KIDNEY ADVISORY GROUP

HLA DONOR DISCREPANCY MONITORING – 2016

Concordance between donor HLA types submitted to Organ Donation and Transplantation (ODT) from different laboratories is monitored.

BACKGROUND INFORMATION

A donor HLA type is submitted to the Duty Office from the offer laboratory on the ODT form, 'National Transplant Database HLA Report (TT1). The form is provided electronically and the HLA type is manually typed into fields on the form. In some laboratories the ODT form has been replicated in the local laboratory system and the HLA type automatically downloads into the fields required, reducing the risk of transcription errors.

Pre-allocation

Deceased donor HLA types received by the Duty Office undergo automated consistency checks when entered onto the national database. This occurs before a 'matching run' is initiated and applies 5 basic rules:

1. There is consistency between HLA Broad/ split antigens/ alleles and valid WHO nomenclature is used
2. No more than 2 antigens/alleles can be reported at a single locus
3. Bw4/Bw6 antigen associations must be consistent with HLA-B locus antigens/alleles
4. DR51/51N/52/53/53N antigen associations must be consistent with HLA-DR locus antigens/alleles
5. DRB3/4/5 allele associations must be consistent with HLA-DR locus antigens/alleles and DR51/51N/52/53/53N antigens.

If a donor HLA type fails the checks, the Duty Officer contacts the laboratory, giving details of the reason for failure. The HLA type is then reviewed and resolved by the laboratory prior to initiation of the matching run.

Anomalies detected by this automatic consistency checking do not impact on allocation.

Post allocation

Discrepancies in the HLA type may be identified after the organs have been allocated. It is possible that the laboratory may revise the HLA type after the offer type has been sent and contact the Duty Office with a 'Revised HLA type'. A discrepancy may also be detected if the donor is re-typed at the recipient centre laboratory.

Investigation and reporting

All anomalies/discrepancies are reported to the laboratory concerned and investigated. Laboratories respond giving reasons for the anomalies/ discrepancies and measures taken to minimise the risk of future occurrences. Reports are prepared for the ODT Clinical Audit, Risk And Effectiveness Group (CARE). These reports are also reviewed by the 'Donor Discrepancy Monitoring Group' which meets three times a year. This group is chaired by the

ODT Scientific Advisor and the membership includes the Steering Committee for the UK National External Quality Assessment Scheme (NEQAS) for Histocompatibility & Immunogenetics (H&I). This ensures that all cases are reviewed externally by experts in H&I.

Summary of Anomalies/Discrepancies
A summary of the results of the monitoring from 2014-16 is shown in **Table 1**. Anomalies were detected prior to allocation in 0.4% of offer types in 2016, compared to 0.6% in both 2014 and 2015. Discrepancies detected after organ allocation occurred in 0.5% donor types in 2016, compared to 1.2% in 2015 and 0.9% in 2014. The reasons given for the anomalies/discrepancies in 16/1952 (0.8%) donor offer types in 2016 are summarised in **Table 2**.

Pre-allocation (n=7)
The majority, 6/7(86%) of these anomalies were due to clerical errors originating in the laboratory.

Post-allocation (n=9)
The majority of discrepancies post allocation, 7/9 (78%), resulted from Technical/Interpretation/Nomenclature errors. In 2/9 (22%) cases there was an impact on allocation with changes to the allocation sequence, one patient was transplanted against a low level HLA-DQ DSA (crossmatch negative) and in the other case there was a change to the mismatch grade at the HLA-B locus.

Table 2 Anomalies/Discrepancies in Donor HLA types, 2016

Reason	**Pre- allocation** n= (%)	**Post allocation** n= (%)	**Overall** n= (%)
Clerical	6 (86%)	1 (11%)	7 (44%)
Technical/ Interpretation/ Nomenclature	1 (14%)	7 (78%)	8 (50%)
ODT Data Entry	0	1 (11%)	1 (6%)
Total	**7**	**9**	**16**

Summary and Action
Over the last three years the level of discrepant donor HLA types reported and used for allocation ranges between 0.5% and 1.2%. This information is particularly important when transplanting sensitised patients following a virtual crossmatch. This information will be communicated to Directors of all Transplant Units and H&I Laboratories, so that all are aware of the discrepancy rate.

Prof Susan Fuggle
Scientific Advisor **May 2017**

Table 1

Summary of Donor Discrepancies 2014 – 2016

		2014				2015					2016					
Laboratory (origin of discrepancy	**Offer Types n=**	Anomalies resolved Pre-allocation n=	Anomalies Pre-allocation %	**Discreps resolved Post allocation n=**	**Discreps Post-Allocation %**	**Offer Types n=**	Anomalies resolved Pre allocation n=	Anomalies Pre-allocation %	**Discreps resolved Post allocation n=**	**Discreps Post-Allocation %**	**No. of Offer Types n=**	Aanomalies resolved Pre allocation n=	Anomalies Pre-allocation %	**Discrep-resolved Post allocation n=**	**Discreps Post-Allocation %**	**Discreps impacting on allocation %**
Belfast	62			1	1.6%	73					52			1	1.9%	
Birmingham	153	1	0.7%			151			6	4.0%	152	1	0.7%	1	0.7%	
Bristol	71			1	1.4%	80					95	1	1.1%	1	1.1%	
Cambridge	133	2	1.5%			152	1	0.7%	1	0.7%	136					
Cardiff	65					69					65					
Edinburgh	73	1	1.4%	1	1.4%	67	4	6.0%	1*	1.5%	83			1	1.2%	1.2%(1)
Glasgow	57					59			1*	1.7%	78					
Guys	121					119					117					
WLRTC	77			1	1.3%	82			1*+1	2.4%	100					
Leeds	88					116	2	1.7%			115	1	0.9%	1	0.9%	0.9% (1)
Leicester	23					10					37					
Liverpool	85	2	2.4%			86			3	3.5%	87	1	1.2%			
Manchester	108					104			1	1.0%	163	1	0.6%	1	0.6%	
Newcastle	125			1	0.8%	118	1	0.8%	1	0.8%	122	1	0.8%			
Oxford	87	1	1.1%			98	1	1.0%			73					
Plymouth	88	1	1.1%	1	1.1%	68					59					
Royal Free	48					43			2	4.7%	38					
Royal London	101			1	1.0%	75			2	2.7%	75					
Sheffield	113	1	0.9%	5	4.4%	99			1	1.0%	104					
Tooting	183	2	1.1%	4	2.2%	196			1	0.5%	201	1	0.5	2	1.0%	
ODT	1861					1865					1952			1	0.05%	
TOTAL	1861	11	0.6%	16	0.9%	1865	9	0.6%	22	1.2%	1952	7	0.4%	9	0.5%	0.1%(2)

* NLDKSS (living donor)