Blood Transfusions – Children requiring regular treatment - Summary Paediatric Clinical Guideline – Joint Derby and Burton

Reference No: CH CLIN G111/May 20/v003

Investigations and vaccinations prior to first transfusion

- Any children not vaccinated against hepatitis A and B should be offered immunisation.
- Antibodies to hepatitis B, hepatitis C, and HIV should be determined.
- Ensure that an extended red cell phenotype has been performed.
- Check baseline LFTs and ferritin

Pre-transfusion assessment / bloods

Blood samples need to be taken 1-3 days prior to transfusions. Bloods needed are:

- Antibody screen and cross match (written form/Lorenzo/V6)
- Full blood count (needs separate sample to the cross match sample- Lorenzo/V6 request)
- In sickle cell disease- HbS% monthly until < 30% then 3 monthly (order as Haemoglobin electrophoresis- Lorenzo/V6 request)
- LFTs and Ferritin monthly (LorenzoV6 request).
- For the monitoring of iron overload see: Guidelines for Iron Chelation Therapy in Children and Young People receiving regular Blood Transfusions REF NO: CH CLIN G107).
- Children taking Deferasirox (Exjade) need LFT, U&E and Ferritin monthly for monitoring. They should also have their urine dipped for protein each time.

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Transfusion

Observations prior to each transfusion
If any are abnormal or concerns that the child is unwell must have a doctor review to assess if fit for transfusion.
The nurse who will be setting up the transfusion will follow all procedures specified in the Trust Transfusion Policy
In the 1st few months of a transfusion programme, a consultant paediatrician (Dr Weights) should see the child at each visit and discuss any problems.
If the patient has a 'Portacath' this will be accessed by one of the day care nurses competent in this technique. Cannulation will usually be performed by a paediatric specialty trainee. A nurse or other doctor competent in paediatric cannulation may also insert a cannula for transfusion. No more than 2 attempts at cannulation may be made by 1 individual.
The transfusion should be started within 1 hour of the child's arrival to Day Care.

Transfusion Policy

The following policy is available via the trust intranet and provides guidance for all transfusions:

TRUST POLICY AND PROCEDURES FOR THE TRANSFUSION OF BLOOD AND BLOOD COMPONENTS (Reference CL-RM/2012010)

The volume of packed red cells to be transfused should be calculated according to the formula below:

Volume to be Transfused (mls)	=	Weight of the patient (kg)	X	Aimed for increment of Hb	X 0.4

Example: Child weighing 35Kg with an Hb of 105 would require 35x35x0.4 = 490mls of packed red cells to increase Hb to a target of 140g/L

Do not give more than 20ml/kg per transfusion. Blood should be given over 3 to 4 hours with a maximum flow rate of 5ml/kg/hour.

Each child on regular transfusions will usually have their own individual transfusion plan in the folder on day case or in their notes.

For children with Thalassemia the target Hb should not exceed 140g/L.

When a transfusion programme is initiated, a consultant paediatric consultant should confirm what volume of blood to transfuse**.**

The volume of blood transfused should be adjusted to:

- Maintain the pre-transfusion haemoglobin levels above 95-100g/L in patients with thalassaemia
- Maintain the HbS < 30% in patients with sickle cell disease.

Adjustments to the volume of blood to be transfused should only be made after discussion with a consultant paediatrician (Dr Weights)

Risks associated with regular transfusions

The risks associated with regular transfusion include acute transfusion reactions, allo-immunisation to red cell antigens, transmission of viral infection, and, in the long term, iron overload. Acute transfusion reactions should be managed according to the Trust Transfusion Policy.

Frequency of transfusions and further appointments.

Transfusions should generally be given at an interval of 4 weeks unless specified by the Consultant Paediatrician.

Transfusions should be scheduled in advance and maintained at a fixed schedule. This enables patients and families to establish routines and will improve quality of life. **All families should receive forms for cross match and monitoring bloods prior to leaving from their transfusions***.* Appointments should be made for the next transfusion and blood tests. Cross matches are valid for 72 hours in patients on regular transfusions.

Transfusions for older children should be offered out of hours to minimise disruption to the child and their family. However, it is important to maintain regular review of these children by the specialist team.

For further information please refer to the FULL Clinical Guideline for Paediatric Blood Transfusions.