TRASPLANTE CARDIACO: CASOS CLINICOS

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Hospital de la Santa Creu i Sant Pau

Barcelona 16 de marzo 2011

Paciente varón , nacido en 1981

- Displasia Aritmogénica de VD
- Serologías preTC : CMV -, Toxo +, PPD negativo
- Trasplante Cardíaco Ortotopico 1998 técnica bicaval (Tiempo de isquemia 215 min)

- Donante 16 años , varon , causa de exitus TCE .
- Serologías del donante CMV -, Toxo -

- Cirugía sin incidencias . Alta a los 11 días.
- Tratamiento al alta : ciclosporina, Aza, esteroides

EVOLUCION

- Injerto
  - BEM 5/16 3 A (no deterioro eco ni compromiso hemodinamico)
  - Ecocardiograma : injerto normofuncionante
  - Coronariografía : sin lesiones al mes , al año y 5 años

- Inmunosupresión
  - cambio de Aza por MMF (1999) no tolerado por problemas GI
  - cambio de ciclosporina por tacrolimus (2000)

- Infecciones
  - Ninguna relevante
  - No presentó infección por CMV

- Tratamiento Coadyuvante
  - Estatinas desde 2002
  - Por HTA amlodipino 10 mg (02) que se cambió por enalapril (08)

Visita de control rutinaria 10 años de trasplante

Paciente asintomático

Exploración física normal

Ecocardiograma con injerto normofuncionante

Analítica

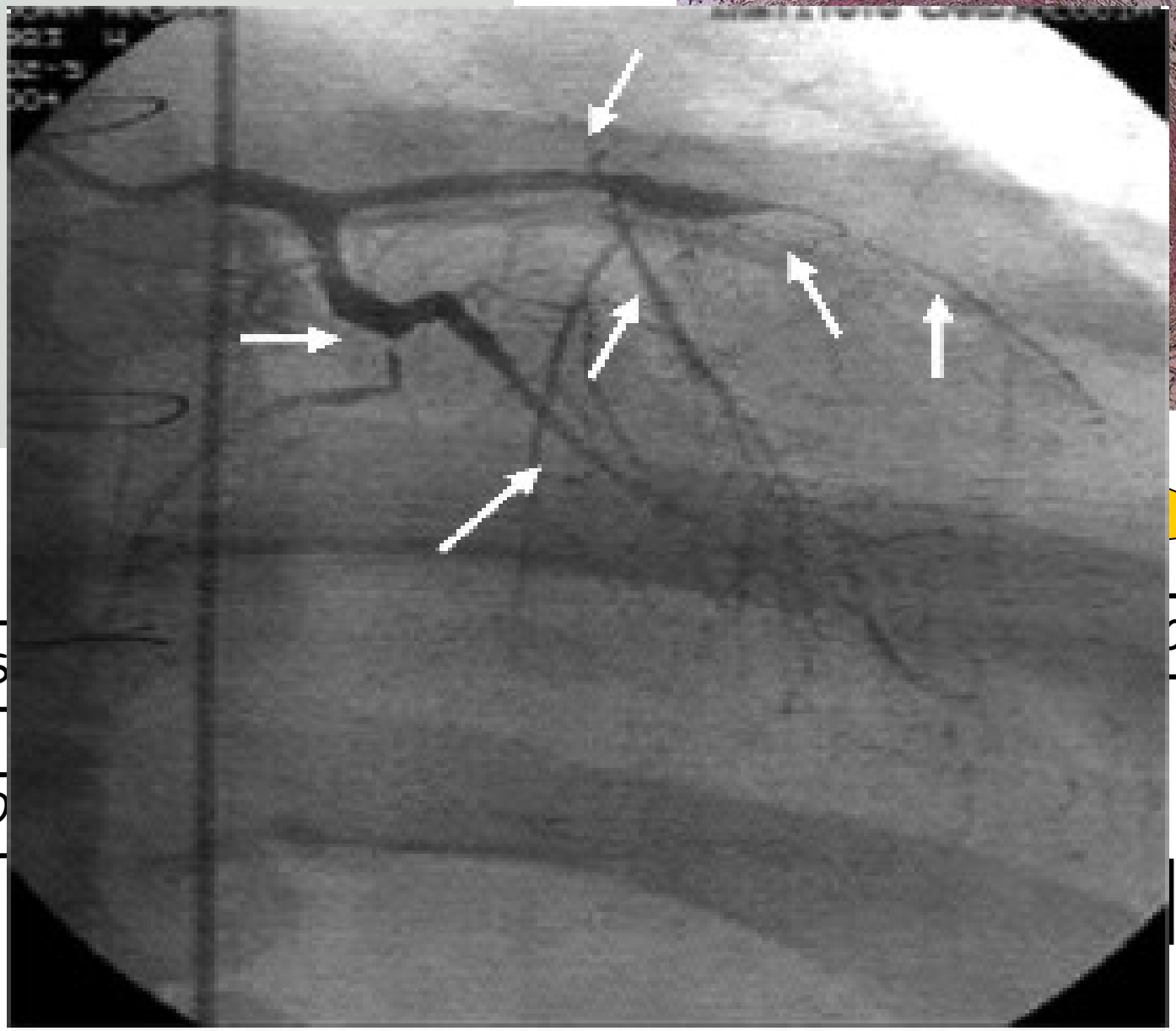
Glucosa	4.5	mmol/L mg/100mL
Urea	6.9	mmol/L mg/100mL
Creatinina	79	µmol/L mg/100mL
Filtrat glomerular estimat	>60.00	mL/min/1.73
Triglicèrids	0.71	mmol/L mg/100mL
Colesterol	3.78	mmol/L
Colesterol HDL	1.32	mmol/L mg/100mL
Colesterol LDL	2.13	mmol/L

RECOMPTES		
HEMOGLOBINA	143	g/L
HEMATÒCRIT	0.42	L/L
HEMATIES	4.38	x10E12/l
PLAQUETES	159	x10E9/L
VPM	8.4	fL
PLAQUETÒCRIT	0.17	%
LEUCÒCITS	5.73	x10E9/L

BIOQUÍMICA ORINA

Creatinina	15.9	mmol/L
Proteïna	0.90	g/L
Proteïna	56.6	mg/mmol cre

¿Ha desarrollado enfermedad vascular del injerto ?



IS

CO

DO

Enfermedad vascular del injerto

- Enfermedad silente
- Elevada prevalencia
- Implicación pronóstica
- Limitaciones en su tratamiento

POST-HEART TRANSPLANT MORBIDITY FOR ADULTS

Cumulative Prevalence in Survivors at 1, 5 and 10 Years Post-Transplant

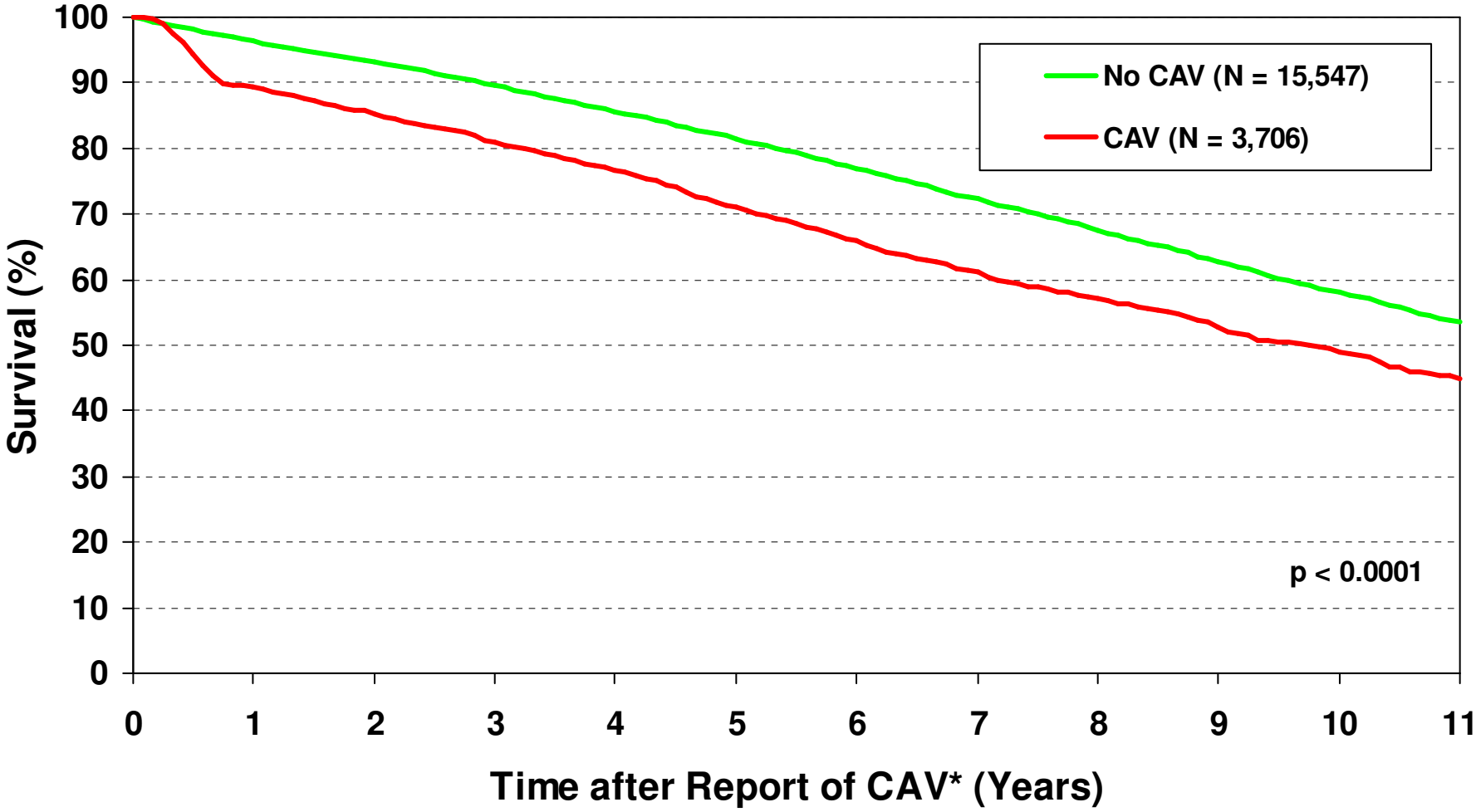
(Transplants: 1994 - June 1999)
For the Same Patients

Outcome	Within 1 Year	Within 5 Years	Within 10 Years
Hypertension	67.6%	92.5%	95.8%
Renal Dysfunction	13.9%	25.3%	37.3%
Abnormal Creatinine < 2.5 mg/dl	*8.7%*	*19.1%*	*25.8%*
Creatinine > 2.5 mg/dl	*5.2%*	*5.2%*	*6.5%*
Chronic Dialysis	*0.0%*	*0.6%*	*3.6%*
Renal Transplant	*0.0%*	*0.4%*	*1.5%*
Hyperlipidemia	47.7%	91.6%	96.0%
Diabetes	17.6%	29.7%	37.9%
Cardiac Allograft Vasculopathy	6.5%	29.0%	50.7%

J Heart Lung Transplant. 2010 Oct; 29 (10): 1083-1141

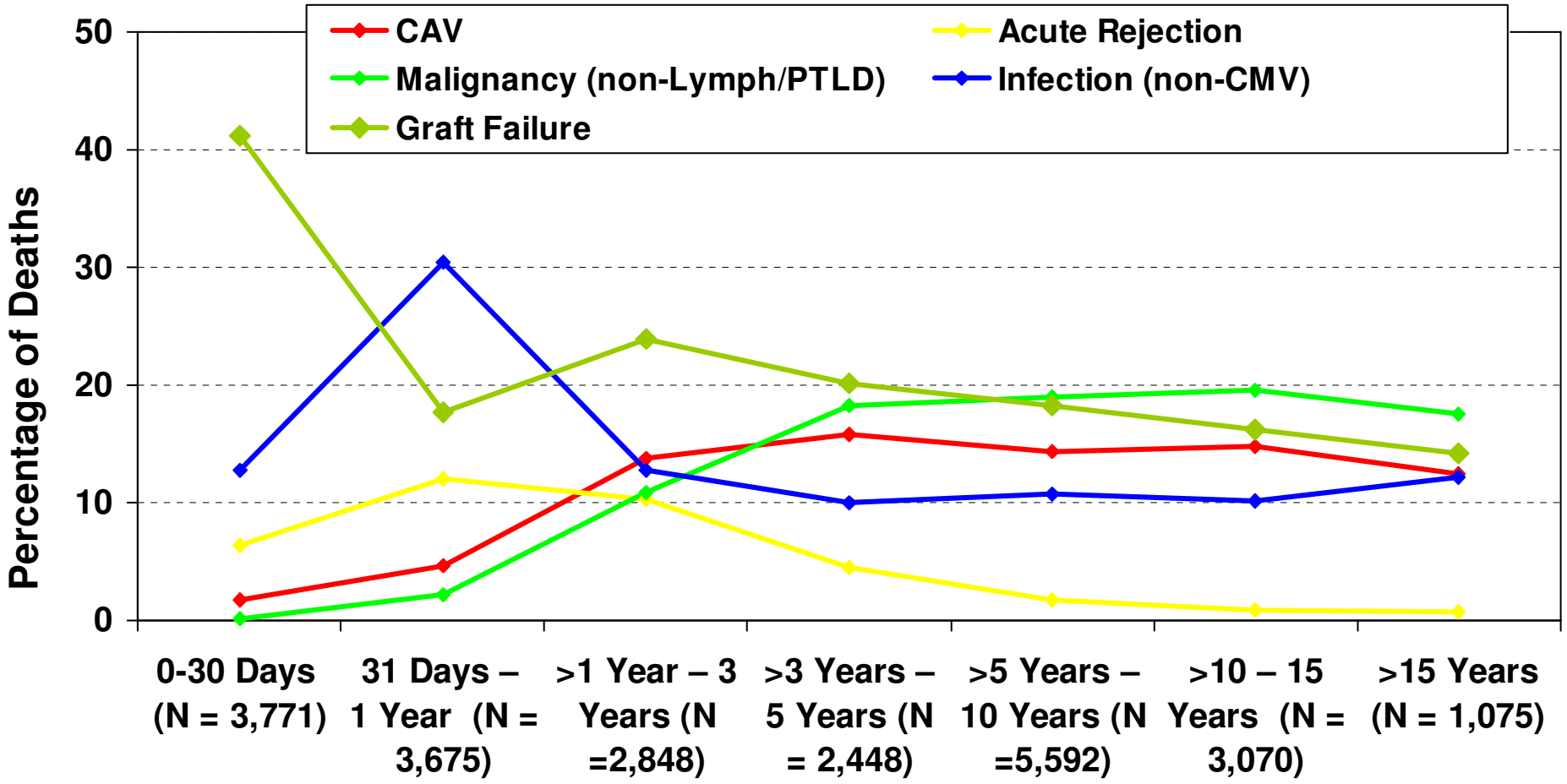
PATIENT SURVIVAL AFTER REPORT OF CAV AND PATIENT SURVIVAL IN PATIENTS WITHOUT CAV*

(Transplants: April 1994-June 2008)



J Heart Lung Transplant. 2010 Oct; 29 (10): 1083-1141

ADULT HEART TRANSPLANT RECIPIENTS:
Relative Incidence of Leading Causes of Death
(Deaths: January 1992 - June 2009)



J Heart Lung Transplant. 2010 Oct; 29 (10): 1083-1141

The international society of heart and lung transplantation guidelines for the care of heart transplant recipients

TASK FORCE 3: Long-term Care of Heart Transplant Recipients (Aug. 6, 2010)

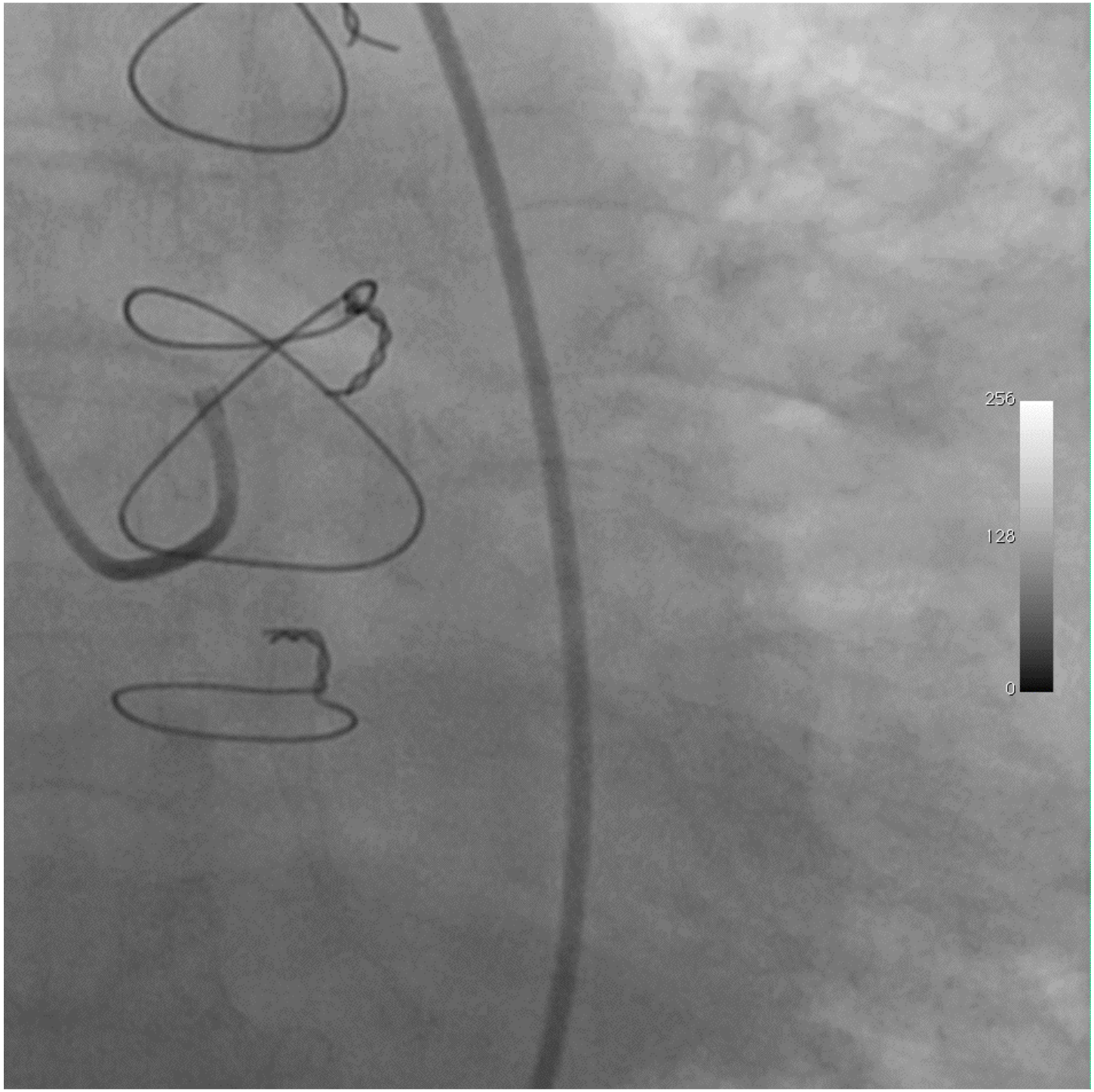
Chair: Sharon Hunt, MD; *Co-Chair*: Michael Burch

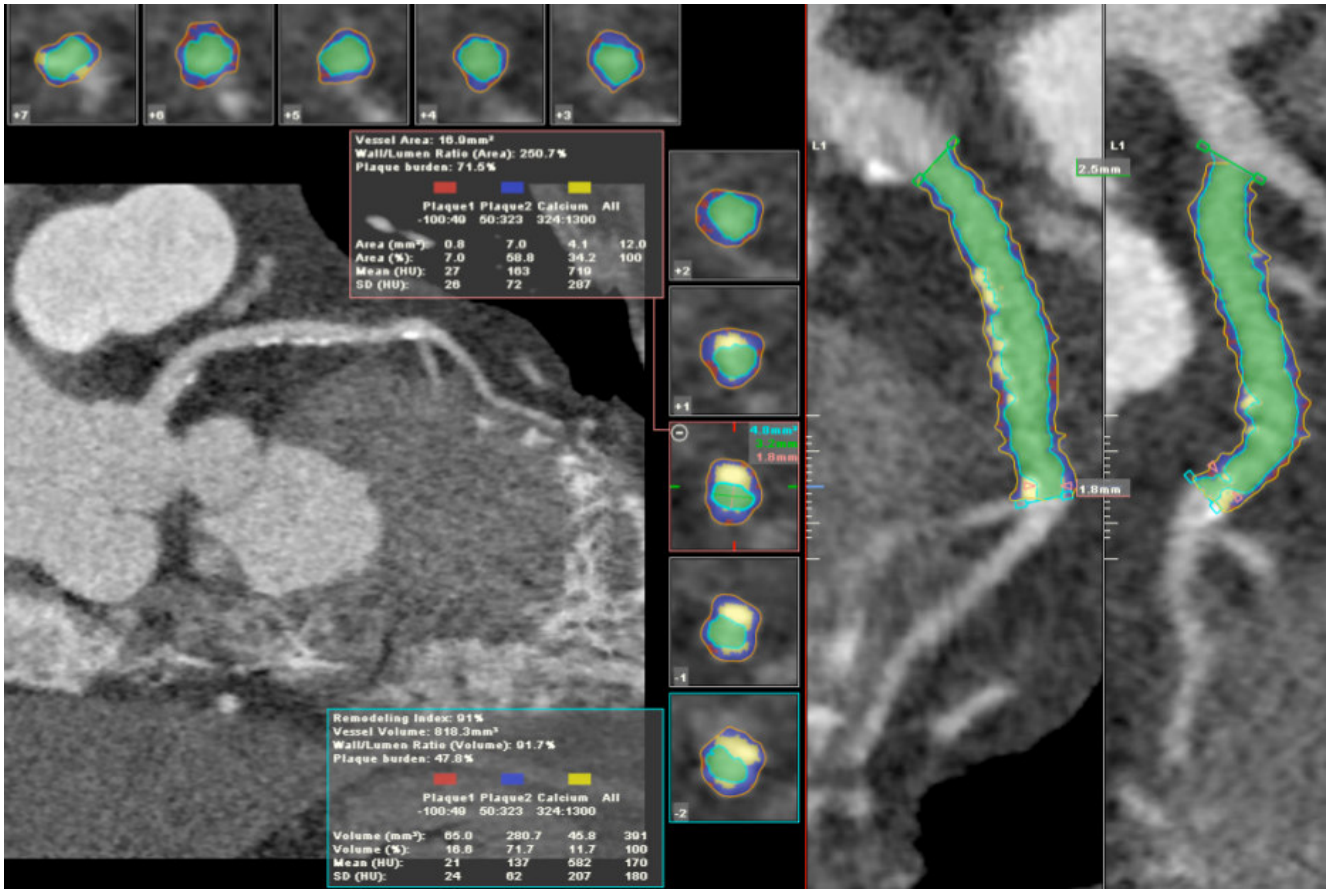
Contributing Writers: Geetha Bhat, MD; Charles Canter, MD; Richard Chinnock, MD; Marisa Crespo-Leiro, MD; Reynolds Delgado, MD; Fabienne Dobbels, PhD; Kathleen Grady, PhD; Walter Kao, MD; Jacqueline Lamour, MD; Gareth Parry, MD; Jignesh Patel, MD; Daniela Pini, MD; Jeffrey Towbin, MD; Gene Wolfel, MD

Class I:

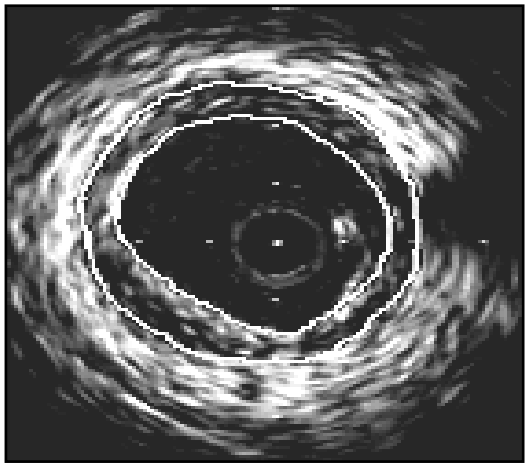
Annual or biannual coronary angiography should be considered to assess the development of CAV. Patients free of CAV at 3 to 5 years after HT, especially those with renal insufficiency, may undergo less frequent invasive evaluation.

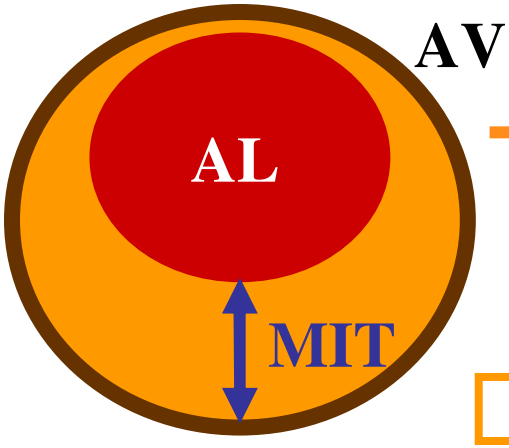
Level of Evidence: C.


256
128
0


+7
+6
+5
+4
+3
Vessel Area: 16.9mm²
Wall/Lumen Ratio (Area): 250.7%
Plaque burden: 71.5%
Plaque1 Plaque2 Calcium All
-100:49 50:323 324:1300
Area (mm²): 0.8 7.0 4.1 12.0
Area (%): 7.0 58.8 34.2 100
Mean (HU): 27 163 719
SD (HU): 26 72 287
+2
+1
-1
-2
Remodeling Index: 91%
Vessel Volume: 818.3mm³
Wall/Lumen Ratio (Volume): 91.7%
Plaque burden: 47.8%
Plaque1 Plaque2 Calcium All
-100:49 50:323 324:1300
Volume (mm³): 65.0 280.7 45.8 391
Volume (%): 16.6 71.7 11.7 100
Mean (HU): 21 137 582 170
SD (HU): 24 82 207 180
L1
L1
2.5mm
1.8mm

ECO INTRACORONARIO





Grado	MIT (mm)
Mínima	< 0,3
Leve	< 0,3
Moderada	0,3-0,5
Severa	➢0,5

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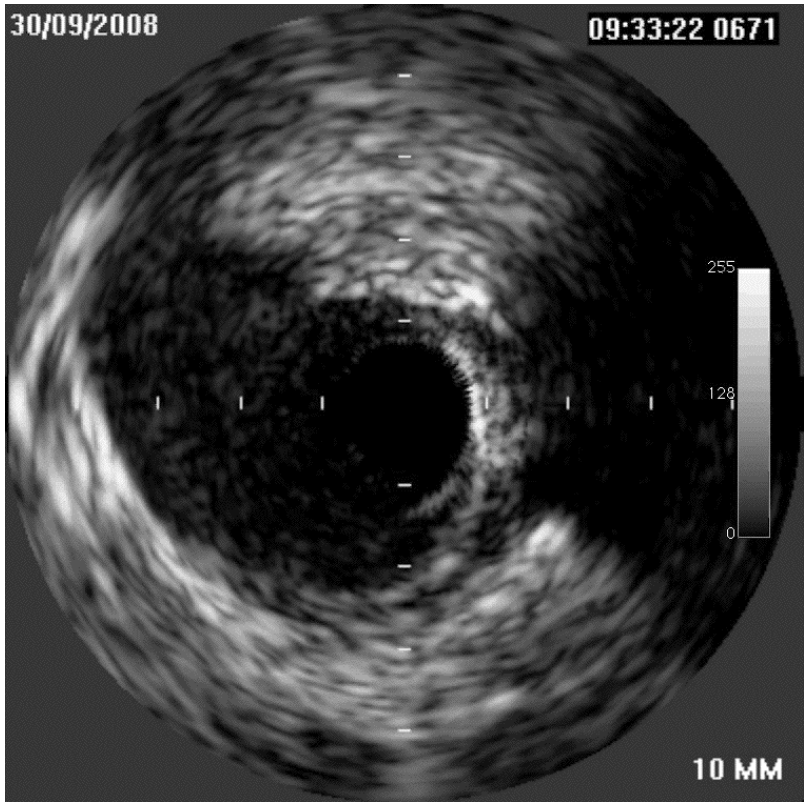
Table 1 Basic Criteria for the Interpretation of Intravascular Ultrasound Measurements After Heart Transplantation

Normal		Abnormal
Baseline study (4-6 weeks post transplant)	0.25-0.5mm intimal thickness	Any intimal lesion ≥ 0.5 mm suggests donor disease[56]
1-year study	No change in intimal thickness expected	Any lesion change from baseline - > 0.5-mm change suggests accelerated disease associated with adverse outcomes[61]


30/09/2008
09:33:22 0671
255
128
0
10 MM

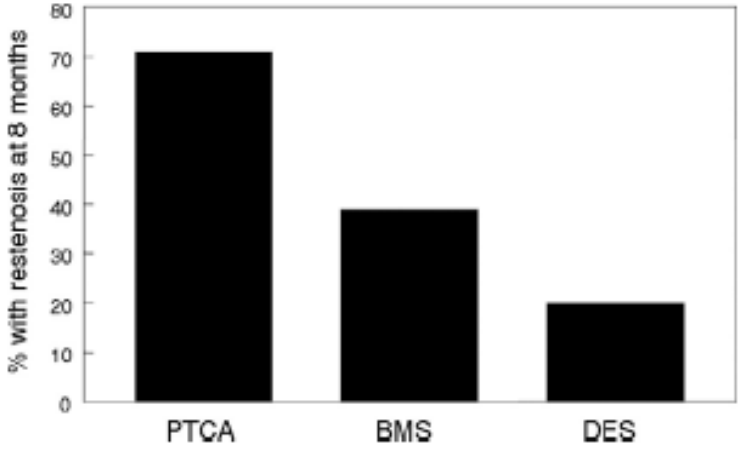
¿TRATAMIENTO ?

Surgical revascularization for cardiac allograft vasculopathy: Is it still an option?

Jay K. Bhama, MD,[a] Duc Q. Nguyen, MD,[a] Sun Scolieri, MD,[b] Jeffrey J. Teuteberg, MD,[b] Yoshiya Toyoda, MD, PhD,[a] Robert L. Kormos, MD,[a] Kenneth R. McCurry, MD,[a] Dennis McNamara, MD,[b] and Christian A. Bermudez, MD[a]

J Thorac Cardiovasc Surg 2009;137:1488-92

Revascularización percutánea



- ENFERMEDAD DIFUSA
- ¿IMPACTO SOBRE LA SUPERVIVENCIA?

BMS reestenosis 51 %
DES reestenosis 11 %

Aqel et al. J Heart Lung Transplant 2008;27:610-5
Zakliczynski et al. Transplant proceedings 2007;2859-2861
Rev Esp Cardiol Supl.2007; 7 :55 B-57B

Retrasplante

Class IIa:

PCI with drug-eluting stents is recommended in both adults and children with CAV and offers short-term palliation for appropriate discrete lesions.

Level of Evidence: C.

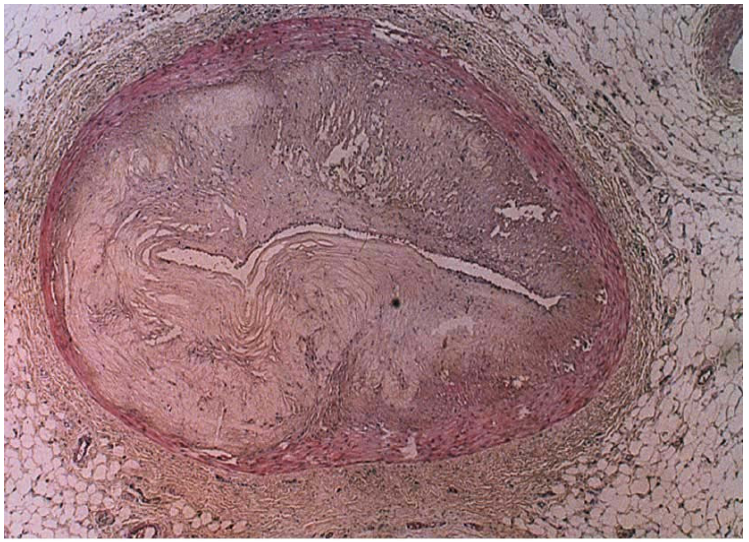
Surgical revascularization in HT recipients with CAV is an option in highly selected patients who have lesions amenable to surgical revascularization.

Level of Evidence: C.

. Cardiac retransplantation may be considered in patients with severe CAV and absence of contraindications for repeat HT.

Level of Evidence: C.

- No tiene lesiones angiográficas significativas
- No tiene disfunción del injerto
- Tiene hiperplasia intimal relevante



ISQUEMIA

DONANTE

CMV

FACTORES INMUNOLÓGICOS

HTA, DM , DLP, TABACO

Class I:

1. Primary prevention of CAV in HT recipients should include strict control of cardiovascular risk factors (hypertension, diabetes, hyperlipidemia, smoking, obesity) as well as strategies for the prevention of CMV infection.

   Level of Evidence: C.

2. In HT recipients, statin therapy has been shown to reduce CAV and improve long-term outcomes regardless of lipid levels and should be considered for all HT recipients (adult and pediatric).

   Level of Evidence: A.

- Estatina ✓
- Optimo control TA ✓
- Optimo control DM
- Prevención y tratamiento de CMV ✓
- ¿Tratamiento inmunosupresor?

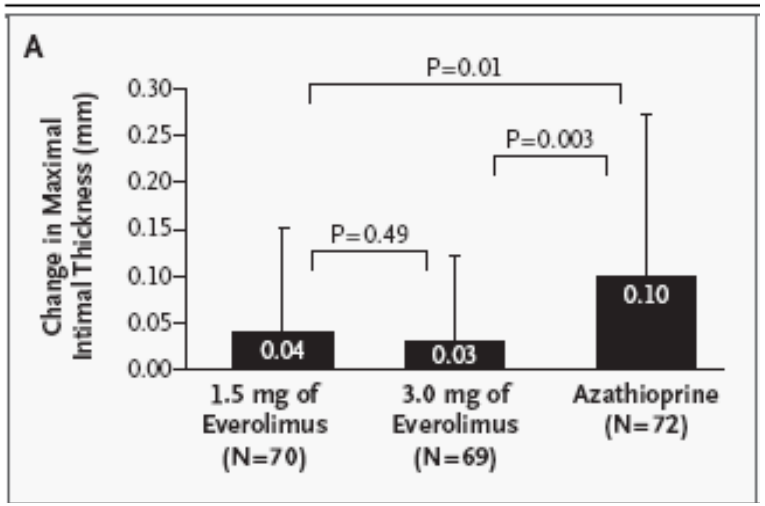
EVI E INMUNOSUPRESION

-No existen diferencias entre ciclosporina ni tacrolimus en la prevención de la EVI

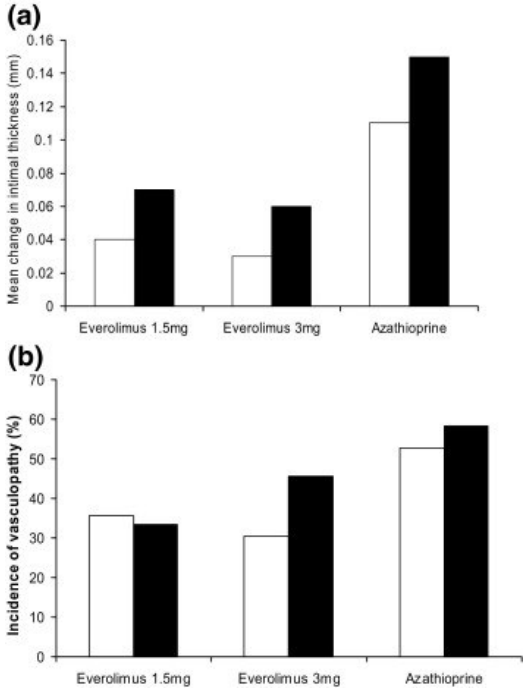
-MMF comparado con Aza se asocia a una disminución del grosor intimal al año del TC

-Los ISP representan los IS más prometedores

EVEROLIMUS



Eisen et al N Engl J Med 2003,



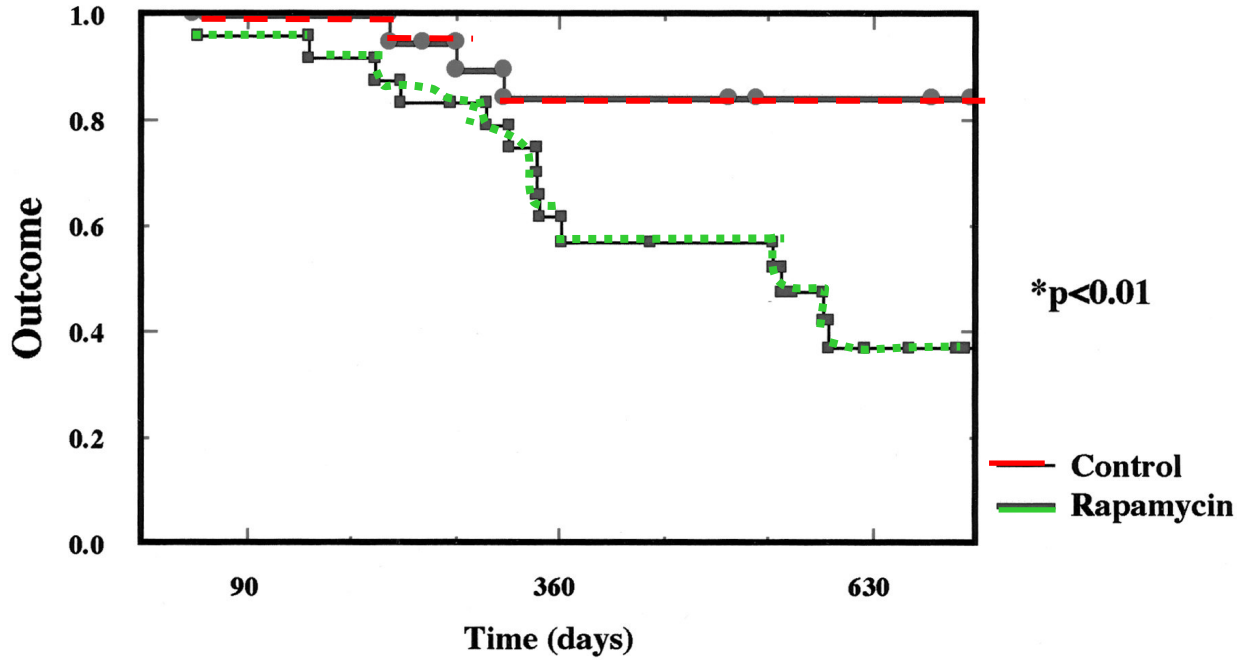
RAD B253 study group. J Heart Lung transplant 2007: 26:584-92

SIROLIMUS

TABLE 4. Intracoronary Ultrasound Measurements at Baseline (6 Weeks) and 6 Months

	Azathioprine (n=22)	Sirolimus (n=38)	*P*, Sirolimus vs Azathioprine
Maximum intima and media thickness, mm			
Week 6	0.62±0.40	0.49±0.26	0.034
Month 6	0.70±0.41*	0.50±0.28	0.0032
Mean intima and media thickness, mm			
Week 6	0.24±0.17	0.19±0.13	0.051
Month 6	0.35±0.26	0.19±0.12	<0.0001

Keogh et al. Circulation 2004



Mancini, D. et al. Circulation 2003;108:48-53

RAPASTAT: EVALUATION OF THE ROLE OF ORAL SIROLIMUS IN THE TREATMENT OF ESTABLISHED GRAFT VESSEL DISEASE. A PROSPECTIVE, RANDOMIZED INTRAVASCULAR ULTRASOUND STUDY

J, Segovia et al J Heart Lung Transpl 2004;23:S51-2

EVEROSTAT: Study to Evaluate Effect of Everolimus in Progression of Graft Vascular Illness on Patients With Heart Transplant

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Class IIa:

In HT recipients with established CAV, the substitution of MMF or AZA with a PSI can be considered.

Level of Evidence: B.

- Tacrolimus
- Everolimus
- Prednisona
- Estatinas
- Enalapril