

# RELEVANCE OF PRE-TRANSPLANT DONOR SPECIFIC ANTIBODIES DETECTED BY LUMINEX ONLY ON RENAL GRAFT REJECTION



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## Introduction

The impact of 'Luminex-only' donor specific antibodies (DSAs) on transplant outcome is controversial. In this single centre study we analysed the effect of pre-transplant DSAs detected in the 'day of transplant' sera on rejection episodes.

## Methods

329 kidney and SPK patients were transplanted with deceased or live ABO compatible donor organs in Cardiff between 2006 and 2009.

All had a negative pre-transplant B-cell CDC crossmatch with DTT treated sera. 274 patients had a negative (LCS <40) flow cytometry crossmatch (FCXM) (T-B-), 22 were T-B+, 12 T+B- and 15 T+B+.

'Day of transplant' sera were tested for HLA antibodies by LABScreen (One Lambda) Mixed kits. Positive samples were tested by LABScreen Single Antigen (SA) Class (C) I and CII kits to determine DSAs. Positive tests were set at an MFI of  $\geq 500$ .

Rejection information from patients' records (follow up from 18 to 65 months) made no distinction between cellular/antibody mediated rejection. Analysis was done using SPSS version 17.0, taking  $p < 0.05$  as significant.

## Results

- 85 patients (25.8%) had one or a combination of HLA-A, B, C, DR, DR51/52/53, DQ, DP DSAs. 34 had CI DSA only, 38 CII only and 13 CI and II DSAs.
- MFIs of the highest reacting DSA bead (range 511-8192) were 500-1,999 for 58 patients, 2,000-4,999 for 18 and  $\geq 5,000$  for 9 (all DR51/52/53, DQ, DP).
- There were no significant differences in the number of rejection episodes between recipients of deceased or live donor organs, or kidney only or SPK grafts.

- 83 Patients had  $\geq 1$  rejection episodes by 12 months post-transplant.
- Patients with DSAs were more likely to have a positive FCXM versus those without DSAs ( $p < 0.0001$ ).
- Positive FCXMs were not associated with rejection.
- Taking all DSAs there were no differences in rejection between DSAs and non-DSAs patients at 1, 3 or 12 months post-transplant.
- Patients with CII DSAs (+/- CI DSAs) were more likely to have rejection during the first 12 months than patients without CII DSAs ( $p < 0.05$ ) (see Table).
- There was no association between the DSAs' MFI values and rejection.
- Twice the number of patients with  $\geq 3$  rejection episodes had DSAs ( $n=6$ ) compared to those without DSAs ( $n=3$ ) ( $p=0.011$ ).

### Patients with Class II DSAs and rejection in the first 12 months post-transplant

	Rejection in first 12 months	No rejection in first 12 months
Class II DSAs $>500$ MFI	19	32
No Class II DSAs	64	214

## Comments

- This study suggests that CII DSAs identified by Luminex only increases the risk of rejection in the first year.
- Pre-transplant DSAs may also increase the number of rejection episodes suffered.