Protocol for the management of acute and elective automated red cell exchange

Acute red cell exchange

Indications:

Recommended

- Acute chest syndrome: severe clinical features or evidence of progression despite initial simple transfusion
- Acute ischaemic stroke
- Acute hepatic or splenic sequestration
- Emergency surgery (individual considerations)

Should be considered

- Acute multi-organ failure
- Mesenteric/girdle syndrome
- Severe sepsis
- Acute priapism
- Non-resolving acute painful crisis
- Acute intrahepatic cholestasis

Discuss with haematologist on call

OUH

9-5 Mon-Fri: Red cell consultant
Out of hours: Haematology Consultant on call
Transfer to Haematology ward unless requires specialist monitoring/surgery

DGH

Oxford team available for advice

By default, patients should be exchanged locally to avoid delay unless urgent OUH non-haematology specialist care required. See Unwell patient discussion document:

Follow Acute outreach protocol

NHSBT Therapeutic Apheresis Service (TAS): Medical referral.
Mon-Fri 0830-1630:
01865 387938 or 01865 234344
Mon-Fri 1630-0830 & 24h Weekends:
01179 594666 (NHSBT On Call Consultant).
Complete NHSBT referral https://hospital.blood.co.uk/patient-services/therapeutic-apheresis-services/how-to-make-patient-referrals-to-tas/http://hospital.blood.co.uk/media/27366/frm51212.doc
Email: nhsbt.tas.oxford@nhs.net

NHSBT require: height, weight, current HCT, HbS% if available, do not wait for HbS%, ensure TAS has the telephone/bleep number of the doctor who will be on site.
Pre-exchange blood tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
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<tbody>
<tr>
<td>FBC</td>
<td>Retic count</td>
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<tr>
<td>U&amp;E, Ca, Mg</td>
<td>Clotting screen</td>
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<tr>
<td>Viral serology</td>
<td>LFT</td>
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<tr>
<td>Hb HPLC</td>
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Venous access: must be achieved prior to NHSBT arrival

- Veins should be large enough to easily site a 16 G venflon in each antecubital fossa.
- Where peripheral venous access is inadequate, a suitable central apheresis line (renal vascular catheter or femoral line) should be inserted.
- Oxford: 9am-5pm the line insertion service should be used. Out of hours contact CICU. Lines are available from DTU.
- DGH as per local agreements.

Agreed settings for acute a-RCE

DGH: according to local agreement. Ensure all colleagues are aware of apheresis machine delivery, which must be accepted.

OUH
- Clinical Haematology Ward Churchill Hospital
- ICU at the Churchill or John Radcliffe Hospitals
- Women’s hospital observation area
- Surgical/specialist area by prior agreement

Patient information and consent

The rationale for the procedure: local haematology clinical team. NHSBT staff will explain the procedure and request written consent from the patient.

Patient information leaflet is available on the NSSG or via https://nhsbtdeviceblobcorewindows.net/umbraco-assets-corp/1949/redcell-exchange-procedure.pdf

Nursing responsibilities

NHSBT TAS: patient monitoring during the a-RCE, in relation to the transfusion and not the patients acute clinical state.

Ward nursing team: ongoing acute patient monitoring. NHSBT staff will complete all observations in SEND and use the joint approach nursing care plan (N120) http://nssg.oxford-haematology.org.uk/oxford/clinical-care/N-120-joint-apheresis-dialysis-patient-line-management.pdf

Post a-RCE monitoring

Monitoring of vital signs (Temperature, pulse, BP, respiratory rate, oxygen saturations)
- every 15mins for the first hour
- every 30 minutes for the next hour
- then as clinically indicated but a minimum of 4 hourly

Additional monitoring will be needed depending on the indication for the a-RCE. Be alert for signs of delayed red cell transfusion reactions.

Blood bank: notify asap

Group and screen

Extended Phenotype

Other protocols available at:
http://nssg.oxford-haematology.org.uk/red-cell/red-cell.html
**Elective red cell exchange**

**Coordination of planned programmes**

- NHSBT are responsible for the coordination of the exchange procedures undertaken in the apheresis suite and women’s centre.
- NHSBT TAS are responsible for notifying the OUH Haemoglobinopathy Specialist nurse of any patients from Oxford or from the DGHs needing femoral lines as soon as the referral is received in TAS and date of exchange diarised.
- OUH Haemoglobinopathy Specialist Nurse will arrange bed and line insertion and confirm back to TAS that these are booked. To ensure that bed is available early notice of the next agreed date with the patient is desirable.
- The TAS registrar will not be asked to arrange lines for RCE patients.
- Haemoglobinopathy Specialist nurse/ will coordinate programmes that take place in the haematology day treatment unit/other planned areas. See planning document S50:
- TAS will liaise with patients needing lines on the Day Treatment Unit to either attend TAS at the John Radcliffe (JR) Hospital first for blood samples, at 0800 or the Churchill Hospital. Bloods taken at NHSBT speed up the blood provision, coagulation results.. Patients will be advised that they can travel to the Churchill Hospital as soon as the blood samples have been taken at the JR.
- If patients decline or are unable to attend TAS, at the JR first, NHSBT is responsible for notifying the Haemoglobinopathy Specialist nurse, as soon as possible. The specialist nurse will then liaise with the Day Treatment Unit for DTU take the blood samples. DTU will arrange a courier to transport samples to the JR.

**Discharge Summaries**

NHSBT TAS are responsible to emailing/posting the discharge summaries to the referring consultants and CNS, where applicable (Oxford and Milton Keynes) via NHS.NET.

**Review of RCE programme efficacy**

- The frequency of exchanges is determined in conjunction with the OUH consultant team
- Review with NHSBT at the red cell/TAS quarterly MDT
- Review by local clinicians
- Review at annual review appointment
References:

American Society of Hematology 2020 guidelines for sickle cell disease: Transfusion support

Standards for the Clinical Care of Adults with Sickle Cell disease in the UK © Sickle Cell Society 2018


Author: Dr Wale Atoyebi, Clinical Lead for Haemoglobinopathy

Review

<table>
<thead>
<tr>
<th>Name</th>
<th>Revision</th>
<th>Date</th>
<th>Version</th>
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<tbody>
<tr>
<td>Dr Wale Atoyebi</td>
<td>Pre-peer review</td>
<td>Jan 2013</td>
<td>1.0</td>
<td>Jan 2015</td>
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<tr>
<td>Dr Deborah Hay</td>
<td>Routine review</td>
<td>Aug 2015</td>
<td>1.2</td>
<td>Jan 2017</td>
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<tr>
<td>Dr Wale Atoyebi, Sandy Hayes, Specialist Nurse</td>
<td>Full review, updated references and pathways</td>
<td>Dec 2017</td>
<td>2.0</td>
<td>Dec 2019</td>
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<tr>
<td>Dr Magbor Akanni, Dr Noemi Roy, Sandy Hayes</td>
<td>HCC, redesign, update NHSBT contact details</td>
<td>Dec 2020</td>
<td>3.0</td>
<td>Dec 2022</td>
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<tr>
<td>Manuela Sultanova, Sandy Hayes</td>
<td>Coordination of planned programmes updated, inclusion of discharged summaries.</td>
<td>November 2021</td>
<td>4.0</td>
<td>Nov 2023</td>
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<tr>
<td>Sandy Hayes</td>
<td>Unwell patient discussion checklist link added</td>
<td>December 2021</td>
<td>4.1</td>
<td>December 2023</td>
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