

NOME COGNOME

Il Trapianto di rene DCD e DBD in
ECMO: risultati simili?

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RETE NAZIONALE
TRAPIANTI

6.7.8 NOVEMBRE

ROMA

Table 1. Partial Pressures of PaO₂ in Brain-dead Donors

	PaO ₂ (mm Hg) (Pre-ECMO)	PaO ₂ (mm Hg) (Post-ECMO 30 min)	PaO ₂ (mm Hg) (Post-ECMO 2 h)	PaO ₂ (mm Hg) (Post-ECMO 4 h)
Donor 1	46	65	93	102
Donor 2	49	79	140	109
Donor 3	75.5	142.9	130	114.7
Donor 4	58	107	80	65

VA-ECMO was used only for donor 2. The others received VV-ECMO.

Abbreviations: PaO₂, arterial oxygen; ECMO, extracorporeal membrane oxygenation.

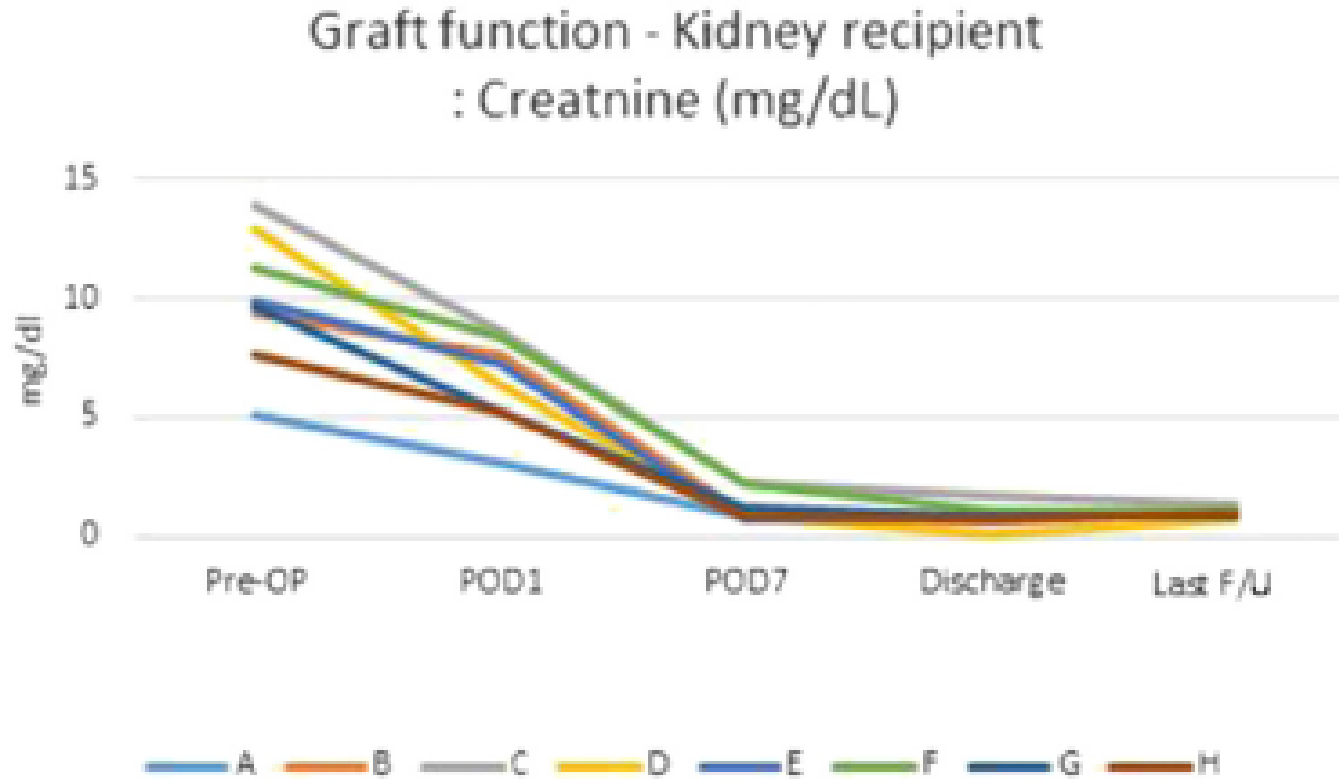


Fig 2. Creatinine trends in kidney recipients (A–H: kidney recipients). Abbreviations: Pre-OP, preoperative; POD1, postoperative day 1; POD7, postoperative day 7; F/U, follow-up.



PERFUSION THEORY



ADVANTAGES COMPARED TO STATIC COLD STORAGE

- Maintains and increases the **patency of the vascular bed**
- Provides more effectively **nutrients and oxygen** to support energy demands
- Removes **metabolic by-products and toxins** (Lactic acid, ROS...)
- Ensures **real-time graft quality and function** evaluation
- May allow the use of **cryoprotective agents** and **immunomodulatory drugs**



EDITORIAL COMMENT

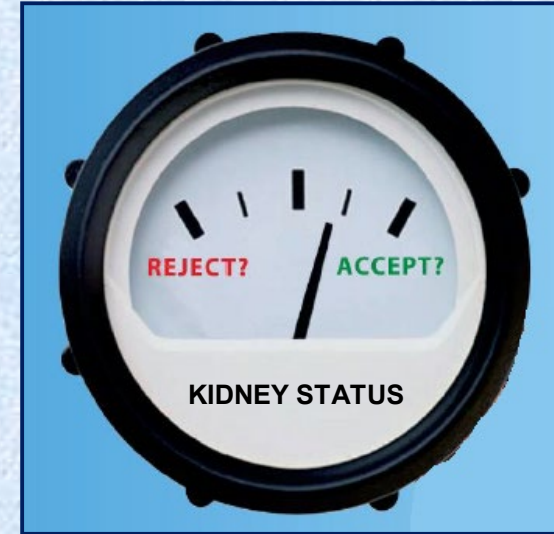
Time to think out of the (ice) box Jacques Pirenne

Abdominal Transplant Surgery, Leuven, Belgium

Current Opinion in Organ Transplantation 2010, 15:147–149



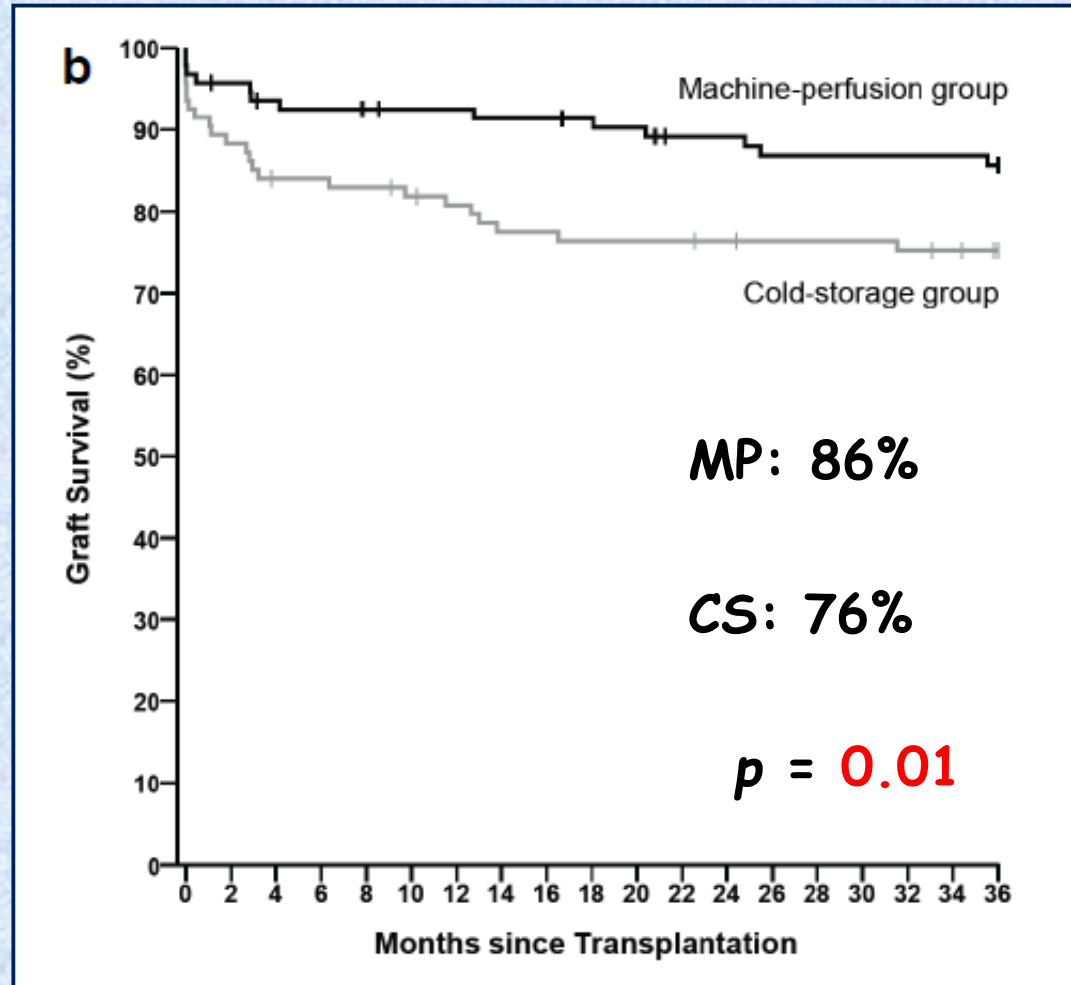
- Preservation
- Reconditioning
- Function evaluation



- Real-time monitoring of flow and RR
- **Assesment of graft quality and viability ?**



LITERATURE REVIEW



The NEW ENGLAND
JOURNAL of MEDICINE

188 ECD single KT

94 MP

94 CS

Moers et al, NEJM 2012



LITERATURE REVIEW



Table 3: Renovascular resistance values and their accompanying percentage of primary nonfunction

Renovascular resistance T_0 (mmHg/mL/min/100 g)	≥ 0.5	≥ 1.0	≥ 1.5	≥ 2.0	≥ 2.5	≥ 3.0
N	369	160	61	26	12	7
Primary nonfunction	19%	25%	26%	38%	58%	85%



American Journal of Transplantation 2011; 11: 2685–2691
Wiley Periodicals Inc.

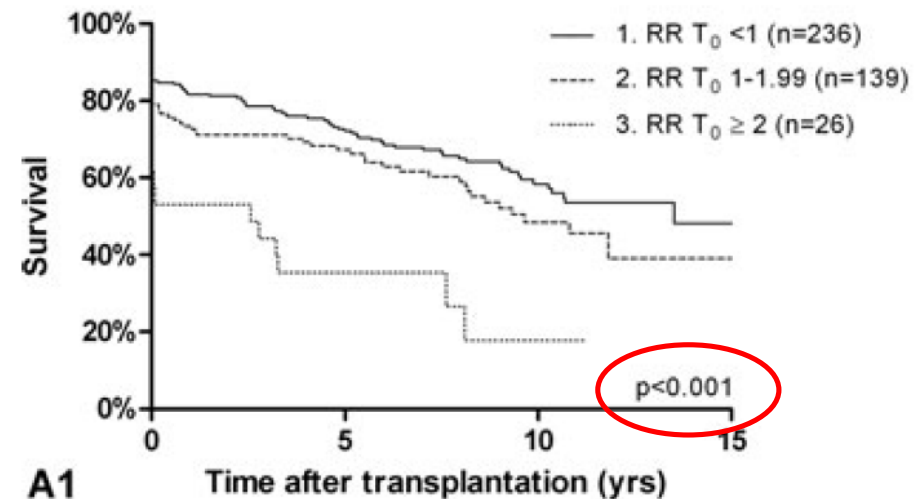
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doi: 10.1111/j.1600-6143.2011.03755.x

Renovascular Resistance of Machine-Perfused DCD Kidneys Is Associated with Primary Nonfunction

E. E. de Vries^a, E. R. P. Hoogland^a, B. Winkens^b,
M. G. Snoeijs^a and L. W. E. van Heurn^a

Graft survival of all transplanted grafts



440 DCD KIDNEYS

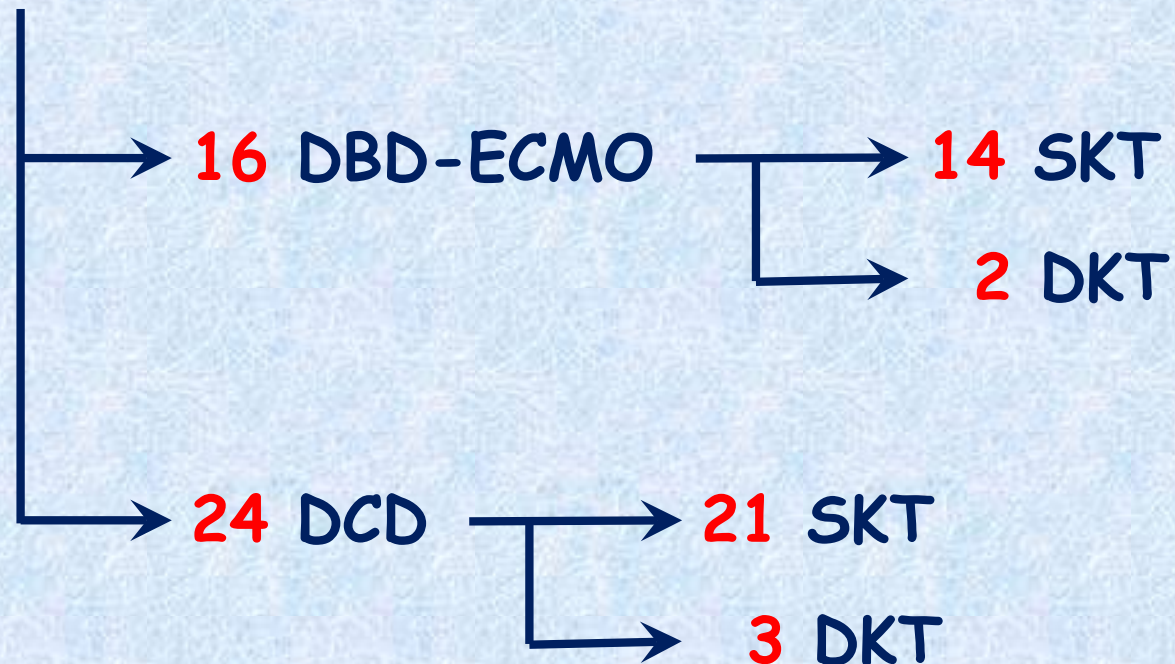


OSR EXPERIENCE



Period: June 2015 - June 2019

40 TRANSPLANTS (**45** GRAFTS)





OSR EXPERIENCE



24 DCD DONORS

Maastricht class II **14** donors



Maastricht class III **10** donors



OSR EXPERIENCE

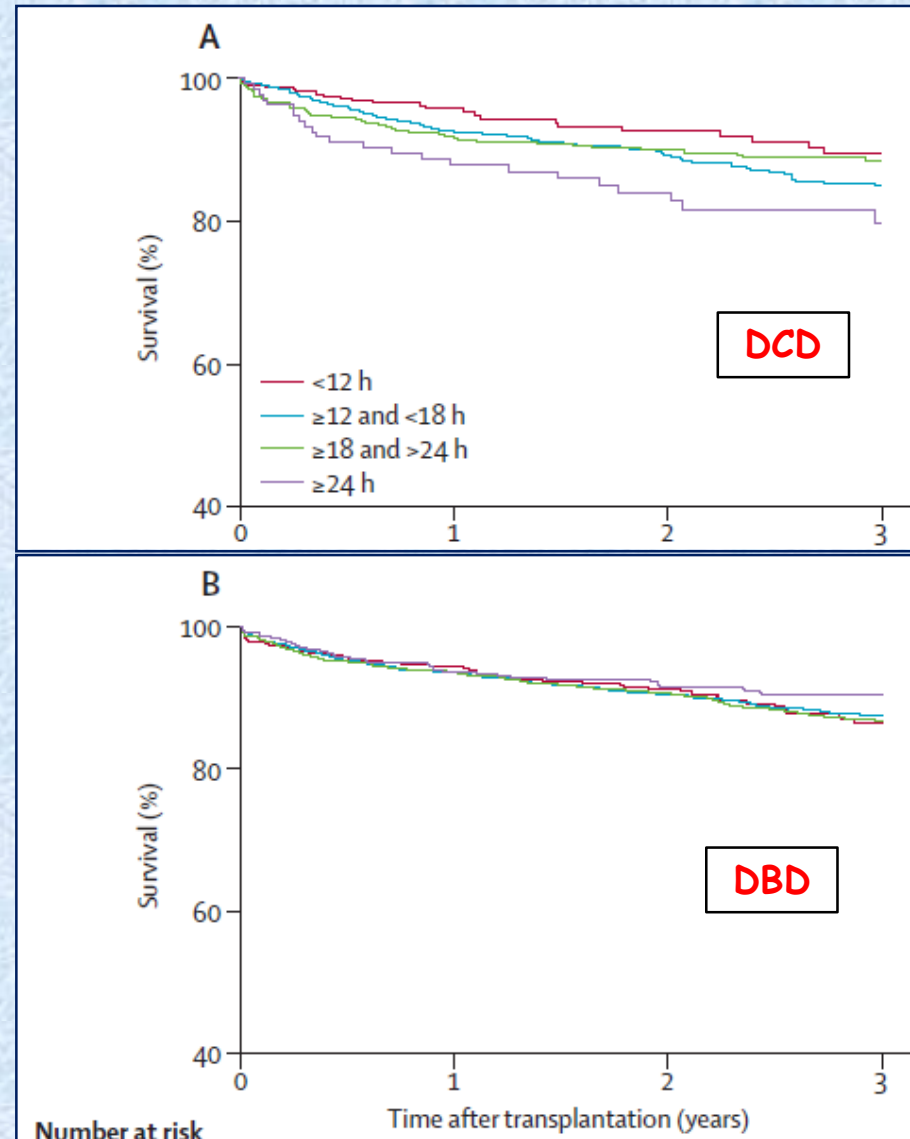


COMPARISON

	DBD-ECMO	DCD	<i>p</i>
Donor's age	54.1±10.6 y	51.2±9 y	0.360
Recipient's age	50.9±12.5 y	48.6±7.1 y	0.509
WIT	37.6±7.9 min	37.2±4.6 min	0.844
CIT	14.1±4.1 h 	14.1±3.3 h 	0.975



OSR EXPERIENCE





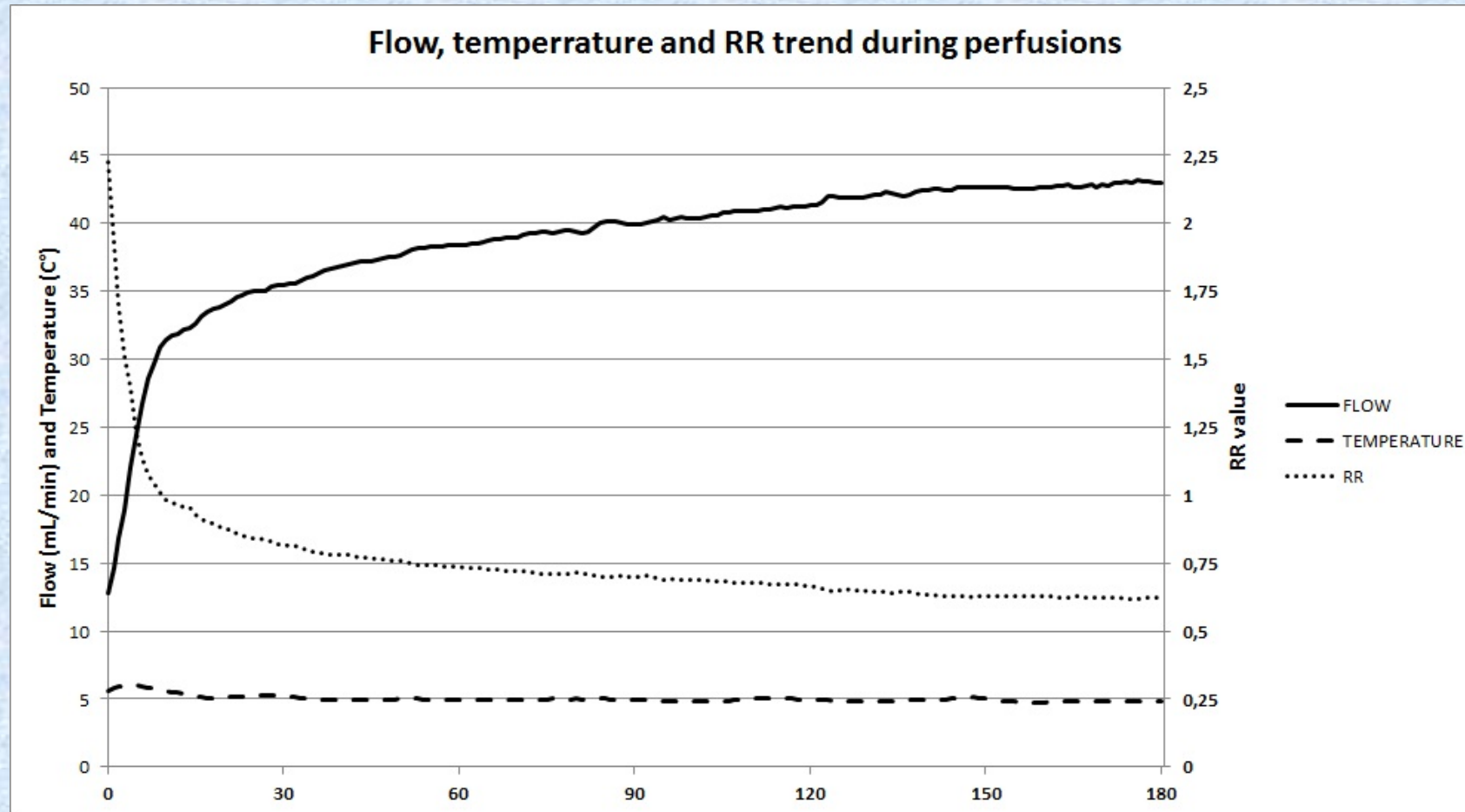
OSR EXPERIENCE



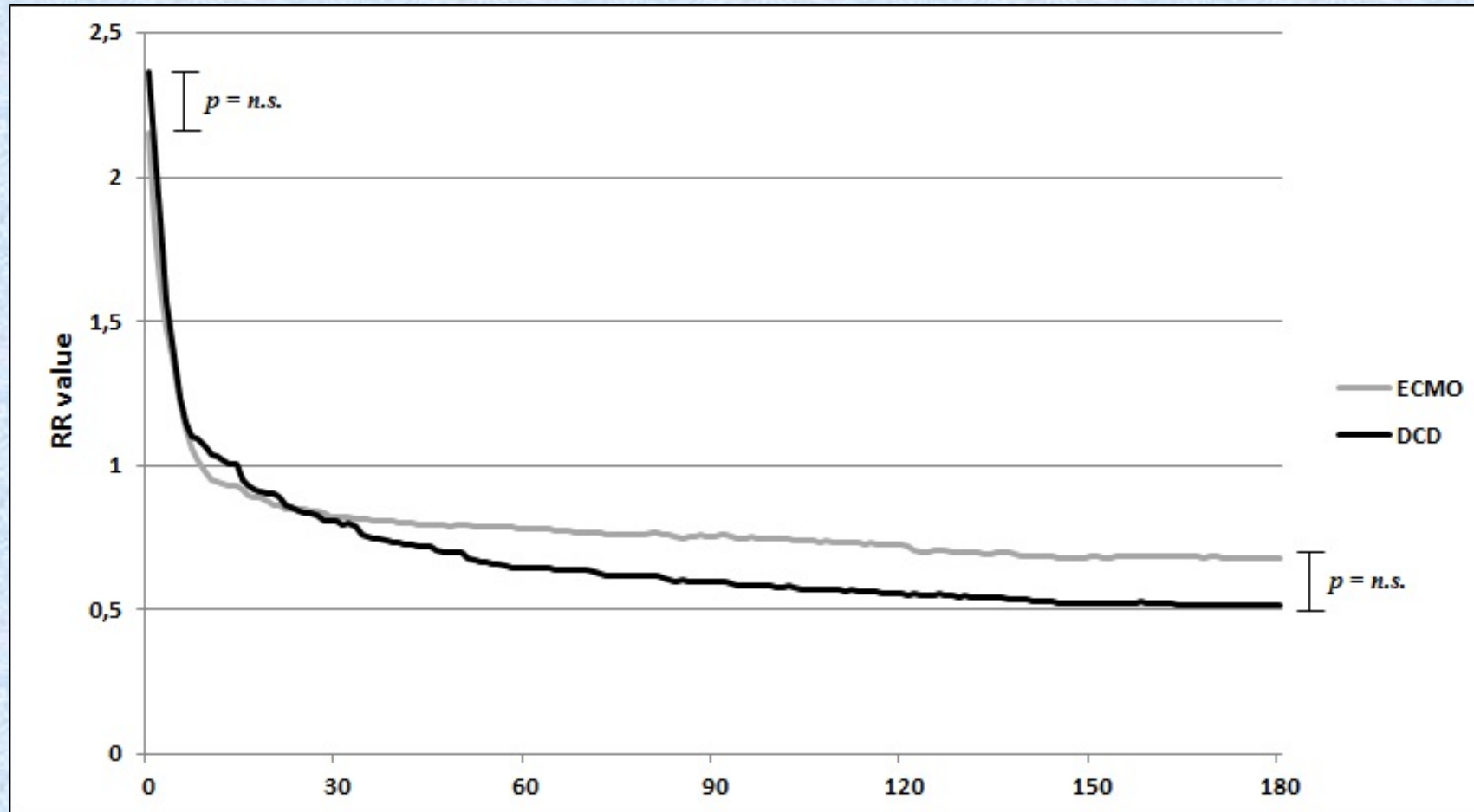
POST-OP OUTCOME

	DBD-ECMO	DCD	<i>p</i>
PNF	0 (0%)	1 (4%)	1.000
DGF	2 (13%)	10 (46%)	0.041

OVERALL TREND



ECMO vs. DCD

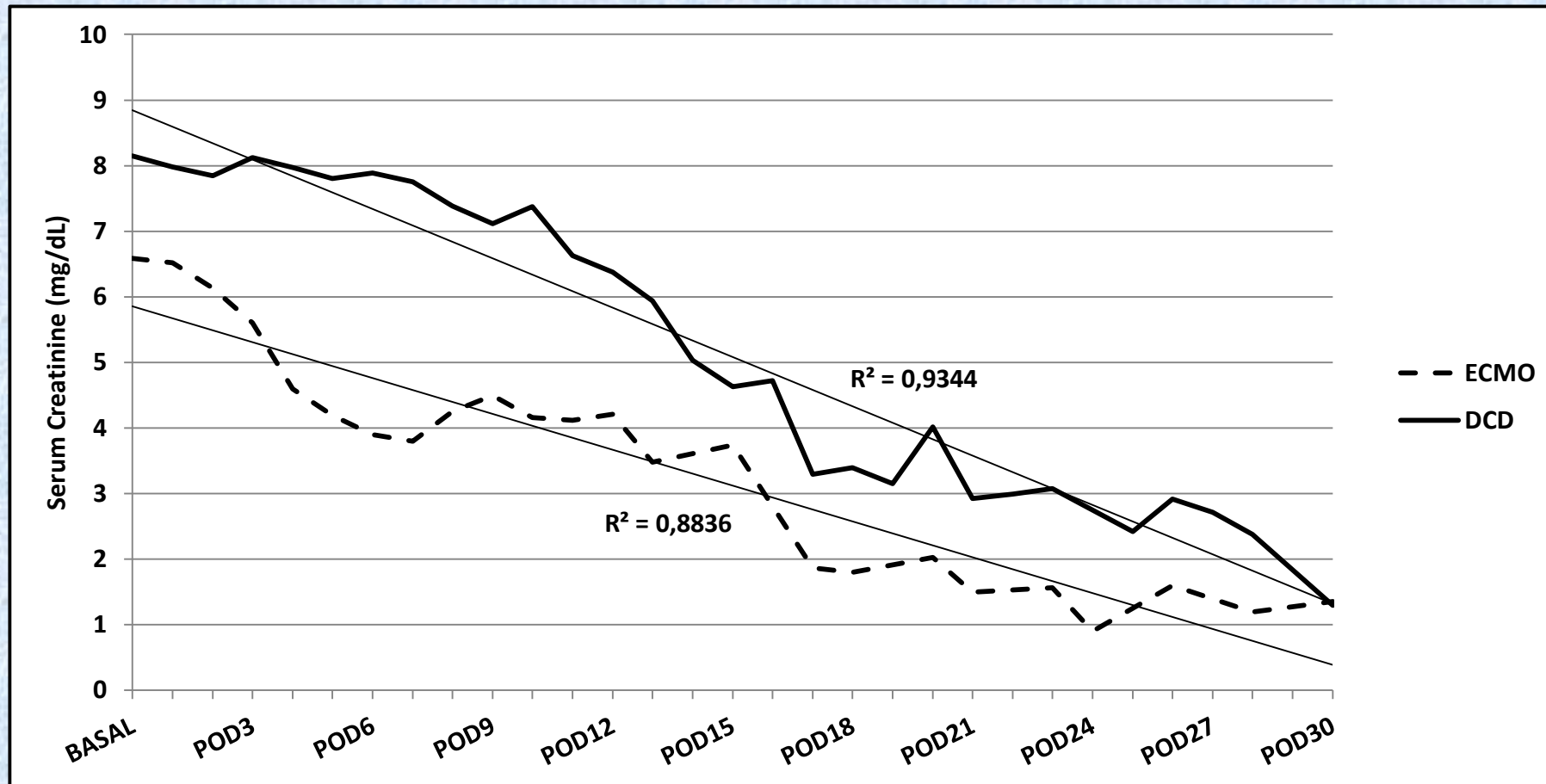




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POST-OP OUTCOME

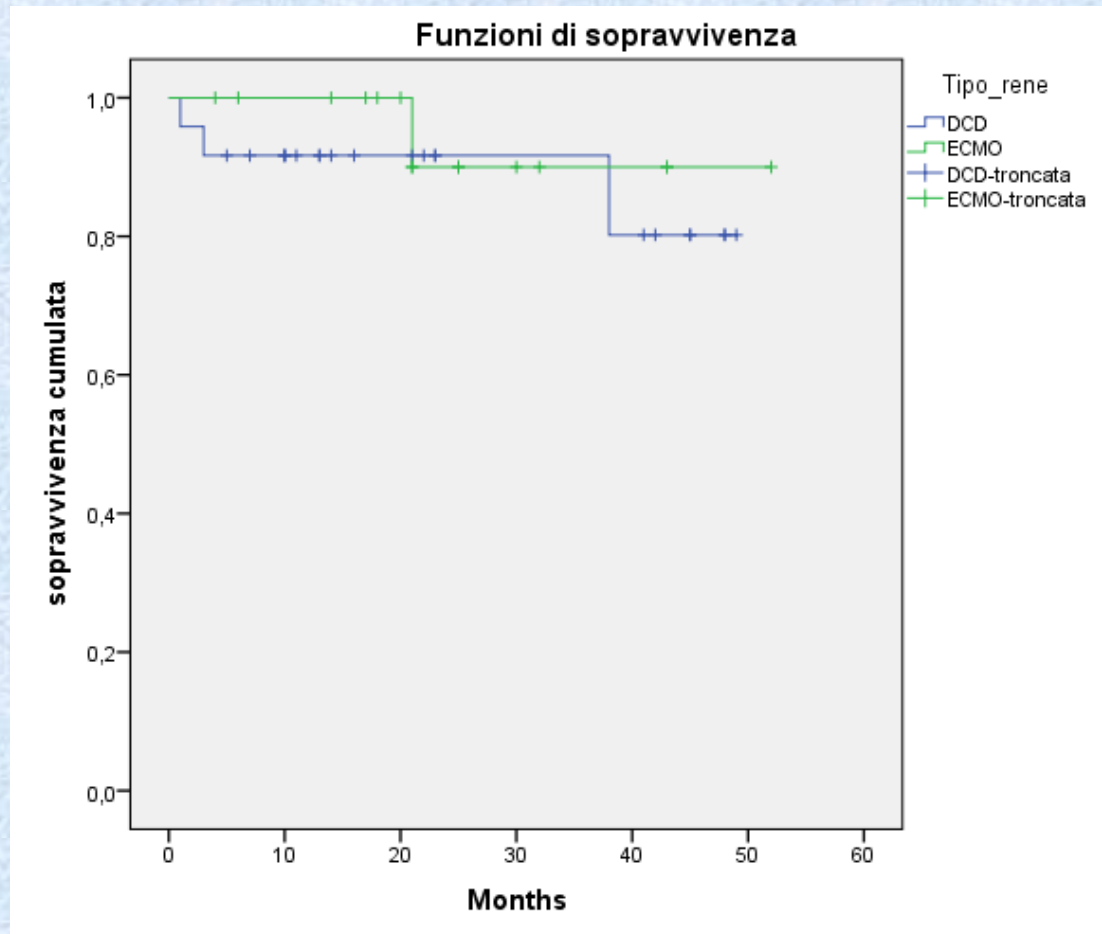




OSR EXPERIENCE



GRAFT SURVIVAL



DBD-ECMO

OS: 94%

48.9±2.9 months

DCD

OS: 86%

43.8±2.8 months

***p* 0.577**



OSR EXPERIENCE



IS BIOPSY
NEEDED?



OSR EXPERIENCE



BIOPSY SCORE

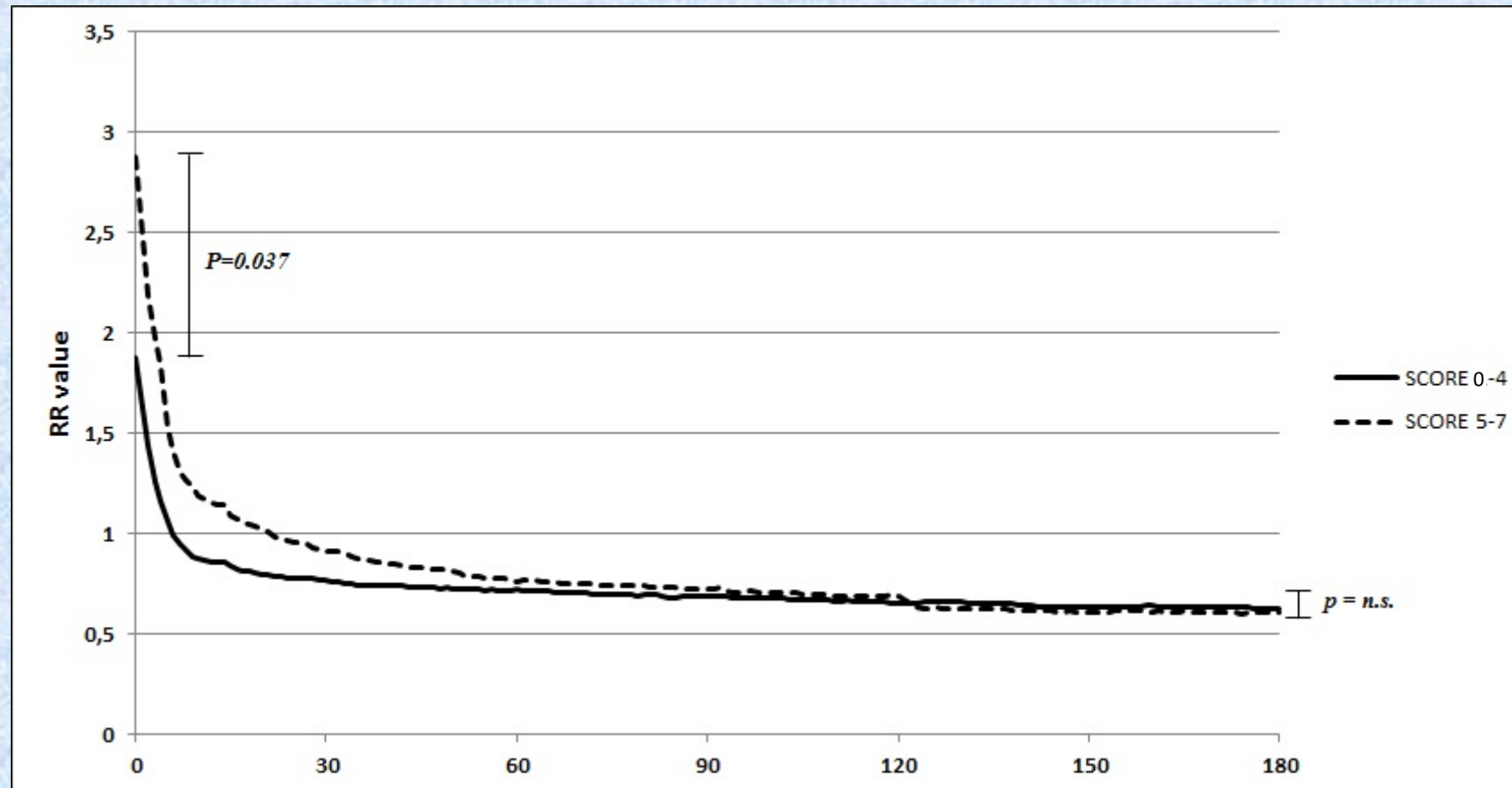
	DBD-ECMO	DCD	<i>p</i>
0-4	12 (71%)	20 (74%)	1.000
5-6	5 (29%)	7 (26%)	



OSR EXPERIENCE



SCORE 0-4 vs. SCORE 5-7

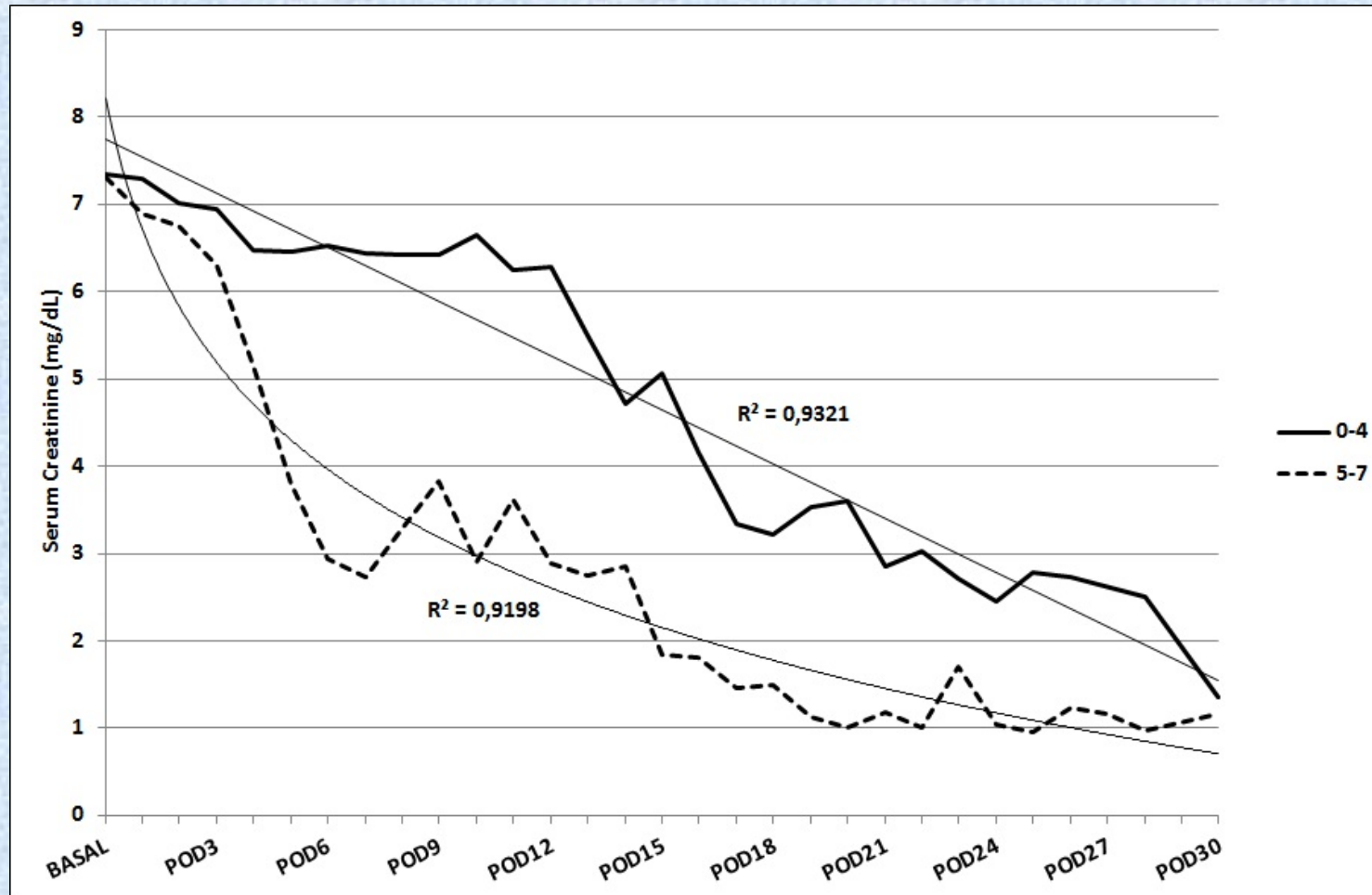




OSR EXPERIENCE



POSTOPERATIVE OUTCOME

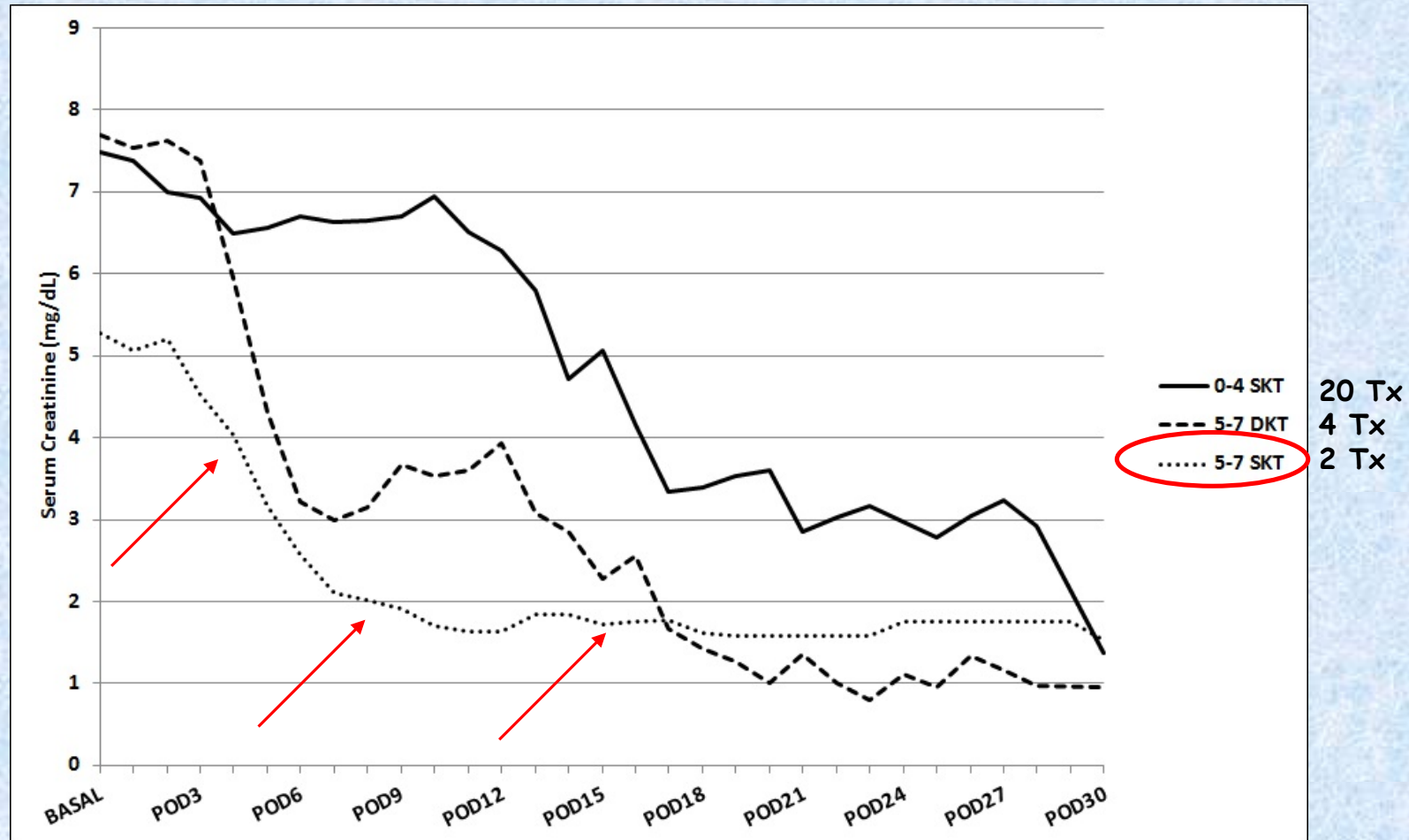




OSR EXPERIENCE



POSTOPERATIVE OUTCOME



TAKE-HOME MESSAGES

- DCD and DBD-ECMO are good quality donors and post operative outcome is comparable to stand DBD donors
- Properly reconditioned kidneys have a low DGF and PNF rate, and better postoperative recovery
- Biopsy score has no predictive value on postoperative outcome
- Machine perfusion may be used as quality assessment tool in those kind of graft