Annual SHOT Report 2012 – Supplementary Information

Chapter 17: Haemolytic Transfusion Reaction (HTR)

Additional Tables – not included in the main 2012 report

Table 17.2: Serology, laboratory signs and timing of reaction for delayed haemolytic transfusion reactions

Case number	New antibody (ies) in plasma	Antibodies in eluate	Comments	Days post transfusion
1	Jk^a	Not done	Hb↓; bilirubin↑; DAT pos polyspecific.	13
2	Fy^a,Jk^b (enz IAT only), E (enz only)	Fy^a	Hb↓; DAT pos IgG; see vignette.	2
3	Jk^b, S (polybrene IAT), E (enzonly)	Jk^b	Hb↓; bilirubin↑; fever, chills, dyspnoea, hypotension, jaundice; DAT pos IgG+C3d.see vignette	7
4	Jk^a	Not done	Hb↓; creatinine and bilirubin rose but already high;DAT C3 only.	4
5	Jk^a	Not done	Hb↓; bilirubin↑; DAT neg.	2
6	Jk^a	Not done	Hb↓; bilirubin↑; DAT pos IgG+C3d; known anti-E.	4
7	Jk^a, c	c	Bilirubin↑; DAT pospolyspecific.	6 - 16
8	Fy^a	Not done	Hb↓; bilirubin↑;DAT neg.	9
9	E, Jk^a	Jk^a	Hb↓; bilirubin↑; DAT pos IgG+C3d; Known anti-C^w.	9
10	Jk^a	Non-reactive	Hb↓; bilirubin↑; DAT pos polyspecific. Anti-Jk^a known about at another hospital, and detected weakly, retrospectively by reference centre in pre-transfusion sample.	13
11	Jk^a, Fy^a, c	Fy^a	Hb↓; bilirubin↑; ?Hburia; DAT pos IgG+C3d	9
12	Jk^a	Not done	Hb↓, but PR bleed; DAT pos IgG.	7
13	Jk^b, Fy^a	Insufficient cells for eluate	Hb↓; bilirubin↑; LDH↑; fever; DAT pos IgG; History of anti-M. Sickle cell disease.	9
14	K	Not done	Hb↓; spherocytes; DAT neg.	35
15	Jk^a, K, E	Not done	Hb↓; bilirubin↑; LDH↑; DAT pos IgG.	13
16	E, Jk^a, M	?weak anti-M	Hb↓bilirubin↑; DAT pos IgG+C3d. Anti-E identified retrospectively by enzyme 4 days before being positive by IAT.	6-10
17	E, c, K +autoantibodies	Not done	Hb↓bilirubin↑; jaundice; DAT pos IgG+C3d. Blood service aware of anti-c+E before transfusion.	11-17
18	?anti-C + autoantibodies	? done	Hb↓↓bilirubin↑; DAT neg; sickle cell disease; ?hyperhaemolysis	7
19	? specificity, anti-D (enz only)	S	Hb↓bilirubin↑; DAT pos IgG+C3d. Known anti-Fy^a; see vignette.	10
20	Jk^b, C	Non-reactive	Hb↓; bilirubin↑; creatinine↑ DAT pos IgG.	13
21	E	Negative	Hb↓; bilirubin↑; creatinine↑; DAT pos IgG.	12

			Sickle cell disease (Hb SC) unknown to lab.	
22	S, ce(f)	Not done	Hb↓; bilirubin↑;creatinine↑; LDH↑;DAT weak pos; known anti-Jk^{a}. Not recognized as a DHTR – thought to be an AHTR to a new transfusion. See vignette	14
23	Jk^{a}	Negative	Hb↓; bilirubin↑; fever; back pain; dark urine; DAT neg. Sickle cell disease; known anti-C.	11
24	Jk^{a}	Not done	Hb↓; bilirubin↑;Pos DAT C3d.	20
25	E, C^{w}, Jk^{a}	Jk^{a}	Hb↓; DAT pos IgG+C3d.	5
26	c, E	Not done	Hb↓; DAT pos IgG+C3d.	17
27	Jk^{b}	No specificity	Bilirubin↑; spherocytes; DAT pos IgG.	8
28	Jk^{a}(Enz-only) + enz auto	Negative	Hb↓; bilirubin↑; DAT positive IgG; see vignette.	4
29	K	Negative	Fever & rigors during transfusion - ? cause. Hb↓; bilirubin↑; LDH↑; DAT posIgG. Ant-Co^{b} developed subsequently.	?20
30	None	Weak pan-reacting antibody	Hb↓↓; bilirubin↑; Fever, rigors, back pain; DAT neg. Probably hyperhaemolysis. Sickle cell disease. Pre-existing anti-E and -Fy^{a}	6
31	Fy3	Pan-reactive autoantibody	Hb↓↓; bilirubin↑; LDH↑; DAT pos IgG+C3d. ITU admission. Known anti-Fy^{a}, Sickle cell disease - ? some hyperhaemolysis	9
32	Fy^{b}	Fy^{b}	Hb↓; bilirubin↑; DAT pos IgG+C3d. Blood standing by was transfused before antibody identitifed but no signs of an acute reaction.	2
33	U, S	Positive but no specificity confirmed	Hb↓ Pyrexia, tachycardia; sickle cell disease; ITU admission. Known anti-U not detectable pre-transfusion; DAT pos IgG.	9

Haemolytic Transfusion Reactions (HTR) - Previous Recommendations

Year first made	Action	Recommendation
2011	**Hospital Transfusion Teams (HTTs)**	Plasma components should be considered as the potential cause of an acute haemolytic transfusion reaction (AHTR) even if the reaction occurs during a subsequent red cell transfusion
2011	**Hospital Transfusion Teams (HTTs)**	If platelets are thought to be the cause of an AHTR, this must be reported to the Blood Service for further investigation, whether or not they are labelled as high-titre negative
2010	**HTCs**	Clinicians looking after patients with sickle cell disease should be aware that symptoms of a sickle cell crisis occurring up to 14 days post transfusion could be due to a DHTR, and should send samples for serological investigation
2010	**HTCs**	Clinicians should be aware of the existence of hyperhaemolysis in sickle cell disease in which the Hb drops to levels lower than pre transfusion. Urine Hb HPLC can be useful to demonstrate the presence of both HbS and HbA and advice on the use of IVIg and/or steroids should be sought from a specialist unit or the Blood Service.
2008	**Hospital blood transfusion laboratories**	Prior to transfusion, an antibody history and a transfusion history should be actively sought for previously unknown patients with sickle cell disease. This must include contacting the local blood service reference laboratory as well as any other hospitals the patient has attended.
2008	**UK blood services**	A national register of patients with antibodies, linked between the red cell reference laboratories, should be considered.
2005	**Hospital blood transfusion laboratories, Blood Service reference laboratories and the NBTC Transfusion Laboratory Managers Working Group**	All cases of suspected AHTR and DHTR should be appropriately investigated, and ideally referred to a reference laboratory. Referring hospitals should make it clear to reference laboratories that they are investigating an HTR to ensure that timely, appropriate tests are undertaken. Clinical details should be completed on the request forms and the donation numbers of the units transfused should be included, so that their phenotype can be determined.

2005	**Blood Service reference laboratories.**	Reference laboratories should ensure that investigation of DHTRs includes testing an eluate made from the patient's red cells when the DAT is positive.
2001/02	**The CMO's NBTC and its counterparts in Scotland, Wales, and Northern Ireland.**	Consideration should be given to issuing antibody cards or similar information to all patients with clinically significant red cell antibodies. These should be accompanied by patient information leaflets, explaining the significance of the antibody and impressing that the card should be shown in the event of a hospital admission or being crossmatched for surgery. Laboratories should be informed when patients carrying antibody cards are admitted.