UK NEQAS
International Quality Expertise

Histocompatibility & Immunogenetics

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Interpretive Educational Scheme (iED)
Clinical Scenario 1/2017 – Cardiothoracic Transplantation

Dispatched on 22nd August 2017

Summary of Results

A total of 46 responses were received.

1a) Rank the 3 most suitable recipients.

As the table below shows, Recipient C was the most popular 1st choice recipient with 33/46 (71.7%) participants selecting this recipient.

Donor	Number of Participants			
	Rank 1	Rank 2	Rank 3	Total
A	0	0	9	9
B	0	0	0	0
C	33	5	8	46
D	8	14	9	31
E	0	10	14	24
F	0	4	3	7
G	5	13	3	21

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The following table summarises the responses given by participants for selecting each recipient.

Reason for selection	Recipient						
	A	B	C	D	E	F	G
ABO match			✓	✓	✓		✓
ABO compatible	✓					✓	
Blood group O preferred (can be disadvantaged)			✓	✓			✓
HLA antibody negative/unsensitised patient			✓			✓	
HLA antibody positive/sensitised patient				✓	✓		✓
Limited chance to get organ offer				✓			
Unlikely to cause CDC positive crossmatch				✓			
No DSA			✓	✓	✓	✓	✓
Single DSA	✓				✓		
DSA with low/medium MFI	✓						
HLA-Cw low expression	✓						
Recent antibody test	✓		✓	✓	✓		✓
Virtual crossmatch negative			✓	✓			✓
Risk level I			✓				✓
Risk level II				✓	✓		
Risk level III	✓						
Difficult to find compatible donor/good opportunity				✓			✓

Please note: ✓- indicates 'reason' was submitted by one or more participants relating to that donor. Other reasons may also apply.

Additional comments/suggestions for further information required/testing the lab would perform included:

- Enhanced Immunosuppression
- Obtain DP type
- Pre-transplant antibody test
- Cw expression generally considered lower
- Bw4 DSA not clinically significant
- Pre-transplant T and/or B CDC crossmatch has to be negative
- Donor must be typed for DQB1
- May be cross-reactive reaction between anti-A2 and A24

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1b) Explain why the other recipients have not been selected

Reason for not selecting	Recipient						
	A	B	C	D	E	F	G
High DSA(s)	✓	✓					✓
Cumulative DSA MFI >5000/high		✓					✓
Not ABO match	✓	✓				✓	
Good chance to find alternative donor/better matches available	✓	✓					
Risk level III	✓						
Risk level IV		✓					✓
Further testing required		✓				✓	
DP type not provided/potential DP DSA				✓			
DSA					✓		✓
Risk Level II					✓		
Other recipients preferable					✓		
No recent antibody screening						✓	
Bw4 DSA MFI >5000							✓

Additional comments/suggestions for further information required/testing the lab would perform included:

- Enhanced immunosuppression
- Post-transplant antibody testing
- Antibody removal
- Do not select blood group A for O donors unless clinically urgent

UK NEQAS for H&I Comment: *The selection of 'donor G' by participants as compatible/incompatible was interesting. 21 participants (45.7%) selected it as one of their 3 ranked 'compatible' donors, while the remainder said it was incompatible due to the Bw4 antibody (donor is A24 which carries the Bw4 epitope). It is unclear if the laboratories that said donor G is compatible 'missed' the A24, or this is a true representation of different laboratory policies in how they consider Bw4 antibodies.*

2a) Patient A and C received VAD's in the past 2 weeks and have received multiple blood transfusions. Does this information change your recipient selection?

Yes	n= 30 (65.2%)
No	n= 13 (28.3%)
Did not answer	n= 3 (6.5%)

2b) What, if anything, could the laboratory do for these recipients?

Responses included:

- More recent antibody test
- Urgent antibody screen/ID on day of transplant
- Immediate pre transplant DSA testing
- Daily HLA antibody testing 2 weeks after transfusion

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- Prospective crossmatch could be performed
- Weekly samples for antibody testing
- Check for new DSA or increase in existing DSA levels
- Increased sensitisation associated with VAD

3) Select the immunological risk for each donor and explain reasons for selection

	Contraindication	High	Medium	Low	Other
Donor 1	**37**	**7**	**2**	**0**	**0**
Comments on risk selection	Cumulative DSA >20,000 MFI A2, B44 DP4 DSA Risk Level IV	3 DSA High MFI	DSA		
Donor 2	**3**	**0**	**8**	**33**	**2**
Comments on risk selection	Denatured A29 would still be considered as DSA and not transplanted against at this level Anti-A29 (9400 MFI)		Denatured A29. May not be clinically significant	A29 DSA denatured. No other DSA	Standard risk
Donor 3	**0**	**15**	**29**	**1**	**1**
Comments on risk selection		B44 DSA 3600 MFI Risk level III	Single DSA <5000 MFI Acceptable risk for super urgent patient	No DSA	CTAG level III
Donor 4	**0**	**0**	**4**	**40**	**2**
Comments on risk selection			DSA against B44, cross-reaction with donor B45 possible High number of mismatches	No DSA	CTAG I standard risk
Donor 5	**33**	**11**	**2**	**0**	**0**
Comments on risk selection	Cumulative DSA MFI>5000 MFI A2 (12,000 MFI), B44 homozygous (2x3600 MFI) DP4 (5000 MFI)	High DSA A2, B44 and DP4 DSA	A2 and DP4 DSA		

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4) What would you suggest, if anything, that could be done to further increase the chances of a successful transplant?

Responses included:

- Post transplant monitoring of antibody levels
- Enhanced immunosuppression
- Induction therapy
- Antibody removal
- Vigilance for clinical signs of rejection
- High resolution typing of donor (especially B44) to interpret bead-based data
- C1q screen to determine complement binding capacity

5) If the retrospective flow crossmatch had been positive, would this have changed your advice or recommendations?

Yes	n= 26 (56.5%)
No	n= 19 (41.3%)
Did not answer	n= 1 (2.2%)

Responses included:

Yes

- Donor would have been excluded unless absolutely urgent
- Include anti-CD20 antibody
- Include Plasmapheresis
- More frequent post transplant monitoring
- Adapt immunosuppression

No

- Already Treated as high risk
- As this is a heart transplant, the clinical risk of the DSA needs to be factored into management decisions irrespective of crossmatch outcome.
- Prophylactic measures already been taken
- For a patient enrolled in a super urgent list, FCXM positivity and CDC XM negativity is not a contraindication to transplant.