Spousal Live Donor Renal Transplantation: For Better or For Worse

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Introduction

30-40% waitlisted patients have HLA antibodies, they are "sensitised". Patients with low preformed donor specific antibodies [DSA] with a negative FCXM/CDC cross match are at a high risk of antibody mediated rejection [AMR] and graft loss. This is a major barrier to transplantation. Causes include failed allograft, pregnancy and blood transfusions.

The immunological risk of females receiving a renal transplant from their spouses in the absence of preformed DSA has not been formally quantified. The aim of this study is to determine the additional risk posed by pregnancy on spousal transplants in the absence of preformed DSA.

Methods

We carried out a retrospective study. There were 510 "low-risk" live donor transplants performed between 2005 and 2014. 132/510 [25.89%] were spousal transplants. ABOi and HLAi with identified preformed DSAbs were excluded. All patients received similar immunosuppression [monoclonal antibody induction, steroid for 7 days and tacrolimus monotherapy]. DSAbs were identified by standard luminex technology. Rejection episodes were biopsy proven and defined by Banff '07 criteria.

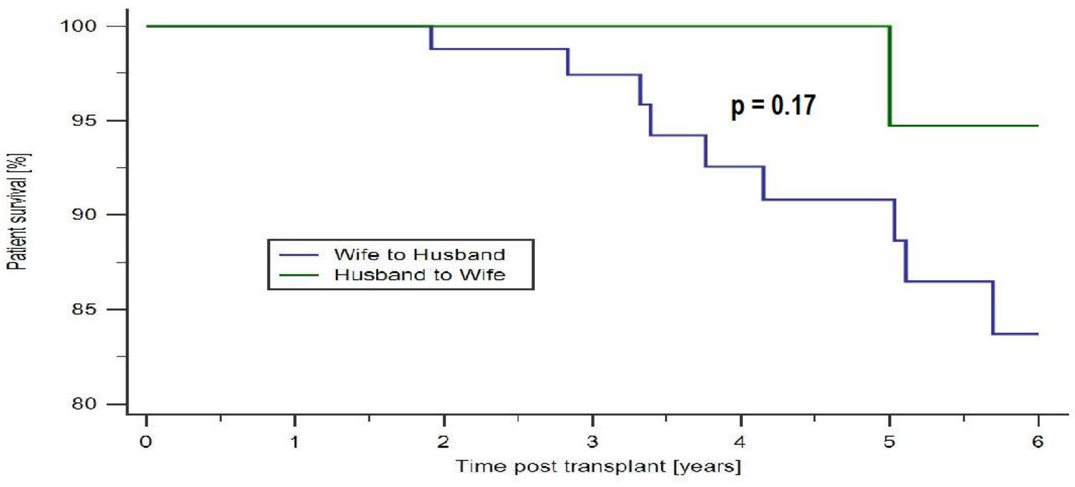
Results

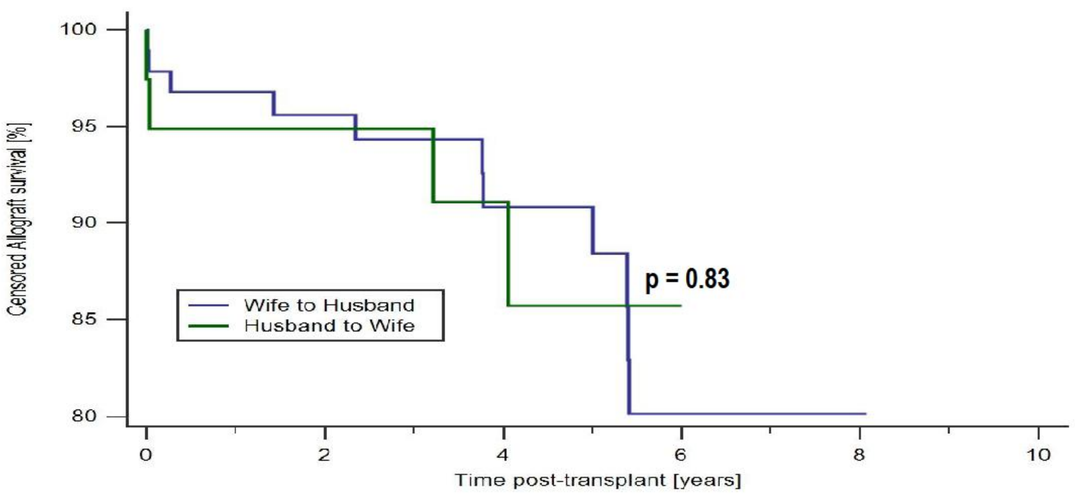
Spousal transplant patient demographics are shown in table 1.

Table 1. Demographics of patients with spousal transplants.

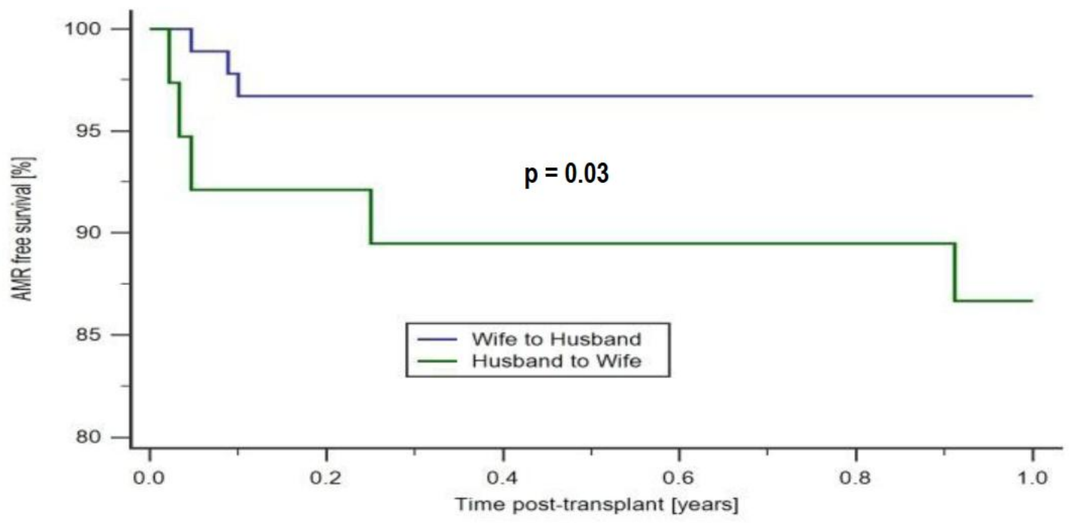
		H-W (N=39)	W-H (N=93)	P value
Recipient Age	Years	46.66 ± 11.52	53.32 ± 10.53	**0.0016**
Sensitised	Yes	25	15	**0.023**
	No	14	78	
Graft #	1st	35	87	0.48
	>2nd	4	6	
Ethnicity	AA	4	2	0.84
	Caucasian	25	63	
	South Asian	9	23	
	Other	1	5	
Diabetic	Yes	8	24	0.67
	No	31	69	
Pre-emptive	Yes	21	46	0.79
	No	18	47	
HLA Mismatch	Median (IQR)	5 (4-5)	5 (3-5)	0.71

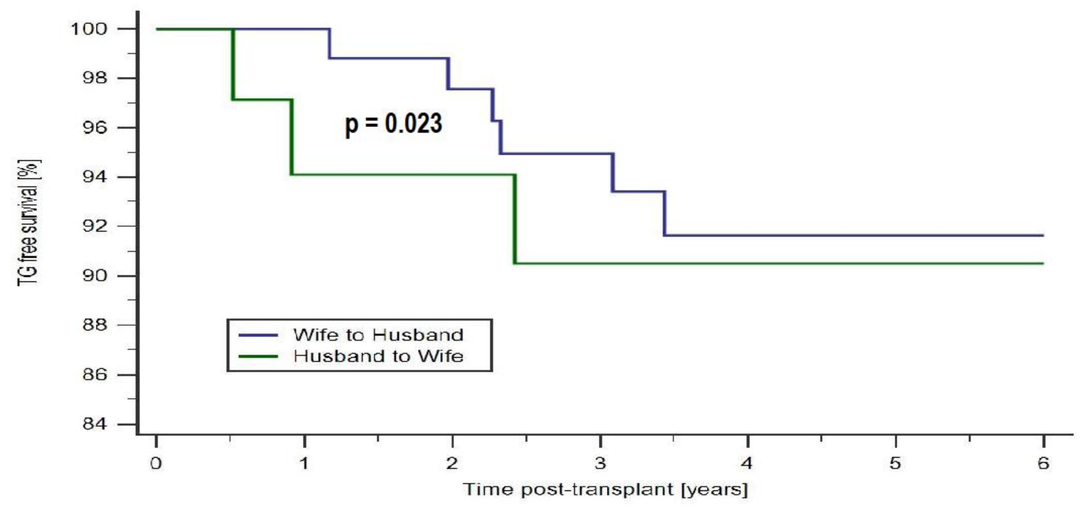
The patient survival and graft survival was comparable;





There was a significantly higher risk of alloimmune injury in the HW group in the first year post transplant;

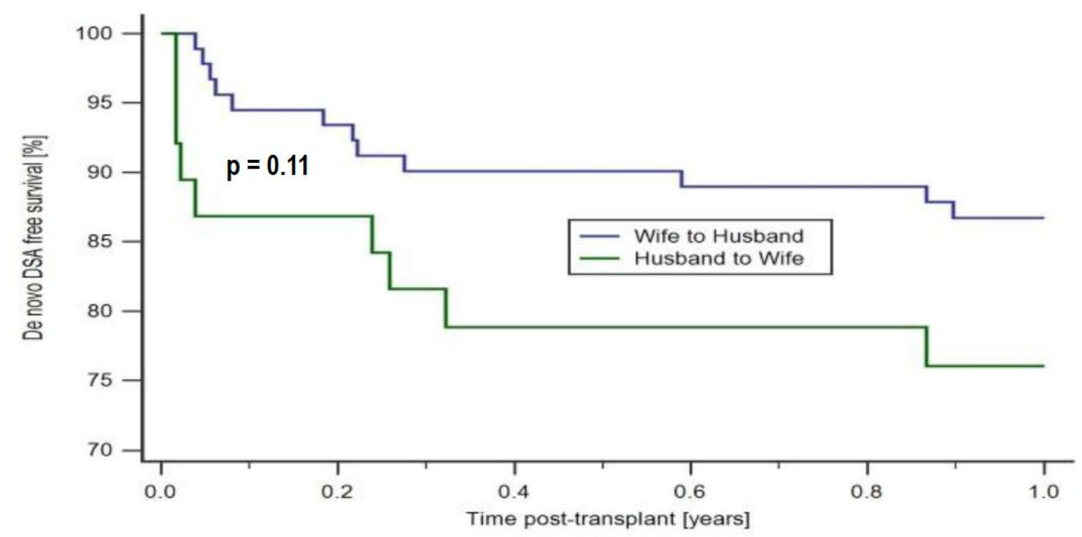




The alloimmune injury at six years was comparable;

Event free survival [%]	H-W [Yr 6]	W-H [Yr 6]	P value
Graft loss	85.7	80.1	0.83
Rejection	69.3	67.6	0.82
AMR	83.5	90.1	0.22
TG	90.5	91.6	0.65

De novo DSAb incidence was greater in in the H-W renal transplant patient group.



Conclusion

This study shows that despite an absence of luminex positive DSA pre-transplant male to female spousal transplants have a higher risk of early alloimmune injury which is likely secondary to a memory response. Such patients should be considered as high immunological risk.

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