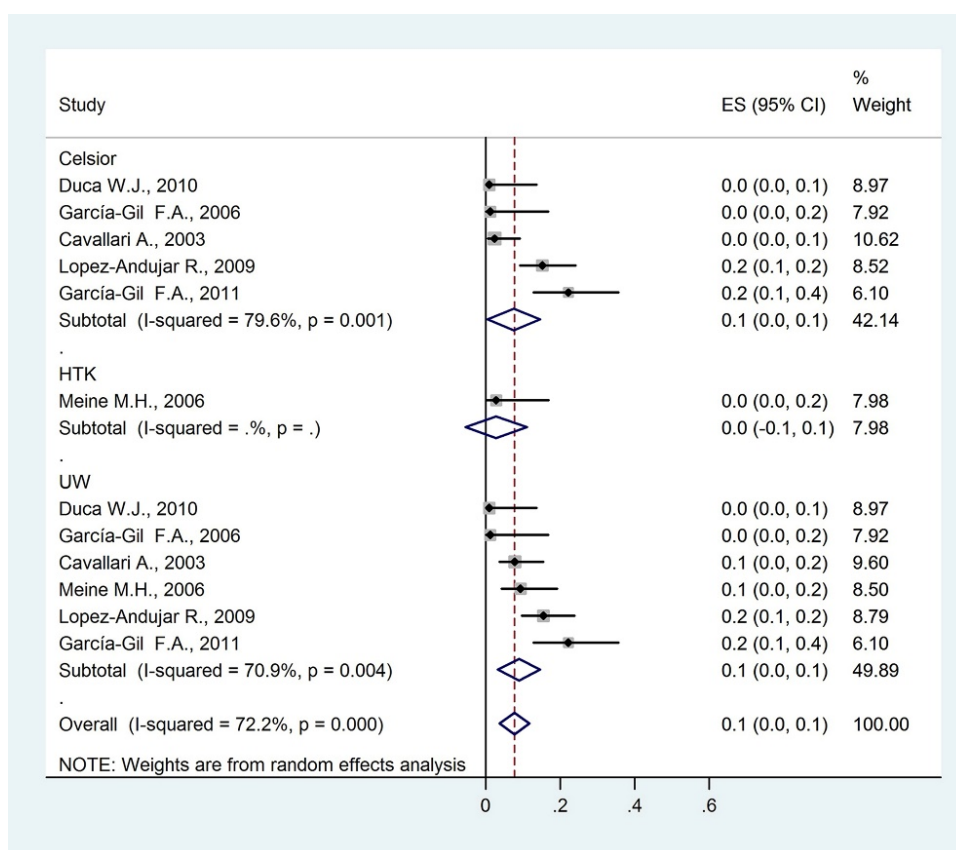
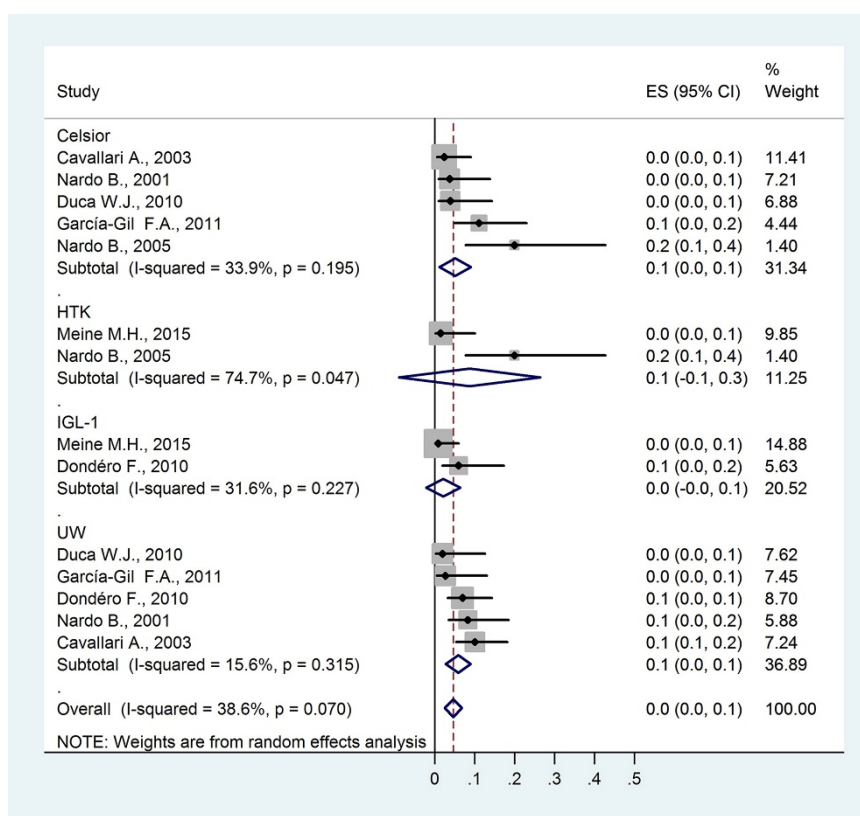


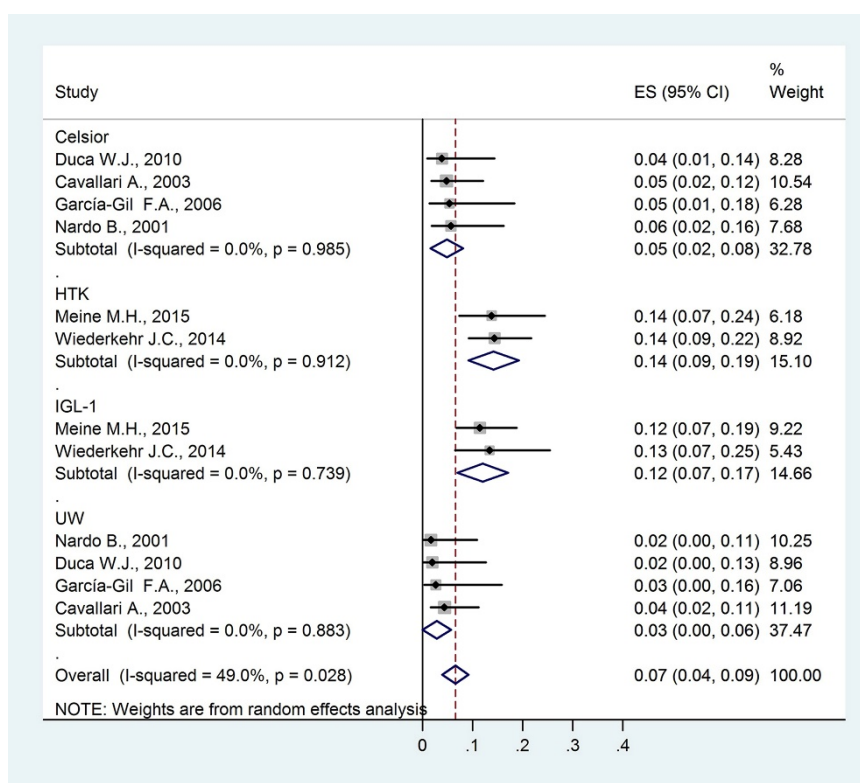
Supplementary Figure 1 Characteristics of donors and recipients. A: Forest plot for CIT; **B:** Forest plot for MELD score. Squares represent individual study effects, with the size of the box relating to the weight of the study in the meta-analysis. Each diamond represents a summary effect from subgroup analysis. Horizontal bars represent 95% CIs. CIT: Cold ischemia time, MELD score: Model of End Stage Liver Disease Score; ES: Effect size; UW: University of Wisconsin solution; HTK: Histidine-tryptophan-ketoglutarate solution; CS: Celsior solution; IGL-1: Institute Georges Lopez solution.



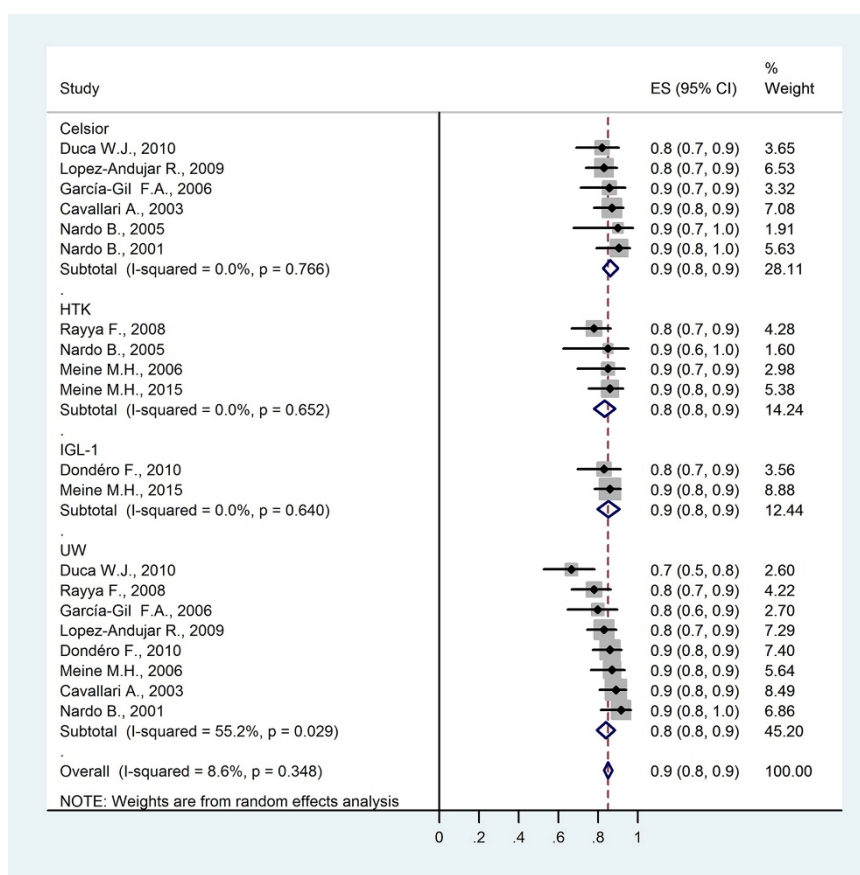
Supplementary Figure 2 Forest plot for PDF comparing RCTs grouped by solution. Squares represent individual study effects, with the size of the box relating to the weight of the study in the meta-analysis. Each diamond represents a summary effect from meta-analysis. Horizontal bars represent 95% CIs. PDF: Primary dysfunction; RCTs: Randomized controlled trials; ES: Effect size; UW: University of Wisconsin solution; CS: Celsior solution; IGL-1: Institute Georges Lopez solution; HTK: histidine-tryptophan-ketoglutarate solution.



Supplementary Figure 3 Forest plot to for early RT comparing RCTs grouped by solution. Squares represent individual study effects, with the size of the box relating to the weight of the study in the meta-analysis. Each diamond represents a summary effect from meta-analysis. Horizontal bars represent 95% CIs. Early RT: Early retransplantation; RCTs: Randomized controlled trials; ES: Effect size; UW: University of Wisconsin solution; HTK: histidine-tryptophan-ketoglutarate solution; CS: Celsior solution; IGL-1: Institute Georges Lopez solution.



Supplementary Figure 4 Forest plot for POD comparing RCTs grouped by solution. Squares represent individual study effects, with the size of the box relating to the weight of the study in the meta-analysis. Each diamond represents a summary effect from meta-analysis. Horizontal bars represent 95% CIs. POD: post-transplant death within 30 d; RCTs: randomized controlled trials; ES: effect size; CI: confidence interval; UW: University of Wisconsin solution; HTK: histidine-tryptophan-ketoglutarate solution; CS: Celsior solution; IGL-1: Institute Georges Lopez solution.



Supplementary Figure 5 Forest plot for OPS-1 comparing RCTs grouped by solution. Squares represent individual study effects, with the size of the box relating to the weight of the study in the meta-analysis. Each diamond represents a summary effect from meta-analysis. Horizontal bars represent 95% CIs. OPS-1: One-year post-transplant patient survival; RCTs: Randomized controlled trials; ES: Effect size; UW: University of Wisconsin solution; HTK: histidine-tryptophan-ketoglutarate solution; CS: Celsior solution; IGL-1: Institute Georges Lopez solution.

Supplementary Table 1 Comparative study details

Source	Study type	Sample date	<i>n</i>	Solution 1	Treatment	Solution 2	Treatment
Meine <i>et al</i> , 2015	Prospective	2009-2014	178	IGL-1	2000 mL of IGL-1 was infused through the aorta and 2000 mL through the portal vein.	HTK	4000 mL of HTK was infused through the aorta and 2000 mL through the portal vein.
Wiederkehr <i>et al</i> , 2014	Retrospective	2008-2013	178	IGL-1	2000 mL of IGL-1 was infused through the infra-renal aorta and 1000 mL through the portal vein.	HTK	2000 mL of HTK was infused through the infra-renal aorta and 1000 mL through the portal vein.
Dondéro <i>et al</i> , 2010	Prospective	2007-2009	140	IGL-1	3000 mL of IGL-1 was infused through the abdominal aorta and 1000 mL through the portal vein.	UW	3000 mL of UW was infused through the abdominal aorta and 1000 mL through the portal vein.
Cavallari <i>et al</i> , 2003	Prospective	1999-2001	173	CS	60 mL/kg of CS was infused through the aorta and 30 mL/kg through the portal vein.	UW	30 mL/kg of UW was infused through the aorta and 30 mL/kg through the portal vein.
Nardo <i>et al</i> , 2005	Prospective	none	40	CS	60 mL/kg of CS was infused through the aorta and 30 mL/kg through the portal vein.	HTK	120 mL/kg of HTK was infused through the aorta and 30 mL/kg through the portal vein..

Lopez-Andujar <i>et al</i> , 2009	Prospective	2003-2005	196	CS	There were no data on the perfusion volumes. Grafts were perfused through the aorta and portal vein <i>in situ</i> at a pressure of 75 to 100 cm H ₂ O at 4°C.	UW	There were no data on the perfusion volumes. Grafts were perfused through the aorta and portal vein <i>in situ</i> at a pressure of 75 to 100 cm H ₂ O at 4°C.
García-Gil <i>et al</i> , 2006	Prospective	2001-2003	80	CS	4000 mL of CS was infused through the aorta and 2000 mL through the portal vein.	UW	3000 mL of UW was infused through the aorta and 2000 mL through the portal vein.
Meine <i>et al</i> , 2006	Prospective	2003-2004	102	HTK	4000 mL of HTK was infused through the aorta and 1000 mL through the portal vein.	UW	2000 mL of UW was infused through the aorta and 1000 mL through the portal vein.
Nardo <i>et al</i> , 2001	Prospective	18 mo	113	CS	Liver allografts were perfused via aorta and portal vein with standard volumes according to donor weight.	UW	Liver allografts were perfused via aorta and portal vein with standard volumes according to donor weight.
Duca <i>et al</i> , 2010	Retrospective	2001-2003	102	CS	3000 mL of Euro-Collins was infused through the aorta, and 1000 mL of CS was infused through the portal vein.	UW	3000 mL of Euro-Collins was infused through the aorta, and 1000 mL of UW was infused through the portal vein.

Rayya <i>et al</i> , 2008	Retrospective	2003-2006	137	HTK	no data	UW	no data
García-Gil <i>et al</i> , 2011	Prospective	2001-2003	102	CS	4000 mL of CS was infused through the aorta and 2000 mL through the portal vein.	UW	3000 mL of UW was infused through the aorta and 2000 mL through the portal vein.
Lama <i>et al</i> , 2002	Prospective	Jun.-Dec. 2000	20	CS	no data	UW	no data
Erhard <i>et al</i> , 1994	Prospective	30-mo period	60	HTK	300 mL/kg of HTK was infused through the aorta and 300 mL/kg through the portal vein.	UW	2000 mL of UW was infused through the aorta and 2000 mL through the portal vein.
Mangus <i>et al</i> , 2008	Retrospective	2001-2006	209	HTK	Mean infused volume for HTK is 3800 mL.	UW	Mean infused volume for UW is 3200 mL.

UW: University of Wisconsin solution; HTK: Histidine-tryptophan-ketoglutarate solution; CS: Celsior solution; IGL-1: Institute Georges Lopez solution; n: Number of patients.

Supplementary Table 2 Characteristics of recipients

Source	Recipients mean age				Recipients gender (M/F)				Recipients MELD			
	Solution 1		Solution 2		Solution 1		Solution 2		Solution 1		Solution 2	
Meine <i>et al</i> , 2015	IGL-1	64,1 (± 6,6)	HTK	53,3 (± 10,5)	IGL-1	76/37	HTK	41/41	IGL-1	22 (± 4,6)	HTK	26 (± 5,3)
Wiederkehr <i>et al</i> , 2014	IGL-1	51 (± 11,8)	HTK	54,9 (± 9,6)	IGL-1	40/13	HTK	103/22	IGL-1	19,9 (± 8,3)	HTK	17,5 (± 7,3)
Dondéro <i>et al</i> , 2010	IGL-1	51 (± 10)	UW	52 (± 10)	IGL-1	34/14	UW	68/24	IGL-1	17 (± 9)	UW	15 (± 8)
Nardo <i>et al</i> , 2005	HTK	51,3 (± 7,8)	CS	55,1 (± 7,9)	HTK	12/8	CS	15/5				
Cavallari <i>et al</i> , 2003	UW	49 (± 10,7)	CS	50 (± 9,7)	UW	64/26	CS	59/24				
Lopez-Andujar <i>et al</i> , 2009	UW	52,9	CS	53,1	UW	76/28	CS	75/17				
García-Gil <i>et al</i> , 2006	UW	52,2 (± 10,4)	CS	52,8 (± 9)	UW	31/9	CS	30/10				
Nardo <i>et al</i> , 2001	UW	51 (± 8,4)	CS	50 (± 9,9)	UW	41/19	CS	36/17				
Duca <i>et al</i> , 2010	UW	52,5 (± 9,9)	CS	53,4 (± 9,5)	UW	39/12	CS	37/14	UW	15,7 (± 8,9)	CS	15,3 (± 5,7)
García-Gil <i>et al</i> , 2011	UW	46,8	CS	44,0								
Lama <i>et al</i> , 2002	UW	47.7 ± 13	CS	49.4 ± 11	UW	7/3	CS	8/2				
Rayya <i>et al</i> , 2008	UW	51,1 (± 10,8)	HTK	50,3 (± 10,9)	UW	37/31	HTK	30/39				
Meine <i>et al</i> , 2006	UW	49,9 (± 12,2)	HTK	51,4 (± 12)	UW	42/23	HTK	22/14				
Erhard <i>et al</i> , 1994	UW	41.4 (±13)	HTK	43.5 (±11.8)								
Mangus <i>et al</i> , 2008	UW	49	HTK	51	UW	68/30	HTK	70/41	UW	17	HTK	18

UW: University of Wisconsin solution; HTK: Histidine-tryptophan-ketoglutarate solution; CS: Celsior solution; IGL-1: Institute Georges Lopez solution; M/F: Male/female; MELD score: Model of End Stage Liver Disease score.

Supplementary Table 3 Characteristics of donors

Source	Donors mean age				Donors gender (M/F)				CIT (min)			
	Solution 1		Solution 2		Solution 1		Solution 2		Solution 1		Solution 2	
Meine <i>et al</i> , 2015	IGL-1	44,6 (± 9,3)	HTK	45,4 (± 12,8)	IGL-1	75/38	HTK	31/34				
Wiederkehr <i>et al</i> , 2014	IGL-1	35,4 (± 16)	HTK	43,4 (± 15,5)	IGL-1	34/19	HTK	81/44	IGL-1	325,6 (± 133,3)	HTK	445,5 (± 183)
Dondéro <i>et al</i> , 2010	IGL-1	59 (± 14)	UW	54 (± 18)	IGL-1	26/22	UW	44/48	IGL-1	472 (± 142)	UW	477 (± 122)
Nardo <i>et al</i> , 2005	HTK	57,9 (± 17,1)	CS	64 (± 13,3)	HTK	7/13	CS	11/9	HTK	450 (± 91,5)	CS	458 (± 119)
Cavallari <i>et al</i> , 2003	UW	49 (± 20,3)	CS	45 (± 19,5)	UW	58/32	CS	53/30	UW	438	CS	444
Lopez-Andujar <i>et al</i> , 2009	UW	51,4	CS	54,3	UW	53/51	CS	57/35	UW	361,8	CS	323,9
García-Gil <i>et al</i> , 2006	UW	51,3 (± 20)	CS	49,4 (± 16,8)	UW	23/17	CS	25/15	UW	415,8 (± 146,2)	CS	395,3 (± 106,7)
Nardo <i>et al</i> , 2001	UW	52,9 (± 18,5)	CS	51 (± 19,5)	UW	37/23	CS	28/25	UW	438 (± 96)	CS	420 (± 108)
Duca <i>et al</i> , 2010	UW	50,7 (± 19,6)	CS	47,7 (± 16,2)	UW	31/20	CS	30/21	UW	398,2 (± 138)	CS	383,5 (± 105,2)
García-Gil <i>et al</i> , 2011	UW	33,6 (± 16,6)	CS	41 (± 14,2)					UW	540 (± 180)	CS	510 (± 180)
Rayya <i>et al</i> , 2008					UW	34/34	HTK	34/35	UW	678 (± 156)	HTK	660 (± 180)
Meine <i>et al</i> , 2006	UW	38,1 (± 14,4)	HTK	44,6 (± 14,2)	UW	40/25	HTK	25/12	UW	579,3 (± 166,3)	HTK	527,9 (± 185,5)
Erhard <i>et al</i> , 1994	UW	31.4 (±12.6)	HTK	37.5 (±12.6)					UW	563.6 (±132.7)	HTK	579.6 (±189.8)
Mangus <i>et al</i> , 2008	UW	38	HTK	38	UW	59/39	HTK	62/49	UW	480	HTK	360

UW: University of Wisconsin solution; HTK: Histidine-tryptophan-ketoglutarate solution; CS: Celsior solution;
IGL-1: Institute Georges Lopez solution; M/F: Male/female; CIT: Cold ischemia time.

Supplementary Table 4 Summary of included studies

Source	Type/group	Sample size	PNF (%)	OGS-1 (%)	PDF (%)	Early RT (%)	POD (%)	OPS-1 (%)
Meine <i>et al</i> , 2015	IGL-1	113	2,700	85		0,9	11,5	86
	HTK	65	3,100	83		1,5	13,8	86
Wiederkehr <i>et al</i> , 2014	IGL-1	53	0,000				13,4	
	HTK	125	0,700				14,4	
Dondéro <i>et al</i> , 2010	IGL-1	48	2,000	39,8		6		83,0
	UW	92	4,000	79,1		7		86,0
Nardo <i>et al</i> , 2005	HTK	20	5,000	75,0		20		85
	CS	20	0,000	90,0		20		90
Cavallari <i>et al</i> , 2003	UW	90	1,100	83,0	7,8	10,1	4,4	89
	CS	83	0,000	85,0	2,4	2,4	4,8	87
Lopez-Andujar <i>et al</i> , 2009	UW	104	1,900	80,0	15,5			83
	CS	92	2,200	81,0	15,2			83
García-Gil <i>et al</i> , 2006	UW	40	0,000	66,1	0		2,7	79,8
	CS	40	0,000	78,0	0		5,4	85,7
Nardo <i>et al</i> , 2001	UW	60	3,333	90,0		8,3	1,7	91,6
	CS	53	0,000	90,6		3,8	5,7	90,5
Duca <i>et al</i> , 2010	UW	51	0,000	60,6	0	2,0	2	66,6
	CS	51	0,000	73,5	0	3,9	3,9	82
García-Gil <i>et al</i> , 2011	UW	51	11,100		22,2	2,7		
	CS	51	11,100		22,2	11,1		
Lama <i>et al</i> , 2002	UW	10	0,000					
	CS	10	0,000					
Rayya <i>et al</i> , 2008	UW	68	1,471	78,0				78
	HTK	69	1,449	71,0				78
Meine <i>et al</i> , 2006	UW	65	3,070	94,0	9,3			87
	HTK	37	3,030	94,0	2,8			85
Erhard <i>et al</i> , 1994	UW	30	6,666					
	HTK	30	0,000					
Mangus <i>et al</i> , 2008	UW	98	5,102	84				

HTK	111	2,703	86
UW: University of Wisconsin solution; HTK: Histidine-tryptophan-ketoglutarate solution; CS: Celsior solution; IGL-1: Institute Georges Lopez solution; OGS-1: One-year post-transplant graft survival; PNF: Primary non-function; PDF: primary dysfunction; POD: Post-transplant death within 30 d; Early RT: Early retransplantation; OPS-1: One-year post-transplant patient survival.			