

For Action

- 1.1 Validation of Platelets in Additive Solution and Plasma**
- 1.2 Removal of “High-Titre” status from Red Cell Labels**
- 1.3 National Recommendations for Patient Blood Management**
- 1.4 Update regarding Red Cell Units with High Potassium Levels**

For Information

- 2.1 UK Intraoperative Survey**
- 2.2 Official Opening of the Sheffield Therapeutic Apheresis Unit**
- 2.3 NHSBT Customer Services Patient Blood Management (PBM) Team launches PBM Newsletter**

Training & Education

- 3.1 Local Transfusion Training**
- 3.2 Training & Education Events and Courses**

For Action**1.1 Validation of Platelets in Additive Solution and Plasma**

Following the NHSBT Platelet Supply project update sent on the 4th June 2014, NHSBT will be extending the validation of platelets in platelet additive solution (PAS) and plasma.

This trial component does not replace the current product: 'platelets suspended in additive solution', where 'all' plasma is manually replaced with additive solution. Quality monitoring will confirm that the platelets in PAS and plasma comply with "Red Book" specification before release: (<http://www.transfusionguidelines.org/index.aspx?Publication=RB&Section=25&pageid=8041>, see section 7.11.4 Testing).

Platelets in PAS and plasma are used in Europe and as indicated, NHSBT already issue platelets manually suspended in over 90% PAS.

We issued the barcodes to you in July 2013; please ensure that you have updated your systems. The barcodes can be found in the following link under the heading 'Blood & Blood Components': <http://hospital.blood.co.uk/products/index.asp>

Platelets in PAS and plasma could be issued to any hospital. The component label will clearly identify them as "Platelets in Additive Solution and Plasma".

Jane Davies, Lead Specialist Blood Supply
Heather Aplin, Lead Customer Service Manager, Projects

1.2 Removal of “High-Titre” status from Red Cell Labels

NHSBT will be removing the High-Titre (HT) status from all red cell labels, in line with other UK Blood Services and recommendations made by Joint UK Blood Transfusion and Tissue Transplantation Services Professional Advisory Committee (JPAC) in the “Guidelines for the Blood Transfusion Services in the United Kingdom”

The removal of HT status from the labels of red cells will not compromise patient care, as all components intended for neonatal use are guaranteed to be tested and negative for high-titre anti-A / B. Platelet, Plasma and White Cell components will still be labelled HT negative as appropriate.

Further confirmation that high-titre 'negative' red cells (in additive solution) are not required when providing red cells across ABO blood groups is included in the British Committee for Standards in Haematology (BCSH) Guidelines for Pre-transfusion Compatibility Procedures in Blood Transfusion Laboratories. (Transfusion Medicine, 2013, [23,3-35](#)) This states that *“provided it is in additive solution, {group O red cells} do not need to be tested for high titre haemagglutinins as the volume of residual plasma is too small to cause haemolysis”*.

The change will be implemented from January 2015.

Action Required

Please ensure your local Standard Operating Procedures (SOP's) and Laboratory Information Management Systems (LIMS) are amended to remove the requirement for red cells to be 'HT Negative'.

If you have any concerns please contact your local Customer Service Manager before September 30th 2014.

Dr Nay Win, Clinical Director for Diagnostics

1.3 National Recommendations for Patient Blood Management

Patient Blood Management recommendations have been published by the National Blood Transfusion Committee. These recommendations were developed following the Future of Blood Transfusion Conference in 2012, and are supported by NHSBT and NHS England.

Patient Blood Management is an evidence-based, multidisciplinary approach to optimise the care of patients who might need transfusion, encompassing measures to avoid transfusion such as anaemia management without transfusion, cell salvage and the use of anti-fibrinolytic drugs to reduce bleeding, as well as restrictive transfusion. It ensures that patients receive the optimal treatment, and that avoidable, inappropriate use of blood and blood components is reduced.

To find out more and to read the recommendations, please click on the link below

<http://www.transfusionguidelines.org.uk/uk-transfusion-committees/national-blood-transfusion-committee/patient-blood-management>

Professor M F Murphy, Professor of Blood Transfusion Medicine, University of Oxford, Consultant Haematologist, NHS Blood and Transplant and Oxford University Hospitals

1.4 Update regarding Red Cell Units with High Potassium Levels

Between 2010-2013 there were reports to NHSBT of two red cell units used to prime neonatal/infant cardiopulmonary bypass circuits with particularly high potassium levels (red cell unit supernatant potassium levels 33 mmol/L and 41.4 mmol/L; bypass circuit levels 11 mmol/L and 13.76 mmol/L respectively). The high potassium levels were detected prior to commencing bypass and there was no adverse clinical outcome. One of the cases was described with learning points in chapter 25 "Paediatric Cases" of the recently published [2013 SHOT report](#) (Bolton-Maggs et al, 2014).

In both cases, the donor was found to have a recently described mutation, Familial Pseudohyperkalaemia (FP), which causes increased leakage of red cell potassium in the cold but not at body temperature and which may affect 1/500 donors (Bawazir et al, 2014). The mutation does not affect the donors themselves, and their donated red cells have the same supernatant potassium levels at the end of storage as standard red cells. However, due to the increased rate of potassium leakage, the supernatant potassium levels reach the end of storage levels earlier than for standard red cells. This has a potential impact for the 'fresh' (within 5 days following donation) red cells, selected for large volume neonatal/infant transfusion. The two FP donors have been excluded from the donor register and NHSBT is undertaking detailed red cell and genetic studies to understand further the implications of the FP mutation for red cell transfusions and for future donor screening.

There are few reports of adverse outcomes due to hyperkalaemia as the result of large volume paediatric transfusion. High levels such as in the two cases reported to NHSBT are rarely detected in paediatric cardiac centres that routinely check potassium levels in the circuit prior to cardiopulmonary bypass.

Recommendations

- Potassium levels **should not** be routinely measured in red cell units themselves pre transfusion as the levels may be misleading and in particular do not accurately predict potassium levels following dilution in bypass circuits; such measurements may cause confusion and delay patient treatment. However, it is important for clinicians and transfusion professionals who may be involved in large volume blood transfusion to children (in particular anaesthetists and perfusionists) to be aware of the risks of transfusion-associated hyperkalaemia (Lee et al, 2014) and that occasional red cell units may have potassium levels above the expected range.
- For neonates and infants undergoing cardiac surgery, potassium levels should be checked in the bypass fluid before connecting to the patient for all neonates and infants. If the bypass circuit potassium levels are noted to be unusually high such that they cannot be adjusted by normal procedures an alternative red cell unit should be requested from the Blood Transfusion Laboratory, (with appropriate specification dependent on availability if the situation is urgent). The details of the discarded unit should be discussed with the local haematology consultant and the supernatant potassium level in the unit itself may be checked by sending a sample to the local biochemistry laboratory. If the potassium level is thought to be above the range for age of the unit (see Bawazir et al 2014 for 97.5th centiles for potassium levels from NHSBT

- Component Development Laboratory data), this should be reported to the on call Patient consultant at NHSBT for further advice and consideration of donor investigation including for the FP mutation. In addition, a report should be submitted to SHOT.
- If there are specific clinical concerns regarding hyperkalaemia during or following transfusion in other situations, appropriate clinical measures to reduce the potassium level should be instituted and the Hospital Transfusion Team should be contacted regarding investigation of the red cell unit if still available and reporting to NHSBT as above.

A document will be shortly be available on the [NHSBT website](#), containing further background information, the Component Development Laboratory data on red cell supernatant potassium levels, and clinical recommendations for hospitals and NHSBT. The information will also be communicated separately to paediatric perfusionists and anaesthetists via their professional bodies.

References

Bawazir WM, Flatt JF, Wallis JP, Rendon A, Cardigan RA, New HV, Wiltshire M, Page L, Chapman CE, Stewart GW, Bruce LJ. Familial pseudohyperkalaemia in blood donors: a novel mutation with implications for transfusion practice. *Transfusion* Jun 19. doi: 10.1111/trf.12757. (Electronic publication ahead of print)

Bolton-Maggs PHB (Ed), Poles D, Watt A, Thomas D et al. on behalf of the Serious Hazards of Transfusion (SHOT) Steering Group. The 2013 Annual SHOT Report (2014). <http://www.shotuk.org/wp-content/uploads/Annual-SHOT-Report-2013-Bookmarked.pdf>

Lee AC, Reduque LL, Luban NL, Ness PM, Anton B, Heitmiller ES. Transfusion-associated hyperkalemic cardiac arrest in pediatric patients receiving massive transfusion. *Transfusion* 2014, 54:244-254.

Helen New, Consultant Paediatric Haematologist, NHSBT Products Team

For Information:

2.1 UK Intraoperative Survey

The UK Cell Salvage Action Group (UKCSAG) was established in 2006 to help support the wider implementation of cell salvage (CS) as an alternative to donor blood and to facilitate a UK approach to its use. The group consists of UK leaders in CS and makes recommendations considered to be best practice.

UK wide questionnaire surveys took place in 2006 and again in 2010 to to establish how intraoperative Cell Salvage (ICS) is used in UK. Using the results of these surveys the UKCSAG have developed numerous resources and tools to support ICS. These include a generic policy document for organisations to adapt to their individual needs and educational materials which include an education workbook and competency assessments. The group has also developed a patient information leaflet and have worked closely with SHOT (Serious Hazards of Transfusion) to develop an incident reporting scheme for cell salvage.

To assess the impact of these resources, see how ICS has progressed in the UK over the last four years and understand what additional strategies and resources we might provide to support you in the future, the UKCSAG would now like to repeat this survey. Emails have been sent to Cell Salvage contacts and Transfusion Practitioners asking them to take part. We are seeking one response per hospital and the survey will remain open until the end of August to give everyone plenty of time to complete it. If you require further information or have any queries then please do not hesitate to contact me.

Rebecca Gerrard, Joint Chair of the UK Cell Salvage Action Group

2.2 Official Opening of the Sheffield Therapeutic Apheresis Unit

On 16th June 2014, NHS Blood and Transplant officially opened the Therapeutic Apheresis Unit based in The Royal Hallamshire Hospital in Sheffield. The official opening was held in partnership with the Sheffield Teaching Hospitals NHS Trust, with whom our team work closely to provide a collaborative service to patients. The unit was officially opened by Chief Executives Lynda Hamlyn (NHSBT) and Sir Andrew Cash (Sheffield Teaching Hospital NHS Foundation Trust), along with our Chairman John Pattullo. Patients, donors and staff also attended the event along with Miriam González Durántez (advocate of Cord Blood donation) and representatives from Anthony Nolan.

The unit relocated into a larger clinical space within the hospital in July 2013 which allows the team to treat an increased number of patients and provide additional Stem Cell collection services to the Anthony Nolan UK Charity. A range of specialised therapies are offered using technology that exchanges, removes, or collects certain components within the blood.

For further information on Therapeutic Apheresis Services, please visit their WebPages: http://hospital.blood.co.uk/specialist_therapeutic_services/index.asp

Lydia Ball, Business Support Manager TAS

2.3 NHSBT Customer Services Patient Blood Management (PBM) Team launches PBM Newsletter

This first edition of NHSBT's PBM newsletter focuses on 'What is PBM?' and further issues will follow every couple of months, focusing on a different aspect of PBM each time.

This resource is applicable to all grades of healthcare professionals working in the transfusion chain and we hope you will take the opportunity to disseminate it to all your colleagues with a role in PBM and encourage them to share it widely.

The newsletter can be viewed and printed, or shared electronically on the following link: http://hospital.blood.co.uk/safe_use/patient_blood_management/index.asp

We would value any feedback or comments that you or your colleagues have and invite you to send them to NHSBT.customerservice@nhsbt.nhs.uk

Emma Whitmore, Patient Blood Management Practitioner

Training & Education

3.1 Local Transfusion Training

NHSBT are committed to providing specialist transfusion education and training support to our Hospitals. We are continuously adapting our provision to ensure that training and support is offered using the most efficient and sustainable methods. Sometimes this means we need to amend our delivery programme to maximise resources for both our customers and ourselves. We have succeeded in setting up our first ever delivery in Newcastle but unfortunately had to cancel one of our Sheffield programmes.

In future the new Local Education and Training Board (LETB) system will set our priorities and to respond even more to local need. This will ensure the right training is delivered at the right time and place. We recommend that Hospitals report their transfusion training needs to their local healthcare science networks which will be used to establish the annual LETB requests.

We will arrange additional programmes based on delegate registrations via our external booking system to help ensure training needs are met during the early stages of this new system

Any specific requests can be discussed with our national training lead Ruth Evans at ruth.evans@nhsbt.nhs.uk

Tracy Thurgood, Head of Learning, Workforce

3.2 Training & Education Events and Courses

A full list of NHSBT training events, which are open to hospital personnel, is available on the our website at <http://hospital.blood.co.uk/training/index.asp>

If you have any queries regarding the above, please do not hesitate to contact your local Customer Service Manager, Patient Blood Management Practitioner or either of us using the details below.

For further information please visit the NHS Blood and Transplant hospitals website on:

<http://hospital.blood.co.uk/>



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