

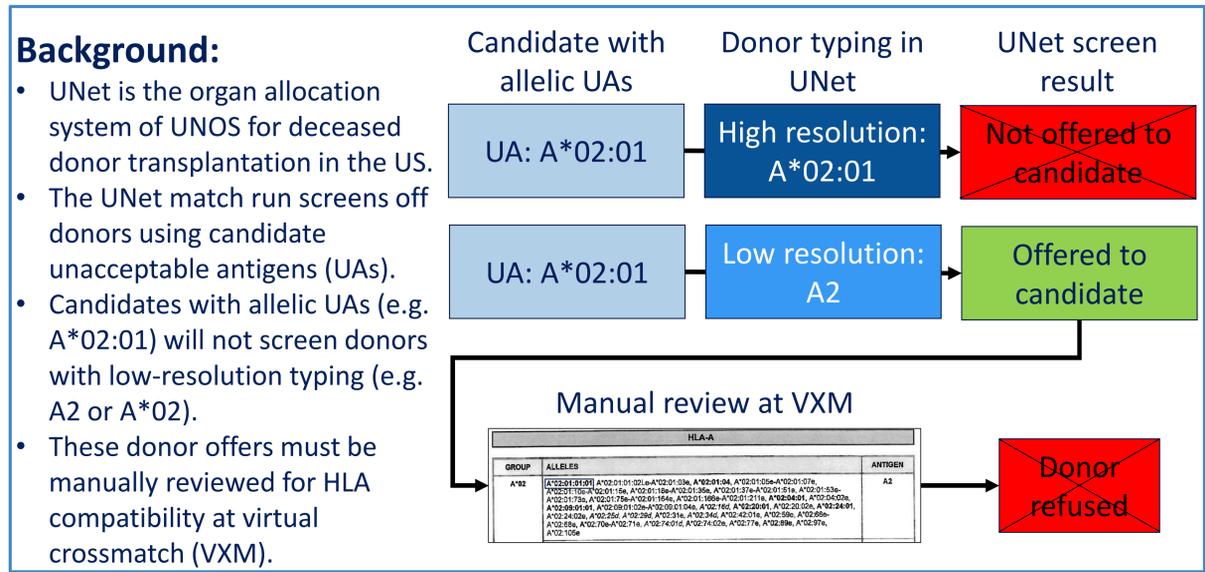
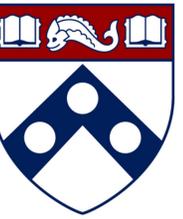
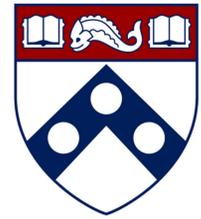
Reporting HLA Antigens for the DRB3/4/5 Locus at the First Field in UNet Would Decrease Rates of Deceased Donor Offer Refusal

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Aim: To evaluate the potential of donor refusals for HLA compatibility based on allelic UAs when only low-resolution donor HLA typings are entered into UNet.

Methods:

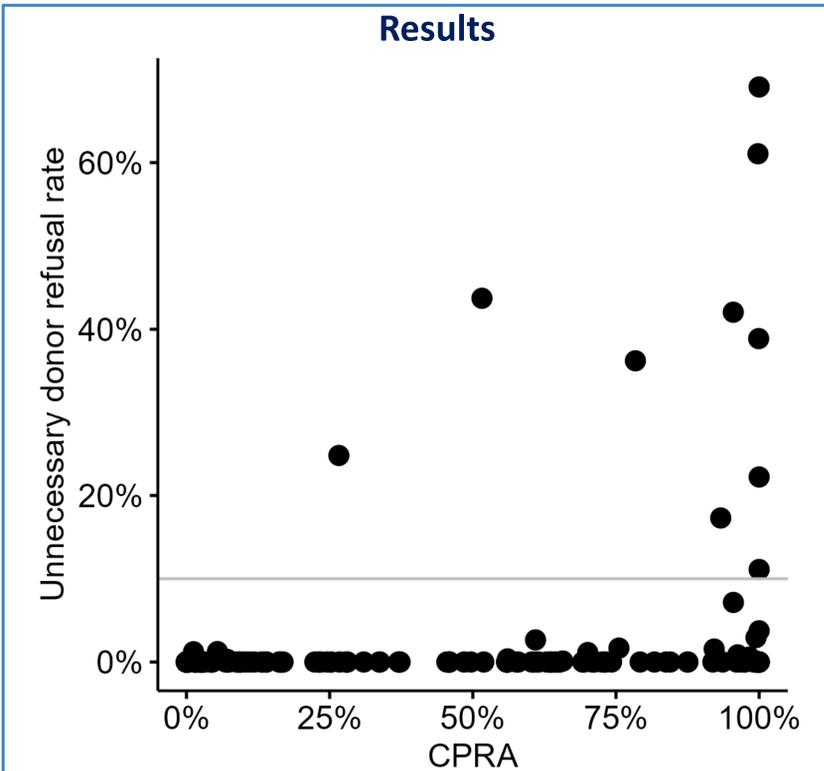
- 419 deceased donor kidney transplant candidates from a single center were studied.
- OPTN CPRA was calculated with all candidate UAs (Total CPRA).
- Allelic UAs were removed and CPRA was recalculated (antigen-level CPRA without allelic UAs).
- Estimated VXM refusal rates due to the presence of allelic UAs against the donor were determined by dividing the fraction of compatible donors based on all UAs by the fraction of compatible donors based on just the antigen level UAs, as below:

Compatible donors all UAs (LCD_{VXM}) = 1 – Total CPRA

Compatible donors only antigen UAs ($LCD_{MatchRun}$) = 1 – CPRA without allelic UAs

Estimated Refusal Rate = $1 - [LCD_{VXM} / LCD_{MatchRun}]$

Gragert, L., et al. ASHI2023 Human Immunology, 84: S37-38.



- 25 candidates (6.0%) had allelic UAs listed.
- Estimated refusal rates ranged from 0 to 69%.
- Of the 10 candidates with refusal rates >10%, eight were due to DRB3/4/5 allelic UAs.
- Review of candidates with high estimated refusal rates revealed several refused organ offers due to allele-specific antibodies.

Candidates with unnecessary refusal rates greater than 10%

Patient	Total CPRA	Alleles-removed CPRA	Unnecessary Donor Refusal Rate	Allelic UAs
1	100.00%	99.98%	69.08%	DRB3*01, DRB3*01:01, DRB3*02, DRB3*02:02
2	99.80%	99.47%	61.06%	DRB3*01, DRB3*01:01, DRB3*03, DRB3*03:01
3	51.60%	13.99%	43.72%	DQA1*05:03, DQA1*05:05
4	95.48%	92.21%	42.05%	DRB3*01, DRB3*01:01, DRB3*03, DRB3*03:01
5	99.92%	99.86%	38.88%	DRB3*01, DRB3*01:01, DRB3*03, DRB3*03:01
6	78.39%	66.12%	36.22%	DRB3*01, DRB3*01:01, DRB3*03, DRB3*03:01
7	26.61%	2.40%	24.81%	DRB5*01, DRB5*01:01
8	100.00%	100.00%	22.22%	DRB3*02, DRB3*02:02
9	93.29%	91.89%	17.30%	DRB3*03, DRB3*03:01
10	100.00%	100.00%	11.11%	DRB3*02, DRB3*02:02

Conclusions:

- Allelic/first-field DRB3/4/5 UAs accounted for up to 83% of donor refusals for HLA compatibility reasons.
- The majority of DRB3/4/5 immunologic variability is encoded in the first field (e.g. DRB3*03), contemporary deceased donor typing assays resolve to the first field, and UNet accepts first field typing results.
- Many HLA labs and OPOs only report antigen positivity for HLA typing of DRB3/4/5 loci (e.g. DR52 antigen category).
- We strongly recommend that centers input the highest-resolution typing whenever appropriate, especially for DRB3/4/5.
- Greater reductions in offer rates are possible if detailed molecular typing data were captured and used for allocation.