Latest Tooting Rare Findings.

Joint TAG on 02/04/14 at St. George's.

1 x apparent Weak/Partial D in pregnancy, but with a normal *RHD* gene (as yet, unexplained).
Colindale and Sheffield RCIs have seen several examples of RhD antigen expression getting weaker during pregnancy, even from Dweak to D-negative. Question of anti-D prophylaxis. Advice has been to give Anti-D.

1 x anti-Js^{b} + a CR1-related antibody in a sickle cell patient.
Colindale SCD patient sent for full phenotype in July'13 no transfusion Hx. Referred on call in last week of March'14 – panreactive antibody, identified as anti-Js^{b}. NHSBT policy is to advise Rh matched K- until the antibody is made.

1 x S-, s-, U- in a sickle cell patient.

1 x *RHD*DAU-0* in a sickle cell patient.

The genetic background to this type is a mutation at position 1136C>T (exon 8), resulting in an amino acid change of Threonine to Methionine at position 379 of the mature RhD protein (T379M).

1 x DOL with alloanti-D+C+E.

The genetic background to this type is mutations at positions 509T>C (exon 4) and 667T>G (exon 5), resulting in amino acid changes at positions 170 (Methionine to Threonine) and 223 (Phenylalanine to Valine) of the mature RhD protein (M170T, F223V).

1 x *d(C)ce^{S}/Dce^{S}* with anti-C+E, and an auto-antibody.

The *RHD* gene contains a heterozygous mutation in exon 2 of 186G>T, resulting in a Leucine to Phenylalanine change at position 62 of the mature RhD protein (L62F), but the other *RHD* is normal.

The *RHCE* gene contains a heterozygous mutation in exon 7 of 1006G>T, resulting in a Glycine to Cysteine change at position 336 of the mature RhCcEe protein (G336C) and a homozygous mutation in exon 5 of 733C>G, resulting in a Leucine to Valine change at position 245 of the mature RhCcEe protein (L245V).

1 x anti-k in a patient going for a TKR.
A lot of k- (KK) donor screening has been undertaken for many years. Not unusual to find 'wet' units on the shelf, rather than have to use the NFBB.

1 x alloanti-H in a pregnant O_h lady.
Patient recently referred to RCI Colindale for weak antibody investigation. Patient grouped as O Pos and reported with a weak papain+IAT antibody

showing no obvious specificity. HTL now says they have a record that the patient is a Bombay (Oh). Requested repeat samples.

1 x U- sickle cell patient.

1 x novel D variant (*RHD*G209A*).

The *RHD* gene contains a mutation in exon 2 of 209G>A, resulting in an Argenine to Glutamine change at position 70 of the mature RhD protein (R70Q).

No mutations were detected in the *RHCE* gene, except for the expected polymorphisms in exons 2 and 5 that are associated with the *RHCE*Ce/Ce* genotype. It is probable that, given the rarity of this mutation, the patient is *D*Ce/dCe*.

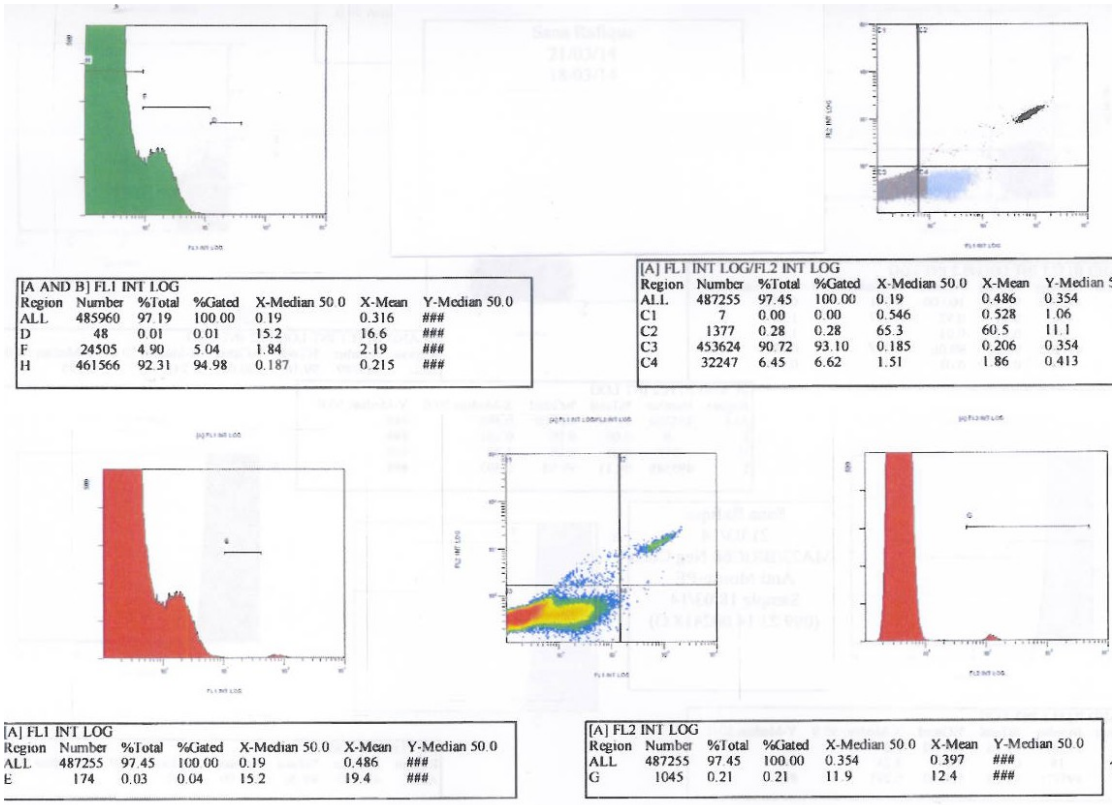
The D--/D-- patient, first reported in September 2008, with the novel mutation of del907C in exon 6 of the *RHCE* gene, who originally had only anti-E, and later developed the expected anti-Rh17, has now also developed anti-C and anti-c.
Colindale has had three patients with anti-Rh17 in recent years. At the time there were no D--/D—donors on record. Had to source units from USA and Japan. NHSBT donor search showed 1 D+ C-c-E-e- donor on the system. Not picked up by anyone.

2 x Partial D DAR.

DAR has a mutation at position 602 (C>G), resulting in an amino acid change at position 201 of the mature D protein (Threonine to Argenine), a mutation at position 667 (T>G), resulting in an amino acid change at position 223 of the mature D protein (Phenylalaninr to Valine) and a mutation at position 1025 (T>C), resulting in an amino acid change at position 342 of the mature D protein (Isoleucine to Threonine).
RCI Colindale referred an antenatal patient with an allo anti-e like antibody to IBGRL. Report showed that the patient was DAR/DAR with anti-hr^{S}. The patient had been grouped as RhD positive by the HTL and RCI but was a D variant and would require anti-D prophylaxis. Written in to RCI grouping procedures to investigate apparent RhD positives with allo anti-e like antibodies.
Apparent r' r' patients with anti-c are also investigated for D weak. Case seen where an apparent r' r' patient with anti-c was in fact RhD positive. The D expression suppressed by the presence of *RhC in cis* (Ceppellini Effect).
r' r' frequency <1 in 10 000 (R1R1 frequency 1 in 5).

Fetomaternal haemorrhage estimation

HTL reported a FMH bleed of >4mL by Kleihauer. Mum O Neg, baby O Pos.
RCI grouping showed mixed field for RhC and K1. Evidence of FMH bleed?
FMH by flow cytometry using BRAD-3 FITC labelled anti-D was negative.
FMH by FC using anti-HbF showed a minor maternal population only.



[A AND B] FL1 INT LOG

Region	Number	%Total	%Gated	X-Median 50.0	X-Mean	Y-Median 50.0
ALL	485960	97.19	100.00	0.19	0.316	###
D	48	0.01	0.01	15.2	16.6	###
F	24505	4.90	5.04	1.84	2.19	###
H	461566	92.31	94.98	0.187	0.215	###

[A] FL1 INT LOG/FL2 INT LOG

Region	Number	%Total	%Gated	X-Median 50.0	X-Mean	Y-Median
ALL	487255	97.45	100.00	0.19	0.486	0.354
C1	7	0.00	0.00	0.546	0.528	1.06
C2	1377	0.28	0.28	65.3	60.5	11.1
C3	453624	90.72	93.10	0.185	0.206	0.354
C4	32247	6.45	6.62	1.51	1.86	0.413

[A] FL1 INT LOG

Region	Number	%Total	%Gated	X-Median 50.0	X-Mean	Y-Median 50.0
ALL	487255	97.45	100.00	0.19	0.486	###
E	174	0.03	0.04	15.2	19.4	###

[A] FL2 INT LOG

Region	Number	%Total	%Gated	X-Median 50.0	X-Mean	Y-Median 50.0
ALL	487255	97.45	100.00	0.354	0.397	###
G	1045	0.21	0.21	11.9	12.4	###

Contacted the HTL and found out:

1. The mother has βThal-trait associated with persistant adult HbF
2. The mother had been recently transfused 4 units, one of which was RhC positive and all were K1 negative.

Which explains:

1. The positive Kleihauer of >4mL, the mother's HbF is ~5%
2. The negative FMH estimation by FC using the anti-D reagent.
3. The mother's RhC and K1 mixed field results. The mother is probably K1 positive.

And emphasises:

1. The need to question results and not jump to conclusions
2. The need to have all of the facts.