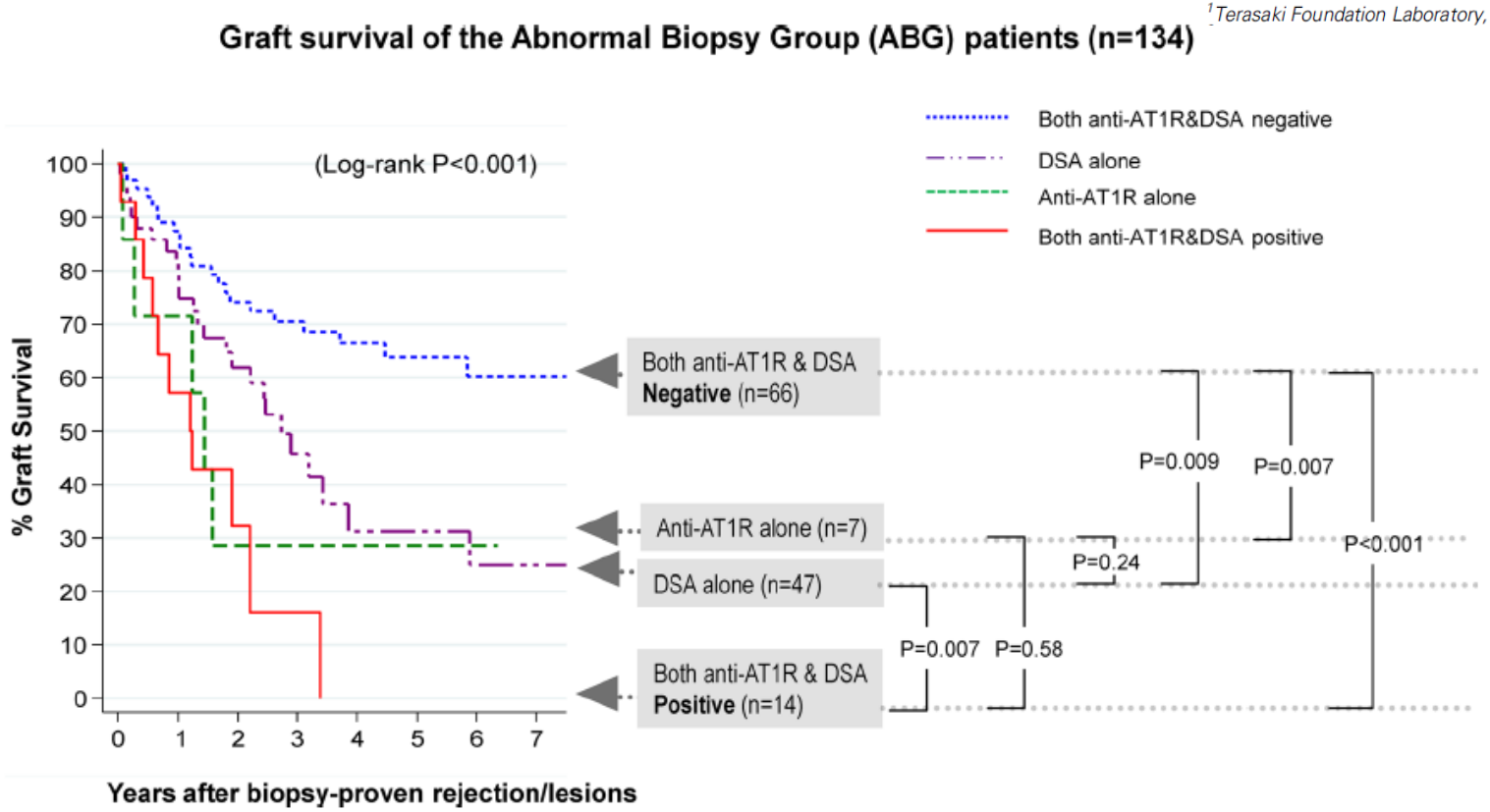

Figure 5: Kaplan–Meier graft survival based on DSA and anti-AT1R. In the ABG, patients with neither DSA nor AT1R antibodies had the best graft survival. In contrast, those who developed both DSA and anti-AT1R had the lowest survival rate (log-rank $p < 0.001$). The survival in the presence of both DSA and AT1R antibodies was significantly lower than among patients with DSA alone ($p = 0.007$).

Infections

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doi: 10.1111/ajt.12401

What Is the Impact of Hypogammaglobulinemia on the Rate of Infections and Survival in Solid Organ Transplantation? A Meta-Analysis

D. F. Florescu[1,2,*], A. C. Kalil[1], F. Qiu[3], C. M. Schmidt[4] and U. Sandkovsky[1]

[1]Infectious Diseases Division, University of Nebraska Medical Center, Omaha, NE

- 18 studies (n=1756)
- LuTx 63%, HTx 49%, KTx 40%, LTx 16%
- IgG <700 mg/dL: 45%
- Mild hypo-gamma (400-700 mg/dL): 39%
- Severe hypo-gamma (<400 mg/dL): 15%

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What Is the Impact of Hypogammaglobulinemia on the Rate of Infections and Survival in Solid Organ Transplantation? A Meta-Analysis

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[1]Infectious Diseases Division, University of Nebraska Medical Center, Omaha, NE

- Severe hypo-gamma was associated with:
  - Mortality (OR 21.91, P=0.005)
  - Resp infection (OR 4.83, P=0.004)
  - CMV (OR 2.40, P=0.02)
  - Aspergillus (OR 8.19, P=0.0009)
  - Other fungal inf (OR 3.69, P=0.03)

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doi: 10.1111/ajt.12055

Hypocomplementemia in Kidney Transplant Recipients: Impact on the Risk of Infectious Complications

M. Fernández-Ruiz[a,*], F. López-Medrano[a], P. Varela-Peña[b], J. M. Morales[c], A. García-Reyne[a], R. San Juan[a], C. Lumbreras[a], D. Lora-Pablos[d,e], N. Polanco[c], A. Andrés[c], E. Paz-Artal[b] and J. M. Aguado[a]

[a]*Unit of Infectious Diseases, Instituto de Investigación Hospital "12 de Octubre" (i+12), Hospital Universitario "12 de Octubre," School of Medicine, Universidad Complutense, Madrid, Spain*

- 270 KTx

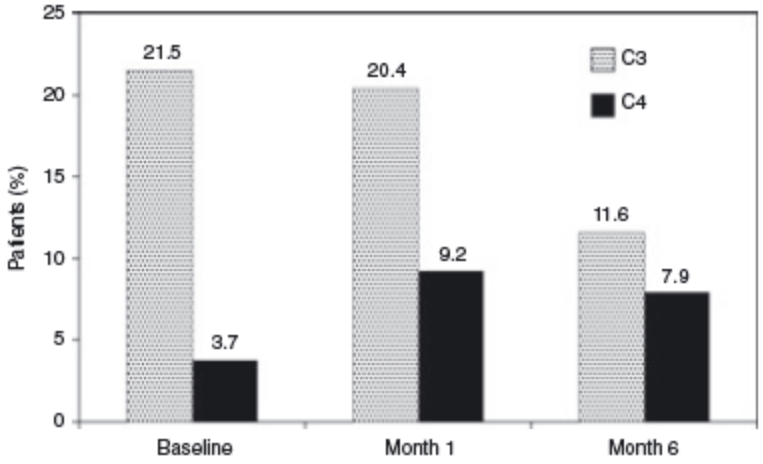

Figure 1: Prevalence of C3 and C4 hypocomplementemia throughout the first 6 months after KT (C3 levels: p = 0.015 for the difference between baseline and month 6; C4 levels: p = 0.004 for the difference between baseline and month 1).

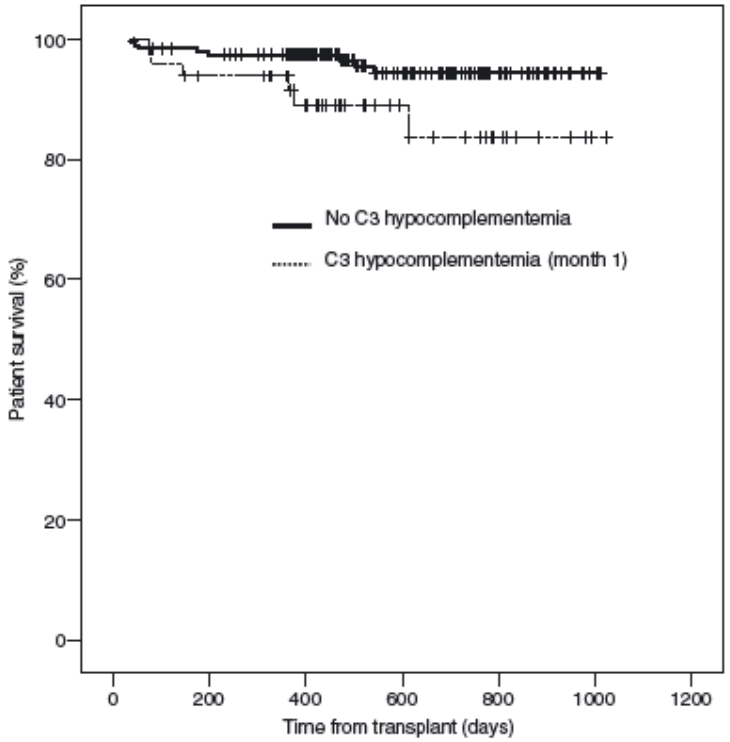

Figure 5: Kaplan–Meier curves of patient survival according to the presence of C3 hypocomplementemia at month 1 (log-rank test; p = 0.029).

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Hypocomplementemia in Kidney Transplant Recipients: Impact on the Risk of Infectious Complications

M. Fernández-Ruiz[a,*], F. López-Medrano[a], P. Varela-Peña[b], J. M. Morales[c], A. García-Reyne[a], R. San Juan[a], C. Lumbreras[a], D. Lora-Pablos[d,e], N. Polanco[c], A. Andrés[c], E. Paz-Artal[b] and J. M. Aguado[a]

[a]*Unit of Infectious Diseases, Instituto de Investigación Hospital "12 de Octubre" (i+12), Hospital Universitario "12 de Octubre", School of Medicine, Universidad Complutense, Madrid, Spain*

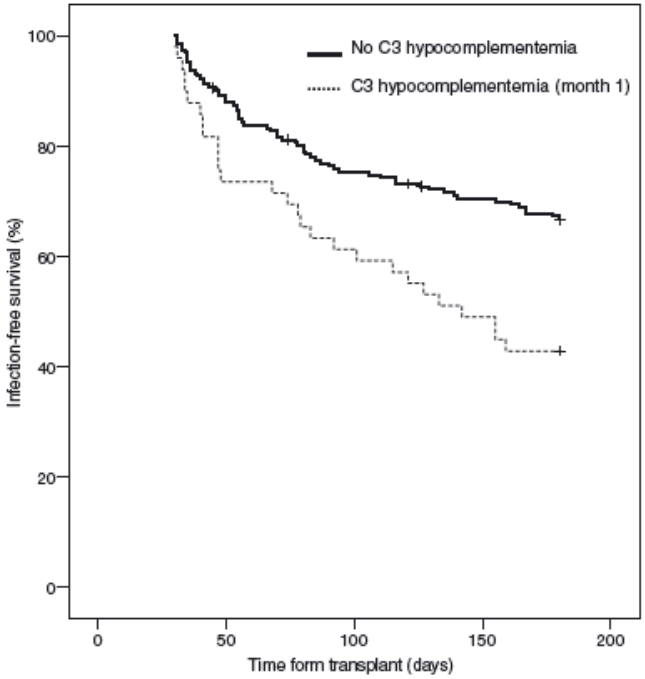

Figure 3: Kaplan–Meier curves of infection-free survival throughout the intermediate period (months 1–6) according to the presence of C3 hypocomplementemia at month 1 (log-rank test; p = 0.001).

- Type of infection
  - Any
  - Bacterial
  - Fungal
  - CMV, HSV or VZV
- Predictors
  - Age
  - Renal function
  - Time post-Tx

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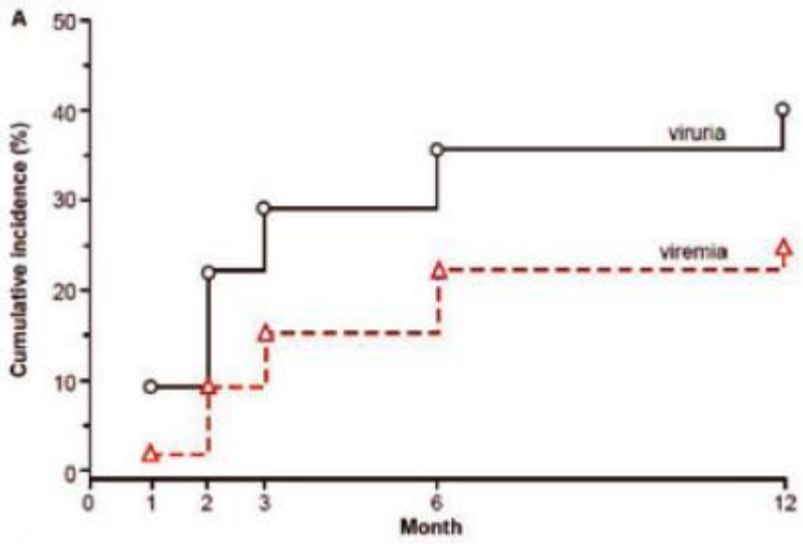
doi: 10.1111/j.1600-6143.2012.04320.x

Polyomavirus BK Replication in *De Novo* Kidney Transplant Patients Receiving Tacrolimus or Cyclosporine: A Prospective, Randomized, Multicenter Study

H. H. Hirsch[a,b,*,†], F. Vincenti[c], S. Friman[d], M. Tuncer[e], F. Citterio[f], A. Wiecek[g], E. H. Scheuermann[h], M. Klinger[i], G. Russ[j], M. D. Pescovitz[k] and H. Prestele[l]

- 682 KTx
- Basiliximab + Pred + MMF
- CsA vs Tac



- Predictors of viremia (6 mo)
  - CsA vs. Tac (OR 0.6, p=0.04)
  - Cum steroids (OR 1.19, P=0.017)

- Predictors of viremia (12 mo)
  - CsA vs Tac (OR 0.33, P=0.003)
  - Age (OR 1.41, P=0.013)
  - Male vs. female (OR 2.49, P=0.038)

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doi: 10.1111/ajt.12149

Randomized Controlled Trial of High-Dose Intradermal Versus Standard-Dose Intramuscular Influenza Vaccine in Organ Transplant Recipients

A. Baluch[a], A. Humar[a], D. Eurich[b], A. Egli[a], A. Liacini[c], K. Hoschler[d], P. Campbell[a], N. Berka[c], S. Urschel[a], L. Wilson[a] and D. Kumar[a,*]

[a]Alberta Transplant Institute, University of Alberta, Canada

- 212 SOT pts
- RCT: IM vs. ID influenza vaccine
- Higher response >6 months post-Tx
  - 53.2% vs. 19.2%, P=0.001
- De novo PRA in 24/212 (11.3%)

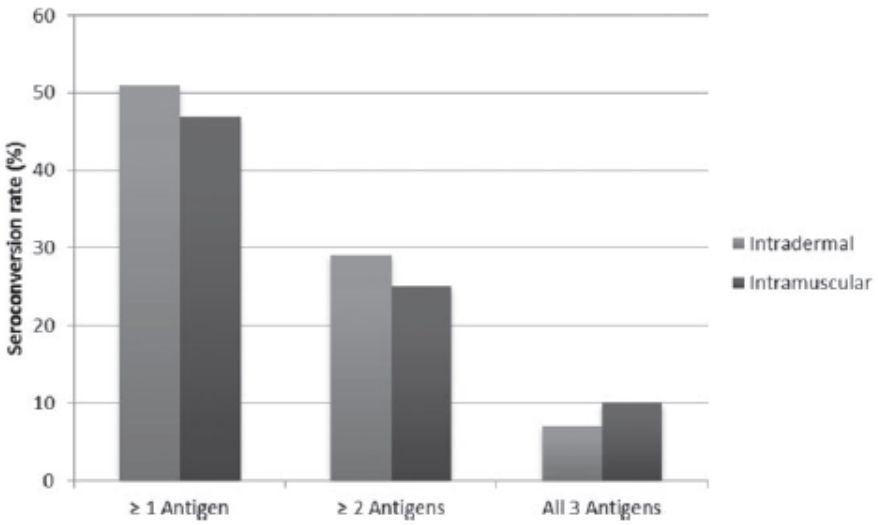


Figure 2: Seroconversion to at least one, two or all three antigens according to the vaccine type*. *No significant differences observed between the two groups.

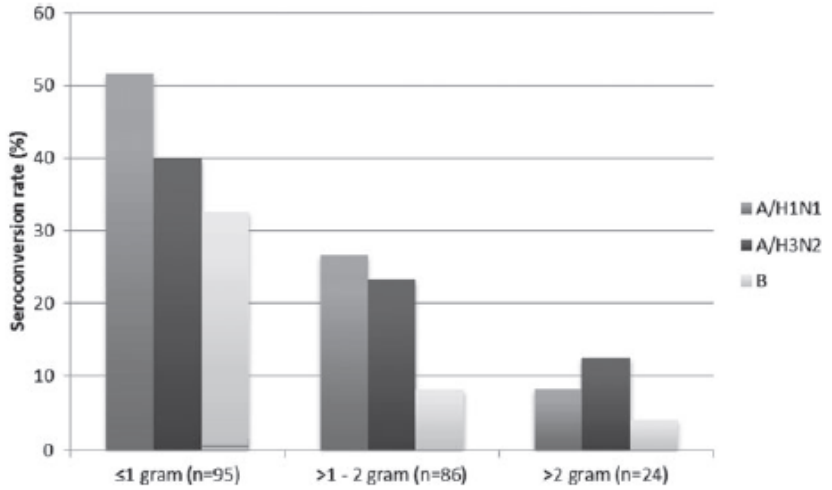


Figure 3: Effect of increasing daily doses of mycophenolate mofetil* on seroconversion to each influenza vaccine strain[§]. *Excludes seven patients receiving Myfortic instead of mycophenolate mofetil. [§]p-Values for dose-dependent vaccine response: $p < 0.001$, $p = 0.007$, $p < 0.001$ for A/H1N1, A/H3N2, B strains, respectively.

TRANSPLANT
INTERNATIONAL

Transplant International ISSN 0934-087

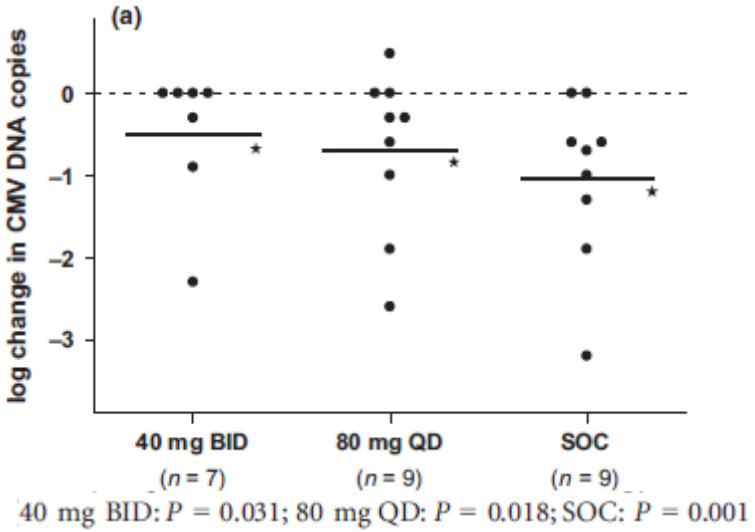
ORIGINAL ARTICLE

Preemptive treatment of Cytomegalovirus infection in kidney transplant recipients with letermovir: results of a Phase 2a study

Susanne Stoelben,[1] Wolfgang Arns,[2] Lutz Renders,[3] Jürgen Hummel,[4] Anja Mühlfeld,[5] Manfred Stangl,[6] Michael Fischereder,[7] Wilfried Gwinner,[8] Barbara Suwelack,[9] Oliver Witzke,[10] Michael Dürr,[11] Dietrich W. Beelen,[12] Detlef Michel,[13] Peter Lischka,[1] Holger Zimmermann,[1]* Helga Rübsamen-Schaeff[1]* and Klemens Budde[11]*

1 AiCuris GmbH & Co. KG, Wuppertal, Germany

- Letermovir targets viral (not human) terminase
- Key role in cleavage and packing of CMV progeny DNA into capsids
- n=27 (KTx, SPK, BMT)



- 14-day course
  - Letermovir 40 mg bid
  - Letermovir 80 mg qd
  - Standard of care
- No difference in side-effects

Obesity

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doi: 10.1111/ajt.12331

The Survival Benefit of Kidney Transplantation in Obese Patients

J. S. Gill[1,2,3], J. Lan[1], J. Dong[1], C. Rose[1], E. Hendren[1], O. Johnston[1] and J. Gill[1,2,*]

[a]Division Of Nephrology, University of British Columbia, Vancouver, Canada

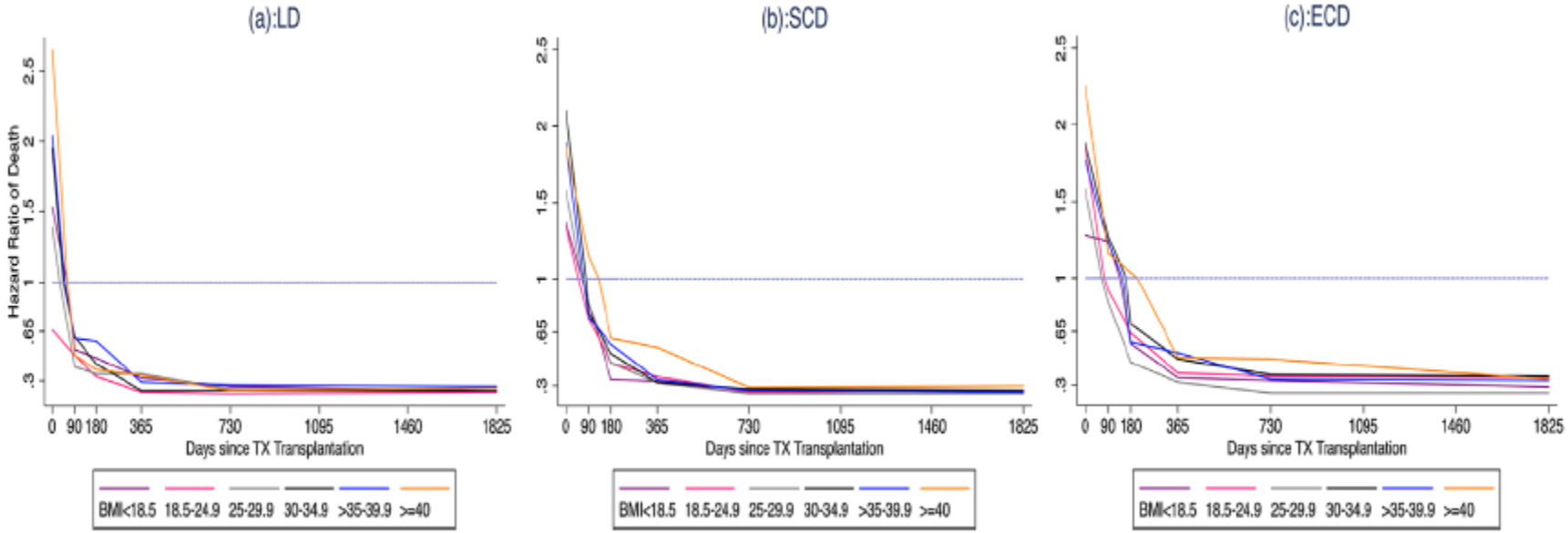


Table 3: Risk of death in transplant recipients compared to wait-listed patients with the same body mass index 1 year after transplantation

	SCD recipients	ECD recipients	LD recipient
BMI < 18.5	0.33 (0.26, 0.41)	0.30 (0.21, 0.42)	0.35 (0.24, 0.52)
BMI 18.5–24.9	0.34 (0.30, 0.39)	0.37 (0.32, 0.42)	0.20 (0.15, 0.26)
BMI 25.0–29.9	0.32 (0.28, 0.37)	0.43 (0.38, 0.50)	0.30 (0.22, 0.47)
BMI 30.0–34.9	0.32 (0.26, 0.39)	0.42 (0.35, 0.51)	0.23 (0.17, 0.32)
BMI 35.0–39.0	0.34 (0.26, 0.46)	0.39 (0.24, 0.52)	0.28 (0.14, 0.50)
BMI ≥ 40.0	0.52 (0.37, 0.72)	0.54 (0.33, 0.78)	0.34 (0.19, 0.59)

TRANSPLANT INTERNATIONAL

Transplant International ISSN 0934-0874

ORIGINAL ARTICLE

Metabolic syndrome in heart transplantation: impact on survival and renal function

Luis Martínez-Dolz,[1] Ignacio J. Sánchez-Lázaro,[1] Luis Almenar-Bonet,[1] Manuel Portolés,[2] Miguel Rivera,[2] Antonio Salvador[1] and Jose Anastasio Montero[1] | Heart Failure and Transplant Unit, Department of Cardiology, La Fe University Hospital, Valencia, Spain

- 253 HTx (2000 – 2011)

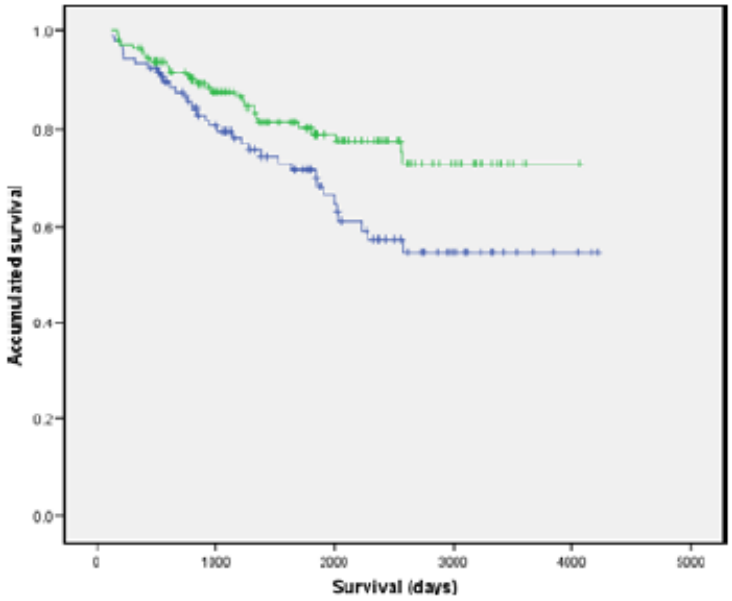
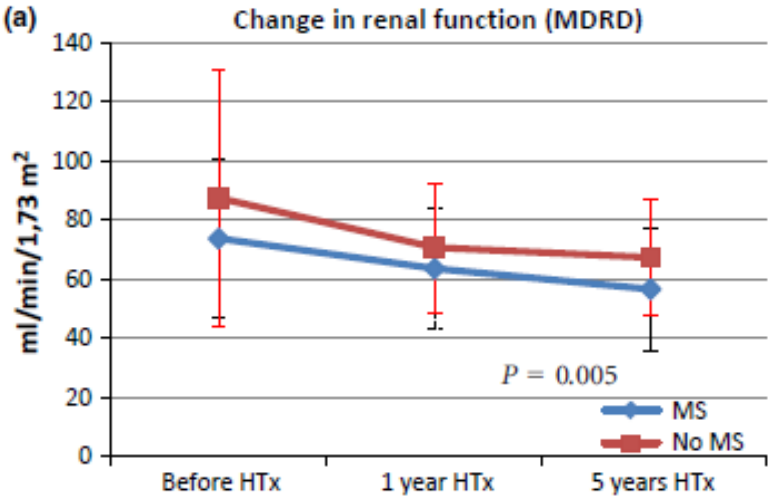


Figure 2 Long-term survival in MS and non-MS groups. Significantly higher long-term survival was found in patients from the non-MS group (log-rank test, $P = 0.02$), with divergent curves from the start until stabilization at about 7 years of follow-up.

Table 5. Mortality logistic regression.

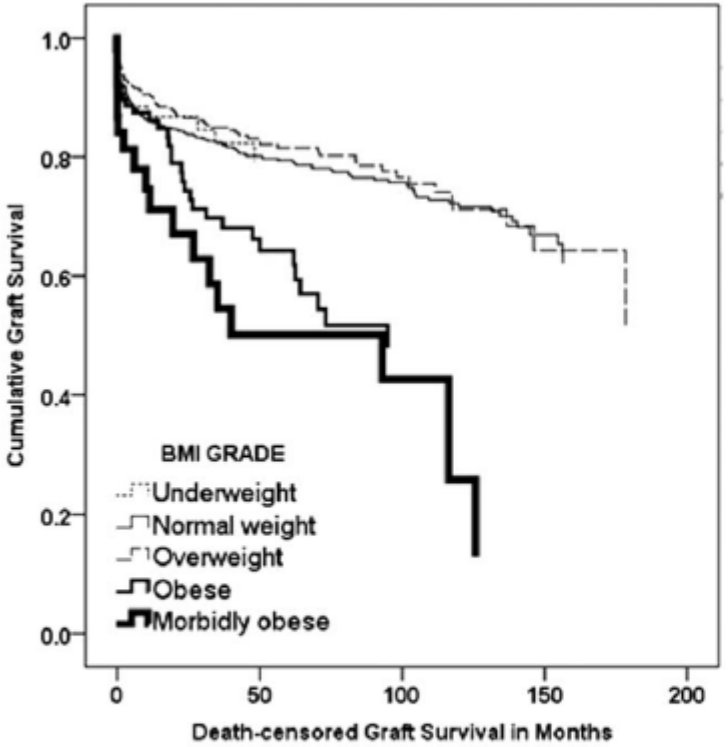
	OR	95% CI	*P*
MS	2.087	1.066–4.083	0.032
Renal function (MDRD) before HTx	1.002	0.993–1.010	0.676
Ischemic time	1.004	0.997–1.011	0.285
Age	1.022	0.985–1.061	0.242
Sex	1.323	0.525–3.332	0.552
PGF	1.117	0.513–2.435	0.780
Rejection episodes	1.833	1.406–2.389	0.001
Infections	1.054	0.843–1.318	0.645



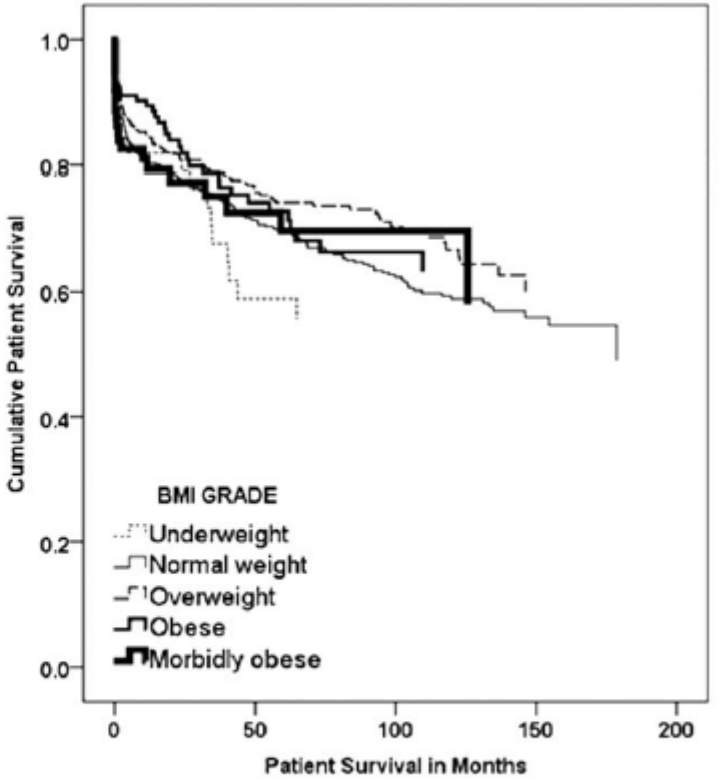
Increased Morbidity in Overweight and Obese Liver Transplant Recipients: A Single-Center Experience of 1325 Patients From the United Kingdom

Abdul R. Hakeem, Andrew J. Cockbain, Syed S. Raza, Stephen G. Pollard, Giles J. Toogood, Magdy A. Attia, Niaz Ahmad, Ernest L. Hidalgo, K. Raj Prasad, and Krishna V. Menon

Department of Hepatopancreatobiliary and Transplant Surgery, St. James's University Hospital, Leeds Teaching Hospitals National Health Service Trust, Leeds, United Kingdom



Year since Transplant	0	1	2	3	4	5	6	7	8	9	10
Underweight	47	42	42	41	39	35	-	-	-	-	-
Normal weight	643	553	540	527	515	501	496	488	483	480	477
Overweight	417	375	354	350	348	348	347	347	346	346	346
Obese	145	123	120	115	115	114	112	112	110	108	107
Morbidly obese	73	60	59	58	57	57	57	56	56	56	55



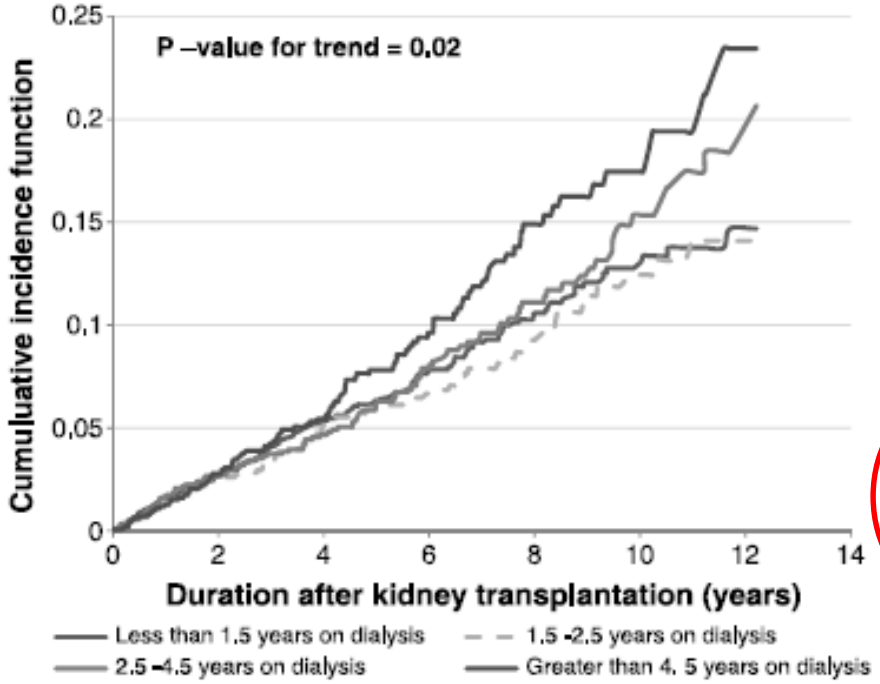
Year since Transplant	0	1	2	3	4	5	6	7	8	9	10
Underweight	47	39	38	34	31	31	-	-	-	-	-
Normal weight	643	511	495	483	465	456	445	438	432	424	421
Overweight	417	351	338	332	327	320	319	318	315	313	310
Obese	145	129	121	118	114	113	110	109	109	109	-
Morbidly obese	73	56	55	54	53	52	52	52	52	52	52

Malignancies

Time on Dialysis and Cancer Risk After Kidney Transplantation

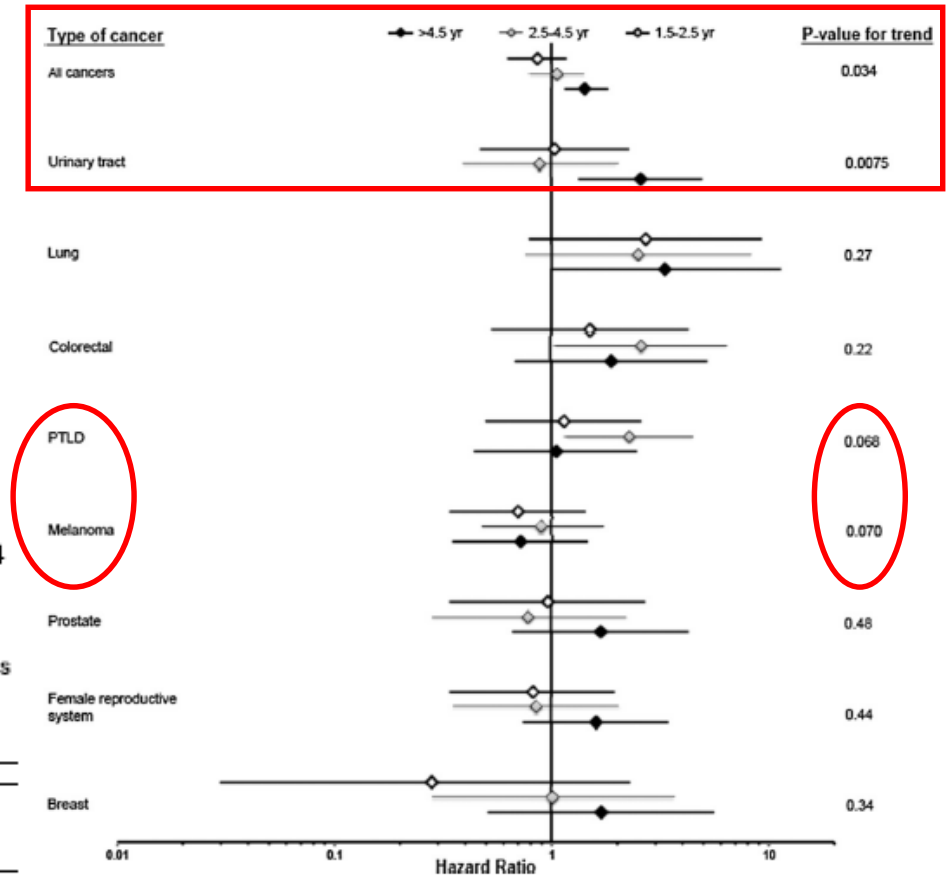
Germaine Wong,[1,2,3,5] Robin M. Turner,[1] Jeremy R. Chapman,[3] Martin Howell,[1,2] Wai H. Lim,[4] Angela C. Webster,[1,2,3] and Jonathan C. Craig[1,2]

Sydney School of Public Health, University of Sydney, Sydney, New South Wales, Australia.



**adjusted for gender, age at transplantation and competing cardiovascular deaths*

No. at risk	0	2	4	6	8	10	12
< 1.5 yrs	2306	1762	1363	982	655	336	81
1.5 – 2.5 yrs	1267	938	718	496	293	142	39
2.5–4.5 yrs	1431	1001	733	499	298	143	44
> 4.5 yrs	1413	929	647	379	209	93	23



Transplantation 2013;95: 114–121

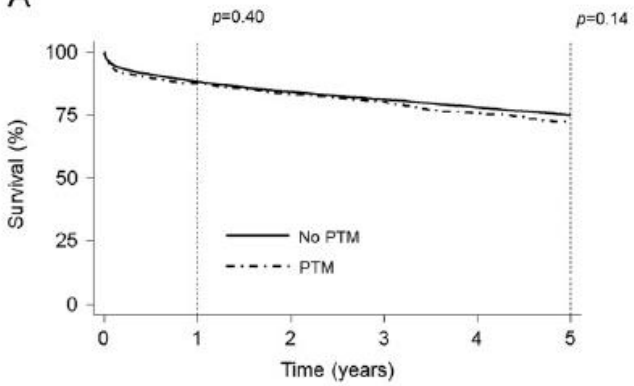
Pre-transplant malignancy: An analysis of outcomes after thoracic organ transplantation

Claude A. Beaty, MD, Timothy J. George, MD, Arman Kilic, MD, John V. Conte, MD, and Ashish S. Shah, MD

Division of Cardiac Surgery at the Johns Hopkins Medical Institutions, Baltimore, Maryland.

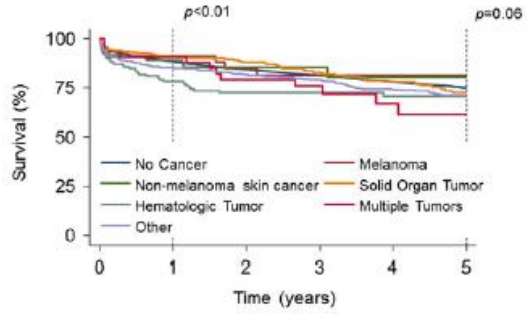
- UNOS
- 13613 LuTx
- 19817 HTx

A



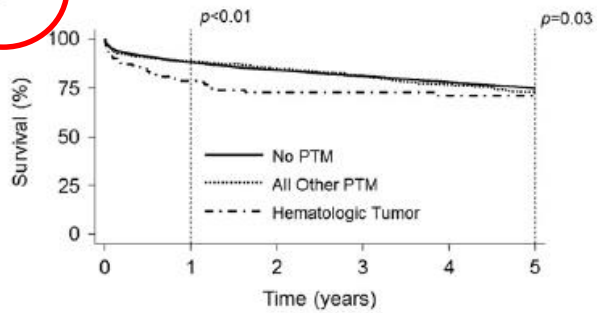
Number at risk						
No PTM	18586	14250	11959	10077	8297	6635
PTM	1108	811	659	528	406	321

B



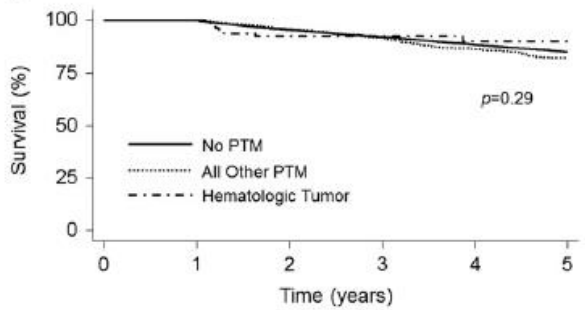
Number at risk						
No cancer	18586	14250	11959	10077	8297	6635
Melanoma	47	34	27	18	11	6
Non-melanoma skin cancer	90	61	38	27	15	9
Solid Organ Tumor	447	314	237	158	102	60
Hematologic Tumor	146	89	66	51	36	24
Multiple Tumors	45	34	26	20	12	7
Other	332	279	265	254	230	215

C



Number at risk						
No PTM	18586	14250	11959	10077	8297	6635
All Other PTM	961	722	593	477	370	297
Hematologic Tumor	146	89	66	51	36	24

D



Number at risk						
No PTM	0	0	11959	10077	8297	6635
All Other PTM	0	0	593	477	370	297
Hematologic Tumor	0	0	66	51	36	24

J Heart Lung Transplant 2013;32:202–211

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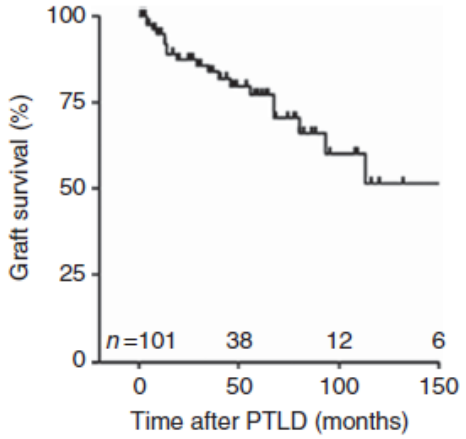
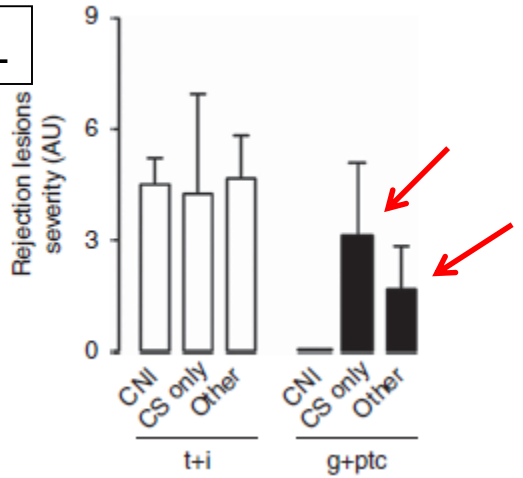
Maintaining calcineurin inhibition after the diagnosis of post-transplant lymphoproliferative disorder improves renal graft survival

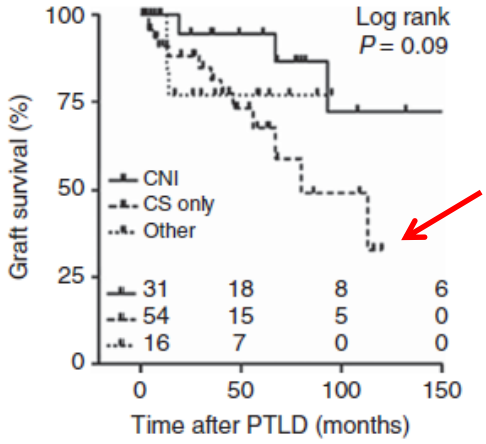
Jean-Emmanuel Serre[1], David Michonneau[2], Emmanuel Bachy[3], Laure-Hélène Noël[4], Valérie Dubois[5,6], Caroline Suberbielle[7], Henri Kreis[2,8], Christophe Legendre[2,8], Marie-France Mamzer-Bruneel[2,8], Emmanuel Morelon[1,3,9] and Olivier Thaunat[1,3,9]

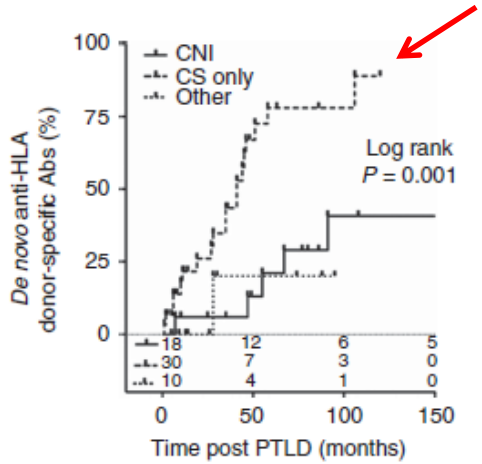
[1]Hospices Civils de Lyon, Hôpital Edouard Herriot, Service de Transplantation, Néphrologie et Immunologie Clinique, Lyon, France; [2]Service de Transplantation Rénale et de Soins Intensifs, Hôpital Necker, APHP, Paris, France; [3]INSERM, U1111, Lyon, France;

PTLD n=101









Depression, drug abuse

American Journal of Transplantation 2013; 13: 928–935
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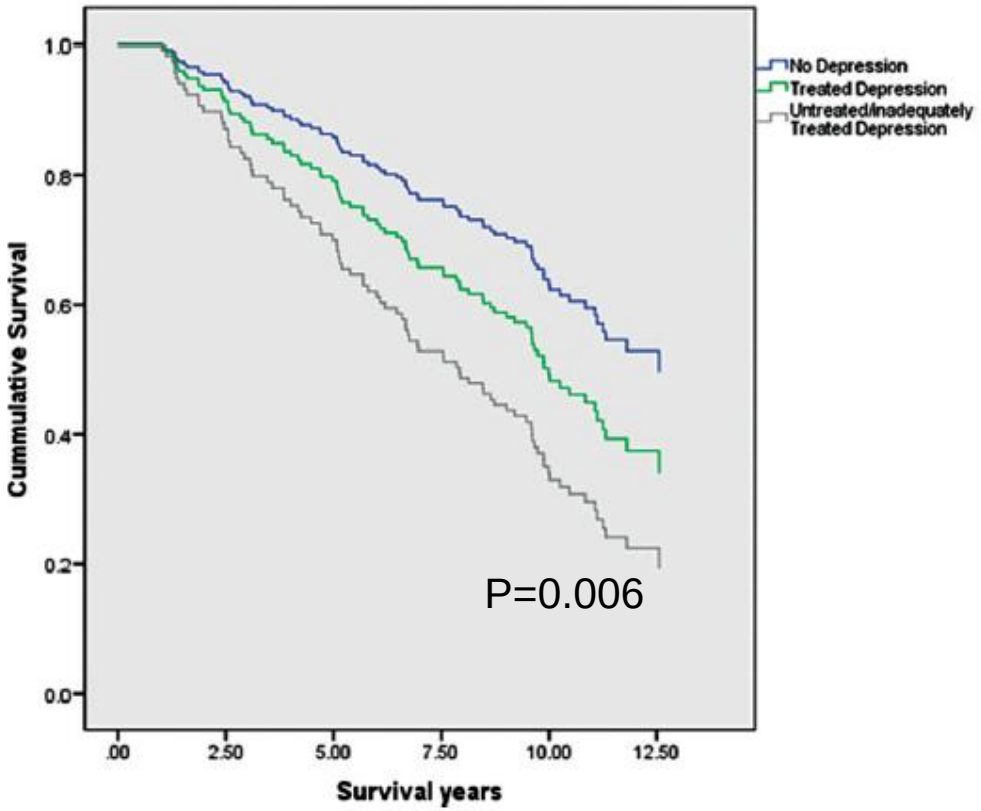
doi: 10.1111/ajt.12164

Early Treatment of Depressive Symptoms and Long-Term Survival After Liver Transplantation

S. S. Rogal[a,*], M. A. Dew[b], P. Fontes[c] and A. F. DiMartini[b]

[a]Division of Gastroenterology, Hepatology, and Nutrition, University of Pittsburgh, Pittsburgh, Pennsylvania

- 167 LTx for ALD
- 1998 – 2003
- Beck Depression Inventory
- Q3 months (1st yr)
- Self-report instrument
- 21 symptoms of depression
  - Low 0-9.5
  - Moderate 9.5-16.5
  - High >16.5



clinical investigation http://www.kidney-international.org
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A history of chronic opioid usage prior to kidney transplantation may be associated with increased mortality risk

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- 1064 KTx (Jan 2004 – Dec 2008)
- Body pains (n=452, 42.5%)
- Prior history of chronic opioid use (COU)

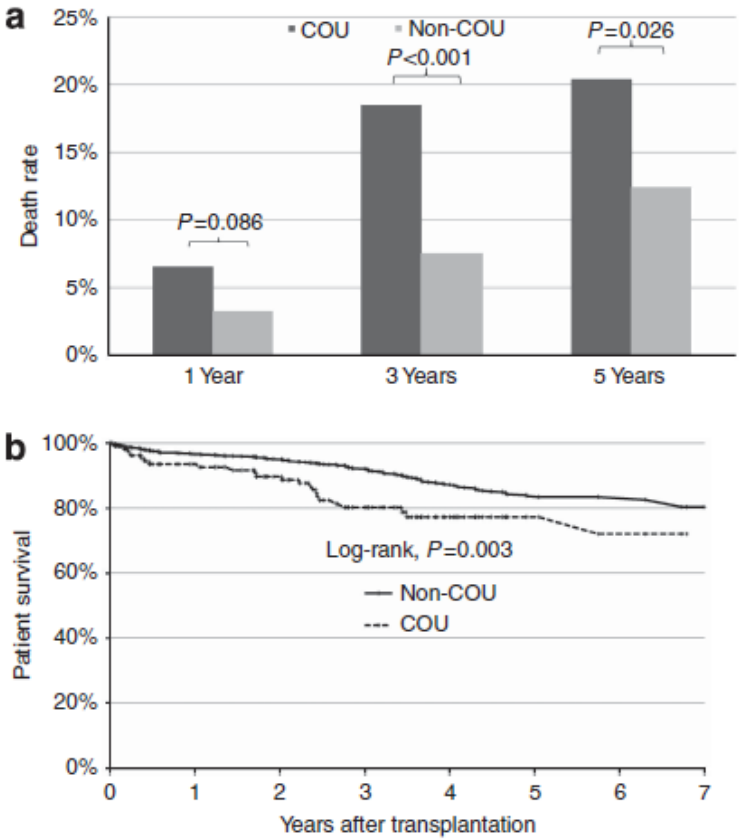

Figure 3 | Patient survival after transplantation. (**a**) Cumulative incidence of death at 1, 3, and 5 years and (**b**) overall Kaplan–Meier patient survival analysis. COU, chronic opioid usage.

Conclusions / Future Directions

- Reassess outcomes in living donor kidneys
- Promising data on EVNP
- Expand the use of ECD and DCD
- Organ allocation (elderly, obese)
- EVL and low-dose Tac in LTx (short-term)
- Cautious use of mTOR inhibitors (long-term)
- Reassess CNI in pts with PTLD
- Strategies for metabolic syndrome / obesity

Conclusions / Future Directions

- Expand on non-invasive diagnostic tools
- Prevent DSA
- Intragraft DSA / microarrays
- Monitoring of IgG and C3?
- New treatment for CMV
- Management of pts with ALD and depression
- Management of pts with pre-Tx opioid use

Thank you

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