HLA A10 SPURIOUS REACTIVITY WITH SINGLE ANTIGEN BEADS INVESTIGATED

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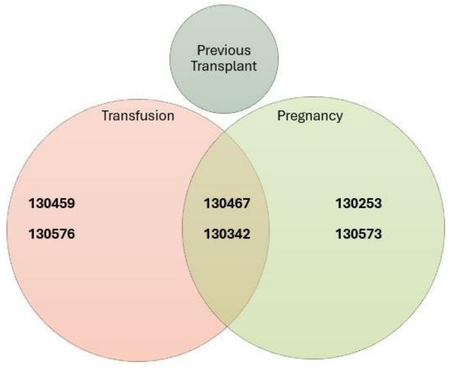
AIM

To review pre-transplant kidney and heart patients with spurious reactivity to HLA A10 (A25,26,34,66,43) on the single antigen bead assay and determine if the reactivity should be listed as unacceptable antigens in UNET. Accurately defined unacceptable antigens are critical to our workflow since most of our transplants are performed with virtual crossmatches. cPRA for A10 is 13%.

METHODS

Ten pre-transplant patients with antibody reactivity to some or all the A10 antigens were selected. The antibody testing results were examined and sensitizing events including transfusions, pregnancies, and previous transplants were reviewed. MFI of the antibody results ranged from 11,000 to 1,100. Antibody testing was performed using LABScreen™ Single Antigen, LABScreen™ PRA and LIFECODES® Single Antigen and ID kits. Crossmatches were performed by flow cytometry (FCXM) on pronase treated, T and B cells using a BD FACSLyric.

Sensitizing Events



Sensitization and Antibody Results Summary

	Sample ID	Txp	Txf	Preg	SA	ID	LSA	LC ID	Comments (SA MFI if available)
1	130467	NO	YES	2	POS	POS	POS	POS	A66 (10,000), 34:01 (10,000), 25 (7,600), A26 (5500), A43 (3900)
2	130459	NO	19	NA	POS	NEG	POS	POS	A25 (10,500), A26 (4,000), A43 (5,600), A66:01 (8,400)
3	130290	NO	NO	0	POS	NEG	NEG	NEG	A26(2400)
4	129927	NO	NO	NA	POS	POS	POS*	NEG	A34:01(4300), A66:01(4200), A25(1200); LSA only A*66:01 (1201)
5	130253	NO	NO	1	POS	NEG*	POS	POS	A25 (9400)
6	130344	NO	NO	NA	POS	NT	POS	POS	A43(11000), A26(11000), A25(8300), A66(8000), A34:01(5500)
7	129166	NO	NO	NA	POS	POS	**NT**	POS	A43(6400), A26(5500), A25(8300), A66(4000), A34:01(3400), A25(2400)
8	130573	NO	NO	5	POS	NEG	POS	POS	A66:02 (5500) with B7C,163W epitope on ID too.
9	130342	NO	MULTI	2	POS	POS	POS	POS	A34(1800), A26(1100), A66:01(1100), A25(1000); other reactivity includes A33, 68,69; and 44RMA (B13,62,75,76)
10	130576	NO	2	NA	POS	NEG	NO	POS	A26(1100), A66(600), A25(570)

Results

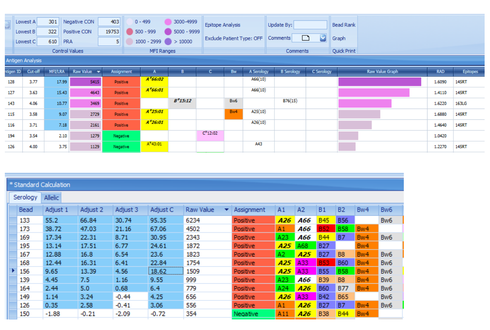
Six out of the ten patients had sensitizing events, none had previous transplants, 2 received transfusions, 2 had pregnancies, and 2 had both transfusions and pregnancies. The summary of the sensitizing events and antibody testing is attached in table 1. Six cells were tested against 10 samples for a total of 60 flow crossmatches. Fifty-six (93%) crossmatches were negative. Four crossmatches were positive, both recipients with the positive crossmatches had sensitizing events. The positive crossmatches were most likely due to a broad epitope antibody that contained some of the A10 antigens. The two epitopes that were identified on the antibody testing were 163EW and 62RR. The MFI detected on the antibody testing did not predict the positive flow crossmatch result. Eighty percent (8/10) of the patients with antibody reactivity to A10 had negative flow crossmatches.

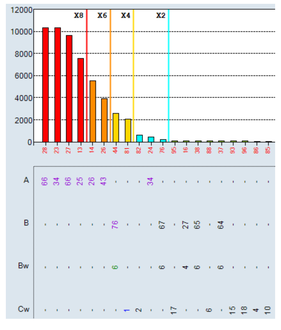
Donor HLA type: A*01:01, 34:02; B*08:01, 51:01; C*07:01, 16:01; DRB1*03:01P, 09:01P; DRB3*01:01P; DRB4*01:01P; DQA1*03:03, 05:01; DQB1*02:01, 02:02; DPA1*01:03, 02:02; DPB1*01:01P, 04:01P

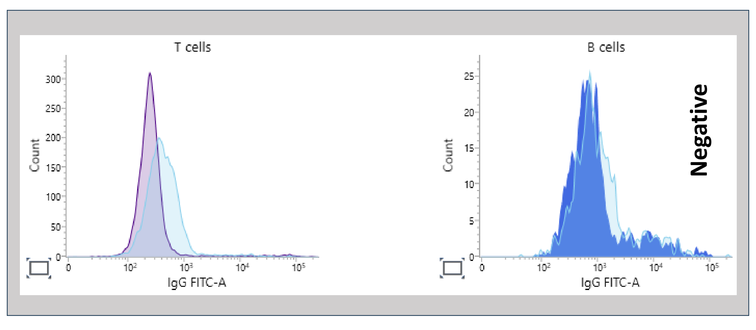
Antibody Data

FCXM

Sample ID: 130467







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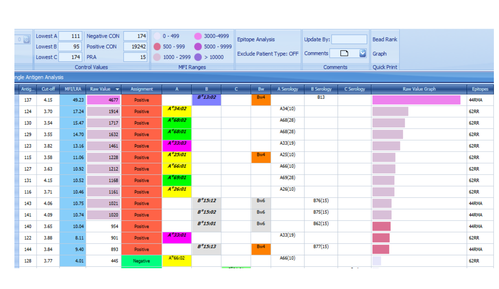

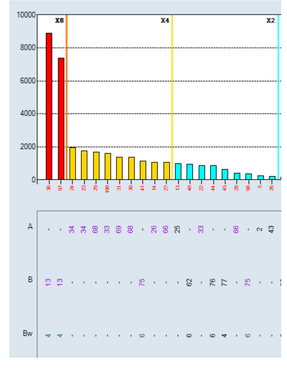

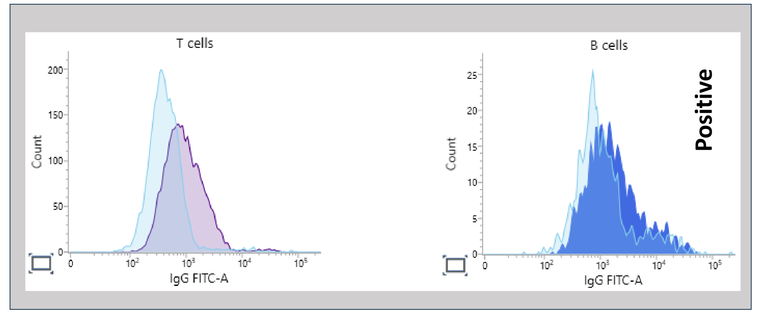

Conclusion

Spurious reactivity on the single antigen antibody tests have been reported for years. We investigated the A10 reactivity in 10 pre-transplant patients using flow crossmatches and determined that 8 out of 10 recipients had multiple negative flow crossmatches. The unacceptable antigens were removed from UNET for these patients.

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