Annual SHOT Report 2013 – Supplementary Information

Chapter 16: Haemolytic Transfusion Reaction (HTR)

Additional Table – not included in the main 2013 report

Table 16.3: Serology, laboratory signs and timing of reaction for delayed haemolytic transfusion reactions in non sickle cell patients n=18

(please see Table 16.2 in the main report for full details of DHTR in the 14 sickle cell patients)

New antibody (ies) in plasma	DAT/eluate	Clinical and laboratory signs and symptoms	Days post transfusion
Anti-Fy^a	DAT negative. Eluate not tested.	Hb↓; dyspnoea.	10
Anti-c+E	DAT negative. Eluate not tested.	Hb↓; black urine; back pain. Patient at home.	8
Anti-Jk^a (enzyme only detected retrospectively). Known anti-K.	DAT positive (IgG+C3d). Eluate negative.	Hb↓; bilirubin↑.	7
Anti-c+Jk^a	DAT negative. Eluate not tested.	bilirubin↑; Hb↓.	10
Anti-E + non-specific reactions	DAT positive (IgG). Eluate negative.	Hb↓; bilirubin↑. Patient already on ITU and died unrelated.	11
Anti-Jk^a	DAT positive (C3d). Anti-Jk^a eluted.	Hb↓; bilirubin↑; dark urine, rigors, abdo pain. AIHA.	4
Anti-Jk^a+K	DAT negative. Anti-Jk^a+K eluted.	Hb↓; bilirubin↑; LDH ↑; Hp↓; jaundice.	3
Anti-Jk^a	DAT positive (IgG). Eluate negative.	Hb↓; bilirubin↑; LDH ↑; jaundice.	8
Anti-Fy^a. Known anti-c+Lu^a.	DAT weak positive. Anti-Fy^a eluted.	Hb↓; bilirubin↑; LDH↑; fever.	11
Anti-c	DAT negative. Eluate not tested.	Hb↓; bilirubin↑.	15
Anti-c	DAT positive (IgG). Anti-c eluted.	Hb↓; bilirubin↑.	10-12
Anti-Jk^a	DAT positive (IgG). Eluate negative.	Hb↓; bilirubin↑.	5
Anti-Jk^a	DAT pos –C3. Anti-Jk^a eluted.	Hb↓; fever; chills; back pain.	7-11
Anti-Jk^a	DAT positive (IgG+C3d). Anti-Jk^a eluted.	Hb↓↓ (major morbidity); bilirubin↑; LDH↑. AIHA.	12
Anti-C	DAT positive (IgG). Anti-C eluted.	Hb↓.	12
Anti-Jk^a. Known anti-M	DAT positive (IgG+C3d). Eluate not tested.	Hb↓; bilirubin↑; LDH↑.	12
Anti-M already present but emergency O neg given	DAT positive (IgG). Anti-M eluted.	Hb↓; bilirubin↑.	2
Possible weak anti-e. Historical anti-Fy^a.	DAT positive. ? eluate tested.	No Hb increment; bilirubin↑.	7

Haemolytic Transfusion Reactions (HTR) - Previous Recommendations

Year first made	Action	Recommendation
2012	**Hospital Transfusion Laboratory Managers**	Hospital transfusion laboratories should ensure that an eluate is tested as part of the investigation of a haemolytic transfusion reaction; this may necessitate referring samples to a red cell reference laboratory
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**	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

	the NBTC Transfusion Laboratory Managers Working Group	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.