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Kidney Outcomes following Combined Transplantation with Liver or Pancreas

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Selection Criteria

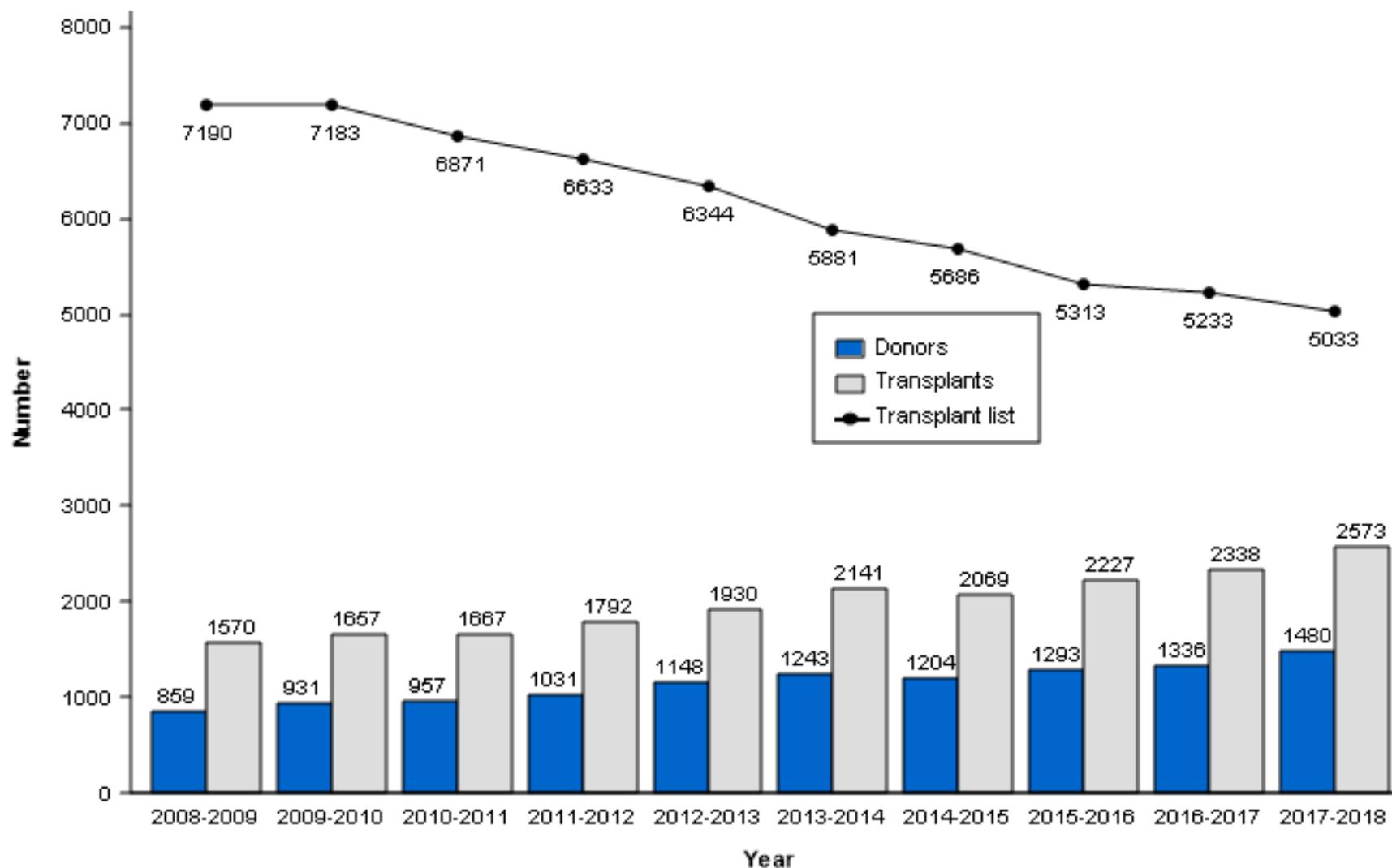
- Simultaneous liver and kidney (SLK) transplantation is only undertaken in patients requiring a liver transplant when there is evidence of kidney failure that will not recover with a liver transplant alone
- Simultaneous pancreas and kidney (SPK) transplantation is undertaken in patients with insulin treated diabetes that are also receiving dialysis or have a calculated or measured GFR of 20mls/min or less at the time of listing.

Offering

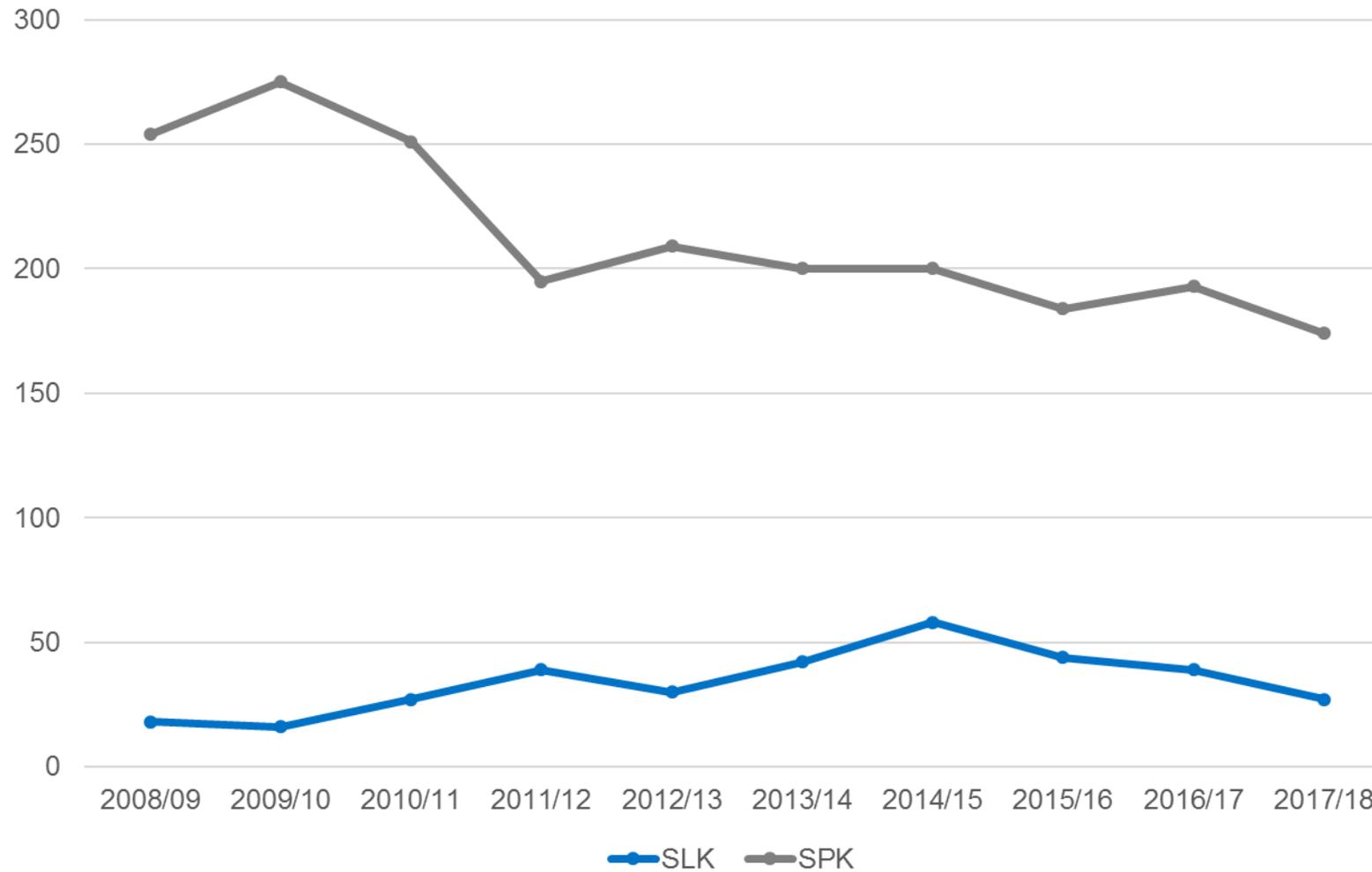
- SLK: If the liver offering sequence for a DBD adult donor shows an elective recipient who requires an SLK amongst the top three recipients, Hub Operations will delay offering one kidney after elective offering commenced or until the combined liver kidney patient declines. A provisional offer is made subject to there not being highly sensitised patients (Tiers A-C) to whom both kidneys should be allocated by the kidney offering scheme
- SPK: One kidney is made available to the pancreas offering scheme after the top 3 tiers of the kidney offering scheme. If the pancreas is accepted without the kidney, the kidney is offered through the kidney offering scheme

Activity

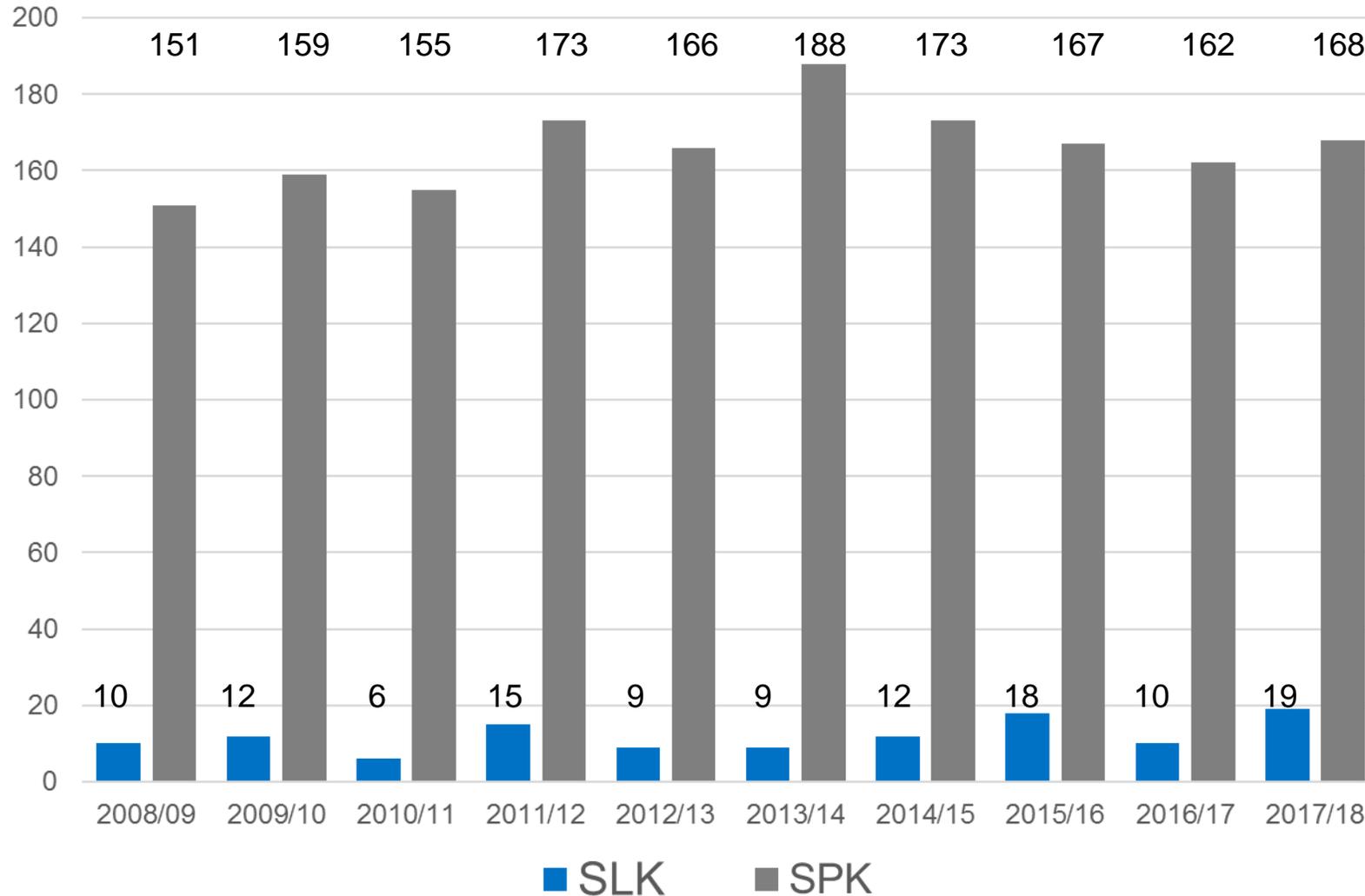
UK Deceased donor kidney programme



Transplant list for SLK and SPK



Deceased donor kidney transplants by type



Demographics

Transplants 2008-2016

		Kidney only (n=12699)	SLK (n=91)	SPK (n=1332)
Age group	18-29	940 (7%)	9 (10%)	82 (6%)
	30-49	4570 (36%)	26 (29%)	953 (72%)
	50-64	5018 (40%)	49 (54%)	293 (22%)
	65 or above	2171 (17%)	7 (8%)	4 (0%)
Sex	Male	8016 (63%)	47 (52%)	774 (58%)
	Female	4676 (37%)	44 (48%)	558 (42%)
	Unknown	7 (0%)	0 (0%)	0 (0%)
Ethnic group	White	9531 (75%)	76 (84%)	1183 (89%)
	Asian	1801 (14%)	12 (13%)	81 (6%)
	Black	962 (8%)	2 (2%)	42 (3%)
	Other	355 (3%)	1 (1%)	17 (1%)
	Unknown	50 (0%)	0 (0%)	9 (1%)
On dialysis at transplant	No	1542 (12%)	29 (32%)	367 (28%)
	Yes	11144 (88%)	38 (42%)	962 (72%)
	Unknown	13 (0%)	24 (26%)	3 (0%)

Donor and Transplant Characteristics

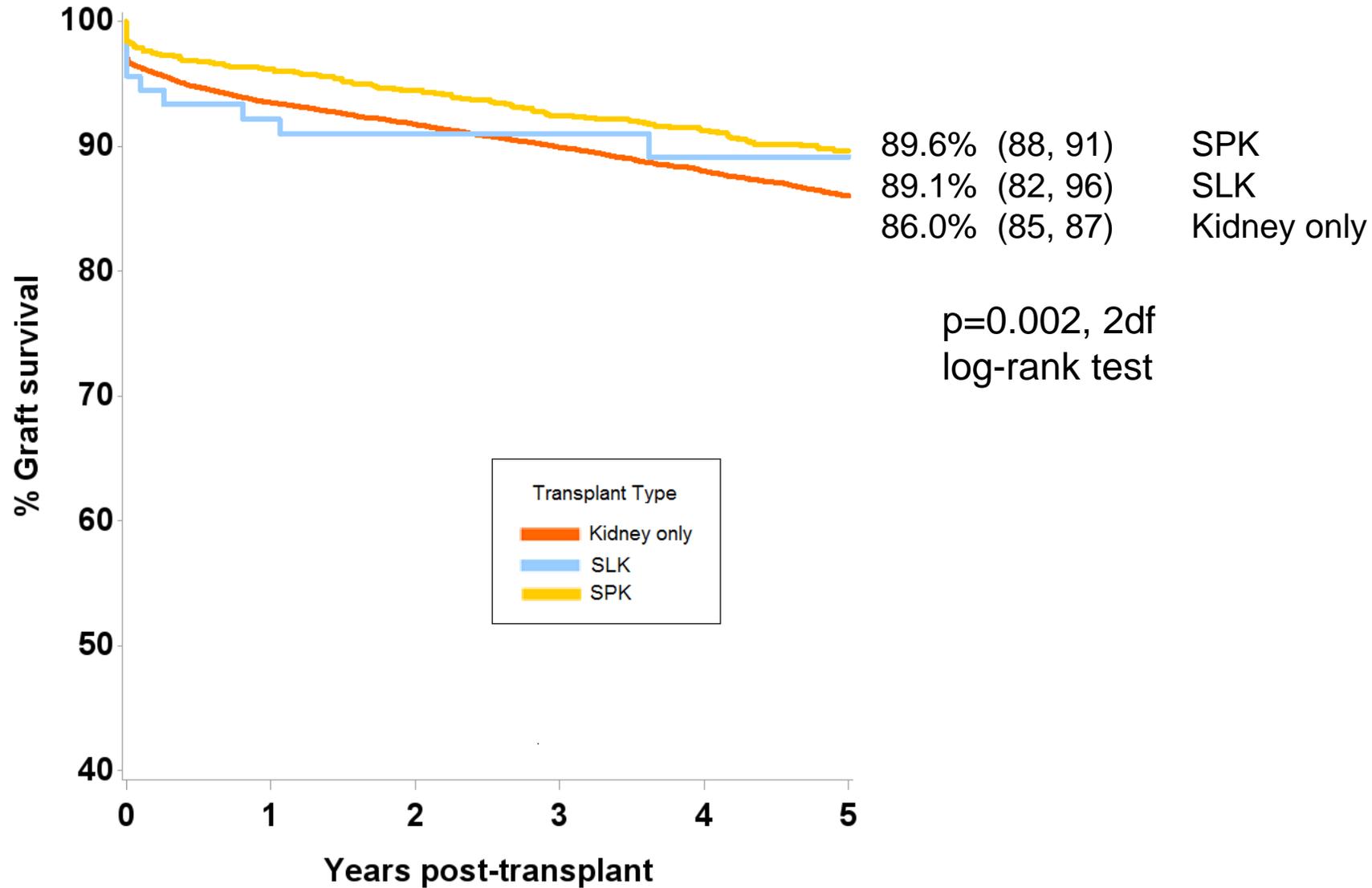
Transplants 2008-2016

		Kidney only (n=12699)	SLK (n=91)	SPK (n=1332)
Donor age	Mean (SD)	49.8 (15.4)	46.6 (14.1)	35.5 (13.7)
Donor type	DBD	7771 (61%)	89 (98%)	1063 (80%)
	DCD	4928 (39%)	2 (2%)	269 (20%)
Mismatch Level	1	1683 (13%)	0 (0%)	6 (0%)
	2	4018 (32%)	3 (6%)	76 (6%)
	3	6160 (49%)	12 (22%)	413 (31%)
	4	837 (7%)	38 (72%)	837 (63%)
Cold Ischaemic Time (hours)	Mean (SD)	15.1 (5.2)	14.3 (4.2)	13.6 (3.6)

Transplant Outcomes

Five year graft survival

Transplants 2008-2016



Multivariable model 5 year graft survival

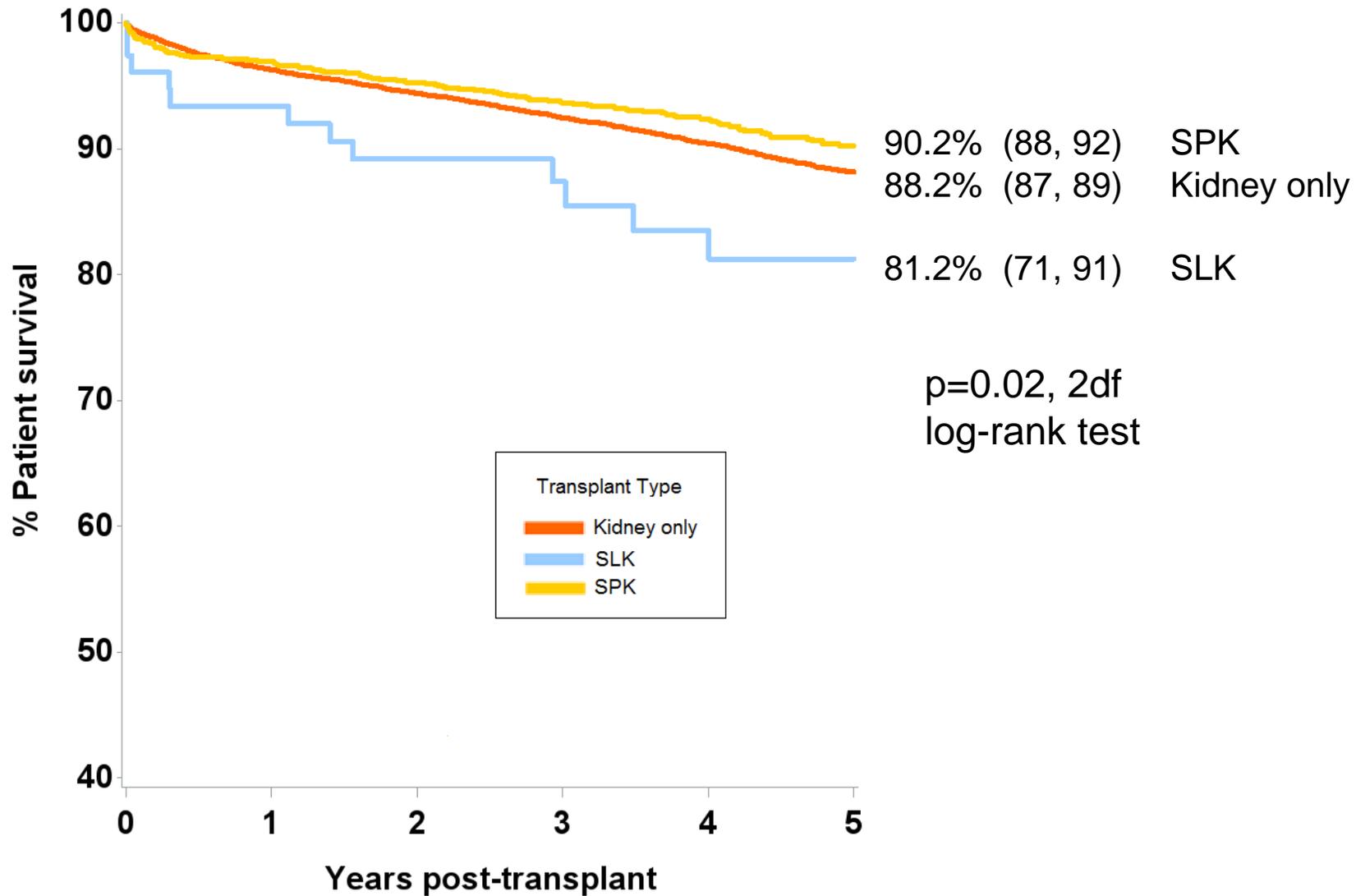
Transplants 2008-2016

Transplant type	N	Hazard Ratio	95% CI	p-value
Kidney only	10852	1	-	-
Liver and kidney	77	0.64	(0.2, 2.0)	0.44
Pancreas and kidney	1279	1.03	(0.8, 1.3)	0.81

Adjusting for dialysis at registration, recipient age, recipient ethnic group, donor age, donor hospital stay, donor eGFR, donor height, donor sex, donor hypertension, mismatch level, cold ischaemic time

Five year patient survival

Transplants 2008-2016



Multivariable model 5 year patient survival

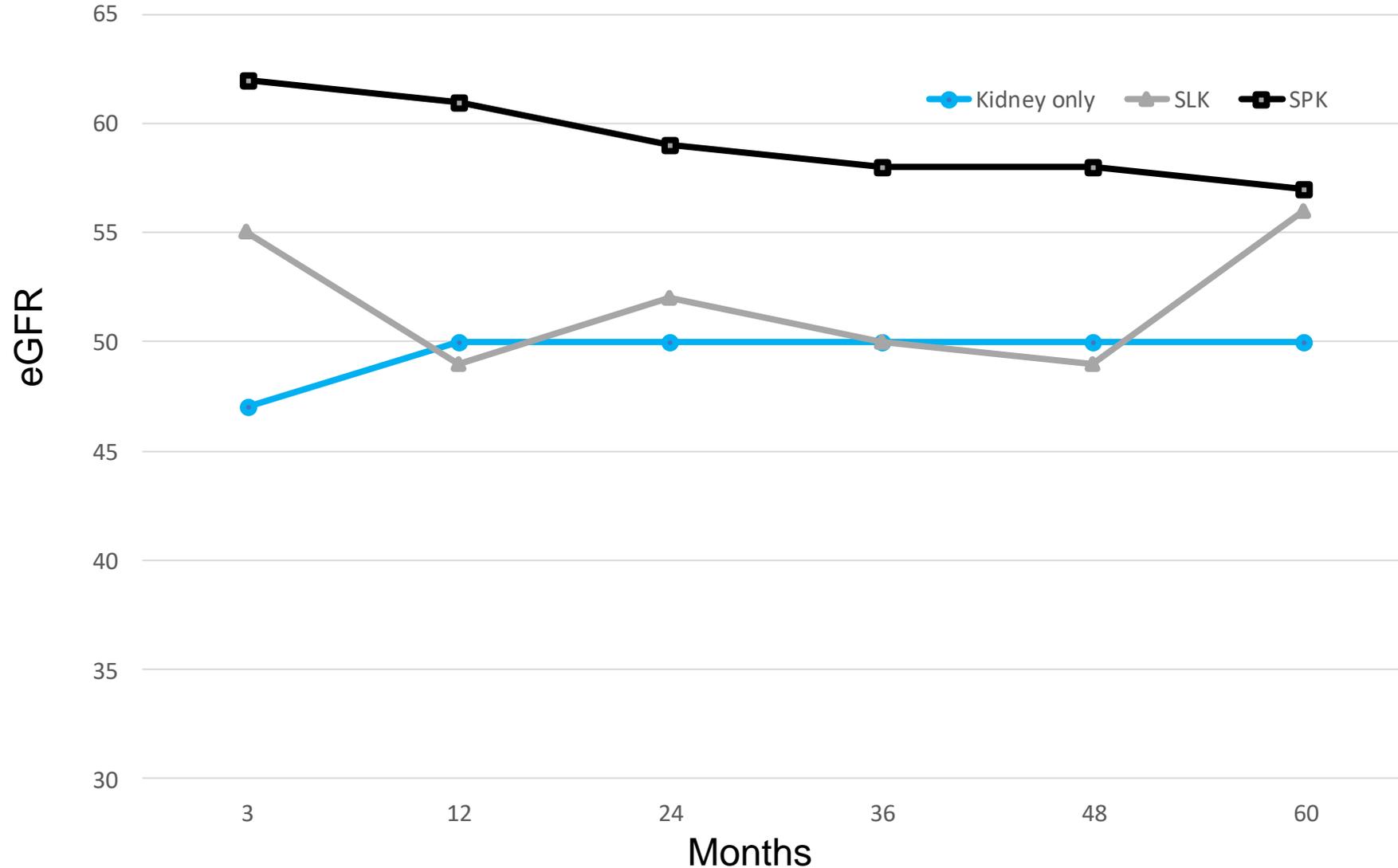
Transplants 2008-2016

Transplant type	N	Hazard Ratio	95% CI	p-value
Kidney only	10853	1	-	-
Liver and kidney	77	1.96	(0.9, 4.4)	0.10
Pancreas and kidney	1280	1.18	(0.9, 1.5)	0.21

Adjusting for time on dialysis, recipient age, recipient ethnic group, diabetes, donor age, donor hypertension, mismatch level, cold ischaemic time

Five year median eGFR

Transplants 2008-2016



Delayed graft function

Transplants 2008-2016

Transplant type	Immediate	Delayed	Primary non-function	Not reported/unknown
Kidney only	8101 (64%)	3281 (26%)	317 (3%)	1000 (8%)
Liver and kidney	48 (53%)	7 (8%)	3 (3%)	33 (36%)
Pancreas and kidney	1042 (78%)	203 (15%)	19 (1%)	68 (5%)

Summary

- There have been 120 simultaneous liver kidney, and 1662 simultaneous pancreas and kidney transplants in the last 10 financial years
- After adjusting for risk factors, graft survival outcomes of kidneys in patients receiving simultaneous liver kidney, or simultaneous pancreas and kidney transplants are comparable
- Patient survival outcomes are worse in patients receiving a simultaneous liver kidney transplant, but not significantly worse after risk adjustment