SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

Kidney paired donation in pediatrics: An underused opportunity?

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Disclosures

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Kidney Paired Donation

- Opportunity for ABO-mismatched or HLA-incompatible pairs to receive a living donor transplant
- Superior graft survival among living donor kidney recipients is of particular importance in the pediatric population, who will likely require multiple transplants in their lifetime
- Potential strategy to increase living donation in this population
- Use in pediatric population is not well described

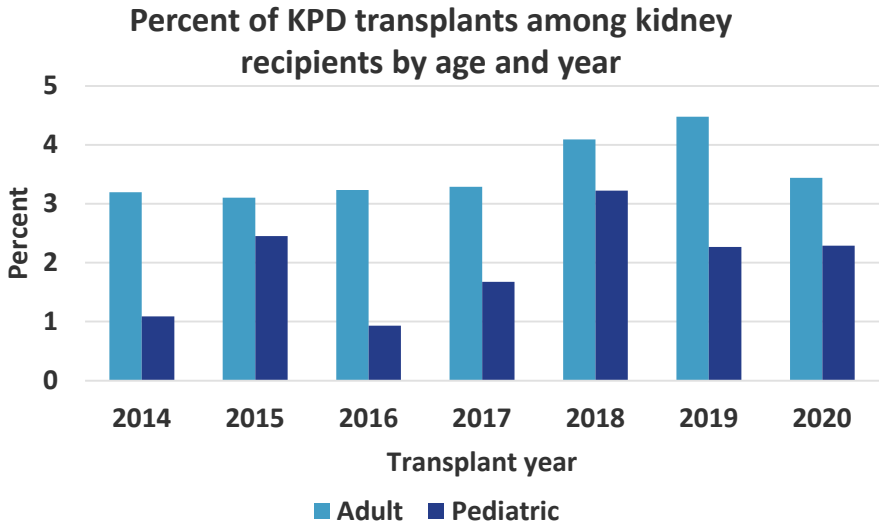
Study objective

- To describe kidney paired donation in the pediatric population
  - Trends in use over time
  - Characteristics of recipients
  - Characteristics of centers
  - Outcomes

Study methods

- SRTR kidney transplant recipients, 2014-2020
- KPD use vs. DD among children and adults
- Characteristics of pediatric recipients by donor status, KPD vs. DD
- Outcomes among pediatric recipients by donor status, KPD vs. DD

KPD in children vs. adults, 2014-2020

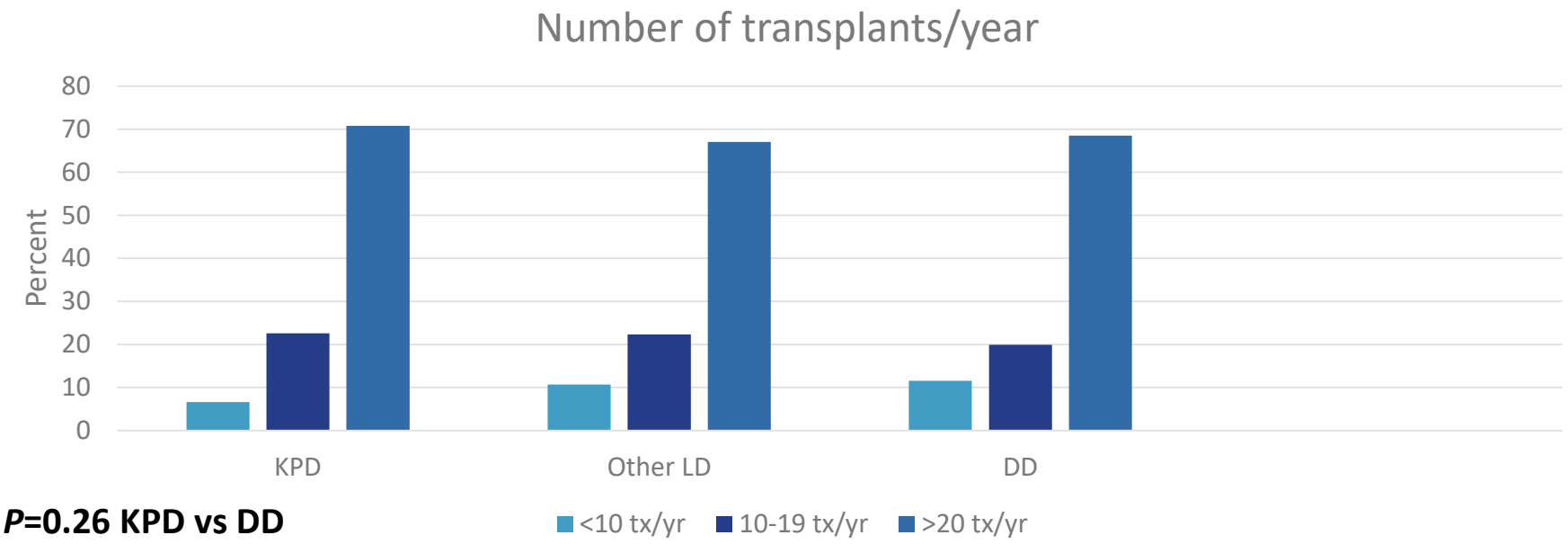


	Adults		Children	
Donor type	N	%	N	%
KPD	5308	3.6	106	2.0
LD	34,134	23.1	1603	30.2
DD	108,371	73.3	3597	67.8

Results: Recipient characteristics

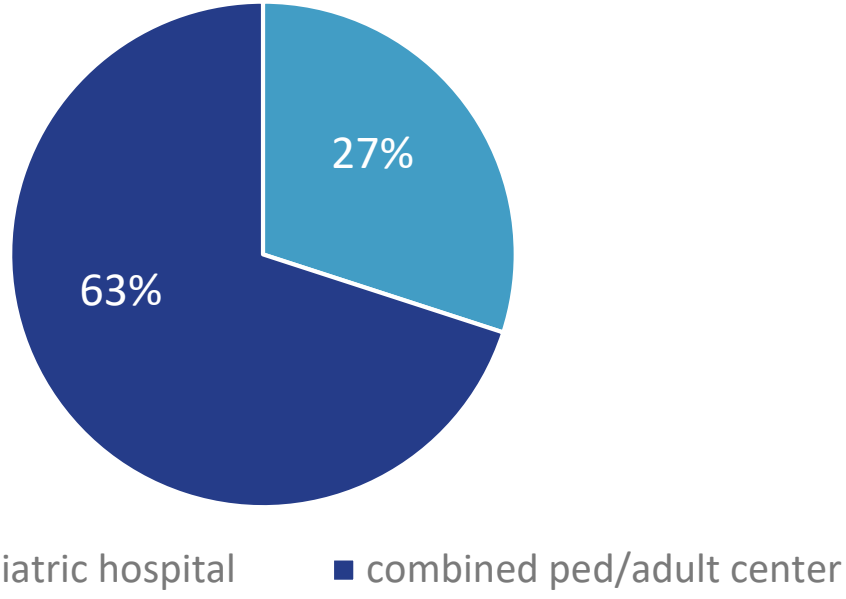
		KPD n=106	DD n=3597	*P* value
Race/ethnicity	White	68 (64.2%)	1368 (38.0%)	<0.0001
	Black	17 (16.0%)	832 (23.1%)	
	Hispanic	17 (16.0%)	1090 (30.3%)	
Blood type	A	41 (38.7%)	1080 (30.0%)	0.006
	B	21 (19.8%)	442 (12.3%)	
	O	40 (37.7%	1942 (54.0%)	
Prior transplant	Yes	14 (14.2%)	283 (7.9%)	0.019
PRA	<20%	72 (67.9%)	2871 (79.8%)	< 0.0001
	20-<85%	29 (27.4%)	438 (12.2%)	
	85-100%	5 (4.7%)	130 (3.6%)	

Transplant center volume and KPD



***P*=0.26 KPD vs DD**

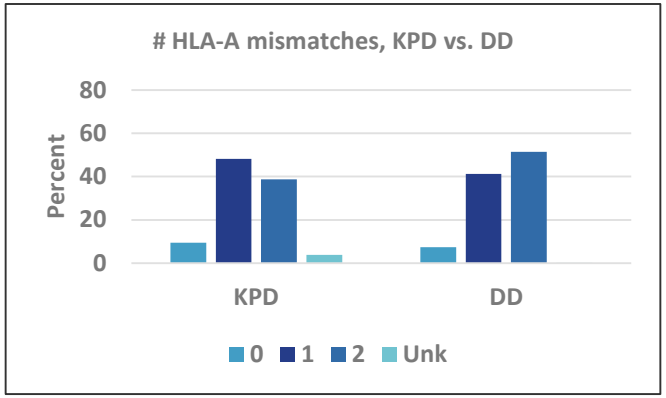
Center characteristics: Type of center

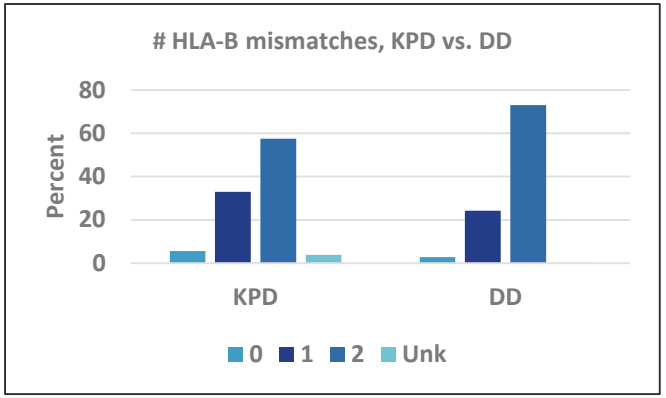


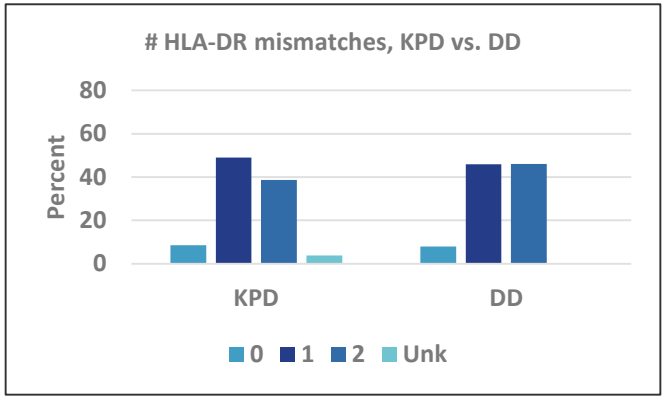
Outcomes

- HLA match
- DGF
- GFR
- Graft survival

HLA mismatches

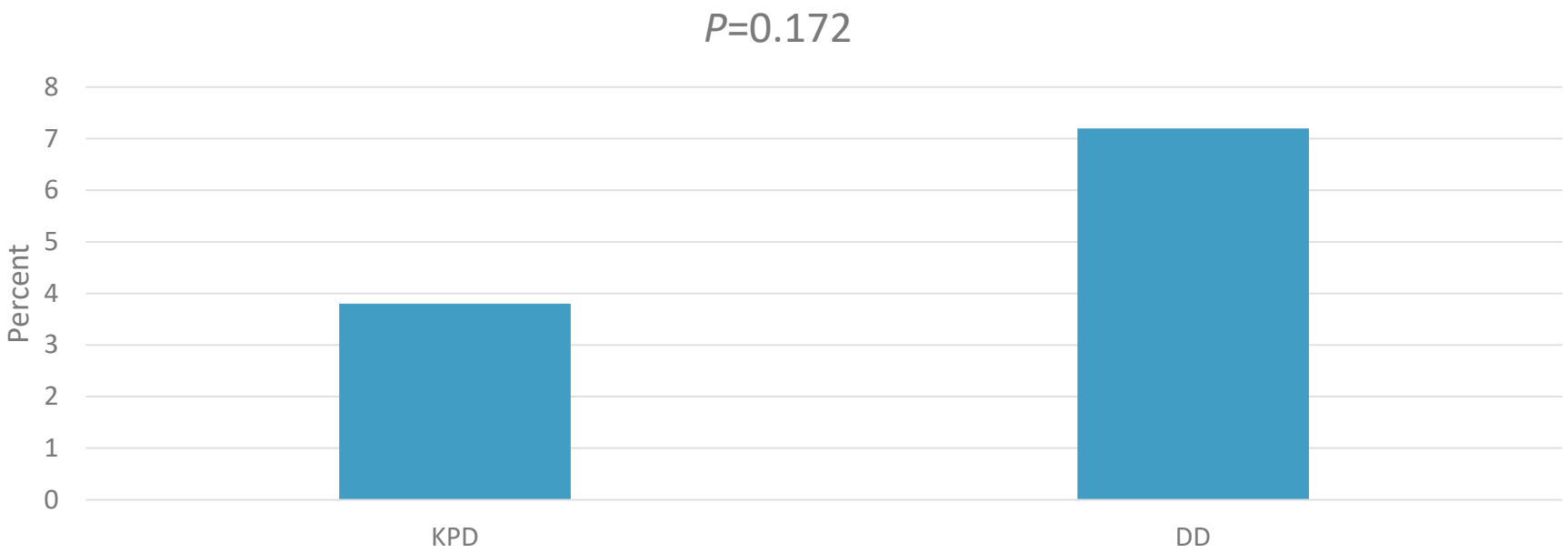




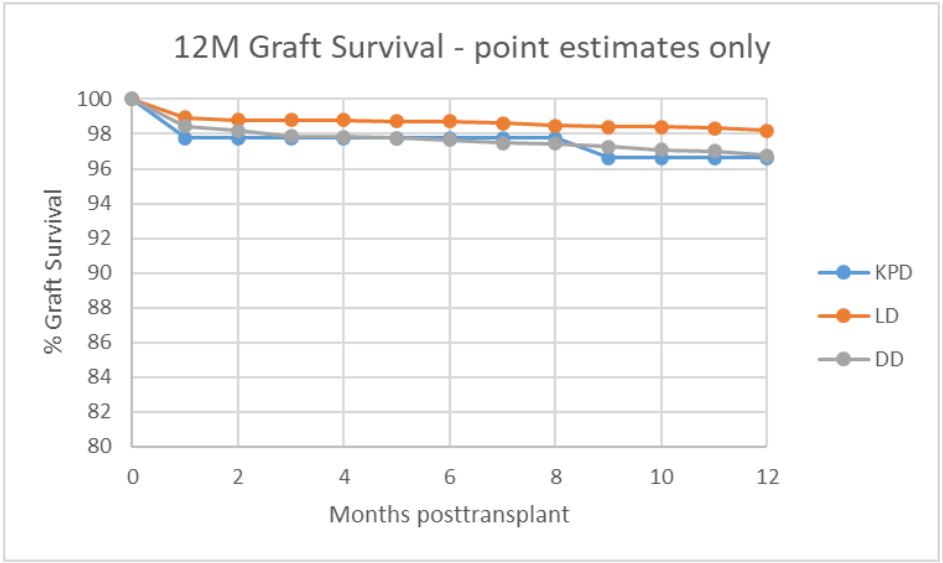


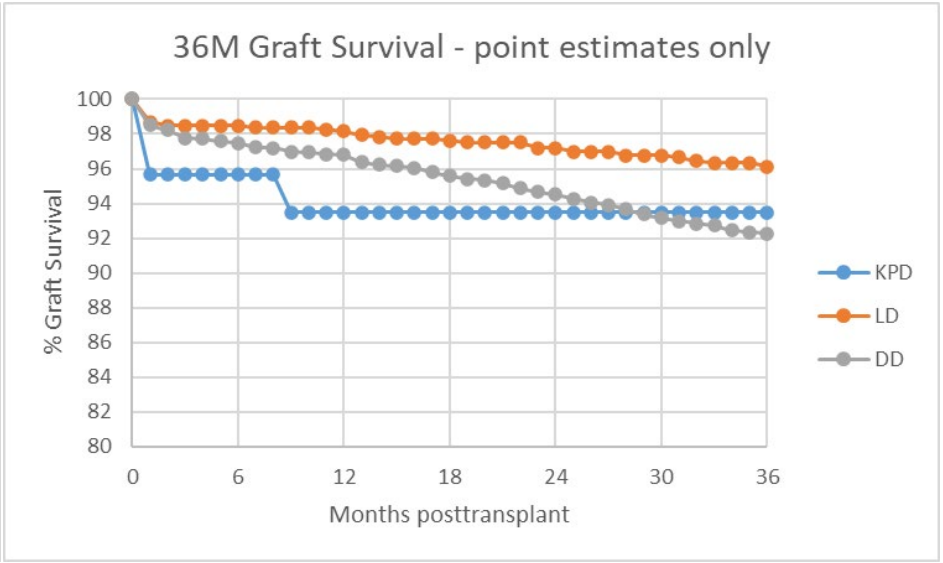
KDP transplants have fewer 2-mismatch transplants for each locus

Delayed graft function



Graft survival





No difference between KPD and DD outcomes were detected at 12M or 36M.

Limitations

- Small numbers
- Follow-up duration

Conclusions

- Low number of pediatric kidney transplants from KPD
- Lower DGF and better HLA matching in KPD vs DD
- Potential to provide increased transplant opportunities for pediatric recipients
- Next step is to assess barriers to participation in KPD programs

CDRG

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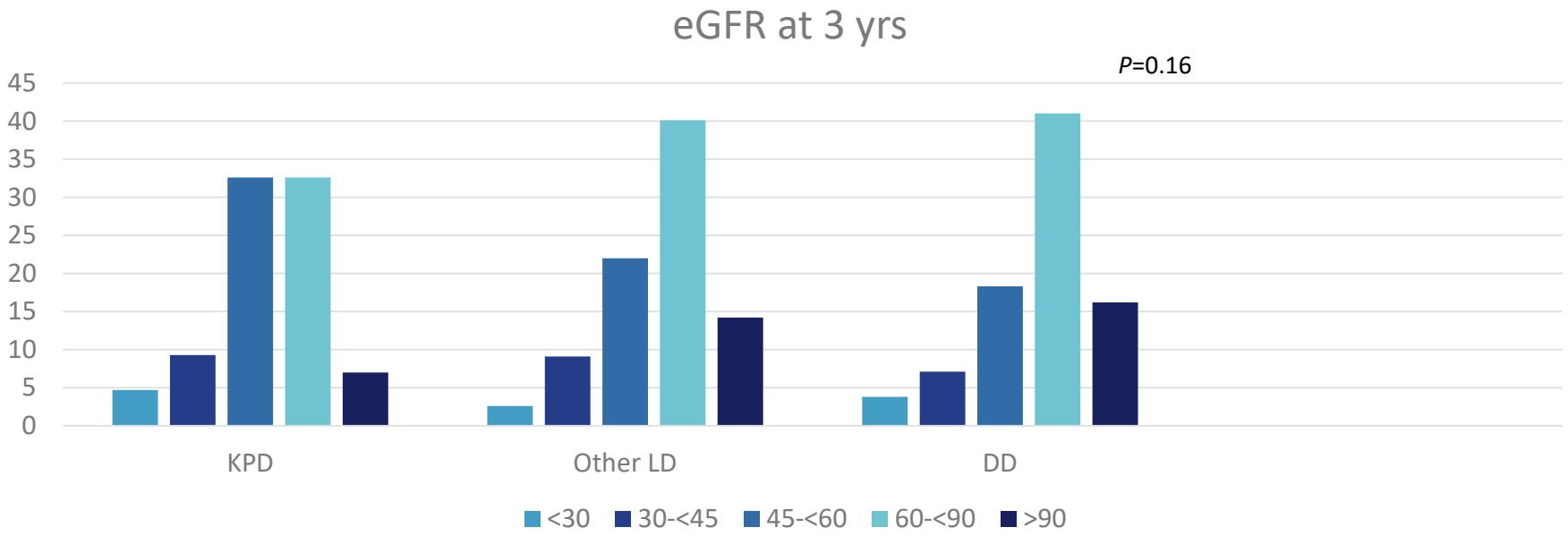
SRTR

		KPD n=106	Other living donor n= 1603	DD n=3597	*P* value
Donor age	0-17 yrs	0	0	926 (25.7%)	na
	18-34 yrs	52 (59.1%)	595 (37.1%)	2296 (63.8%)	
	35-49 yrs	54 (50.9%)	872 (54.4%)	366 (10.2%)	
	≥ 50 yrs	9 (8.5%	136 (8.5%)	9 (0.3%)	

Delayed graft function

		KPD n=106	Other living donor n= 1603	DD n=3597	*P* value
DGF	Yes	4 (3.8%)	53 (3.3%)	260 (7.2%)	<0.0001

Renal function



		KPD n=106	DD n=3597	*P* value
Age at transplant	0-5 yrs	26 (24.5%)	702 (20%)	0.27
	6-12 yrs	26 (24.5%)	1102 (30.6%)	
	13-17 yrs	54 (50.9%)	1793 (49.8%)	
Sex	Male	60 (56.6%)	2089 (58.1%)	0.76
Race/ethnicity	White	68 (64.2%)	1368 (38.0%)	<0.0001
	Black	17 (16.0%)	832 (23.1%)	
	Hispanic	17 (16.0%)	1090 (30.3%)	
Blood type	A	41 (38.7%)	1080 (30.0%)	0.006
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