Monitoring of patient during and following transfusion

Blood Transfusion Procedure

Purpose of this procedure:

This procedure outlines how patients should be monitored during and following the transfusion of any blood component.

The Procedure:

Regular visual observation and monitoring of the patient during the transfusion of blood or blood components is required to detect any adverse event as early as possible so that action may be taken.

Adverse reactions may be seen with all blood components therefore monitoring is required for patients receiving red cells, fresh frozen plasma (FFP), platelets or cryoprecipitate. Severe reactions most commonly present during the first 15 minutes of a transfusion and the patient should be observed most closely during this period. Even a few millilitres of ABO incompatible blood may cause symptoms within a few minutes.

Transfusions should be given with the same attention to patient observation whatever the time of day or night. Please see NHS Lothian Transfusion Procedure: Administration of blood components for advice regarding night-time transfusion.

Key principle: Observations pulse (P), blood pressure (BP), temperature (T) and respiratory rate (RR) should be undertaken and documented for every unit transfused. Minimum monitoring of the patient receiving a blood transfusion should be strictly adhered to.

Record observations on a National Early Warning System (NEWS) chart (or local equivalent) and highlight as 'transfusion observations'.

The minimum transfusion observations **for each unit** are:

- Temperature, blood pressure, respiratory rate and pulse at:
    - Baseline* no more than 60 minutes prior to the start of the unit
    - 15 minutes after the start of the unit
    - At the end of each unit, within 60 minutes of completion of transfusion
- Regular visual monitoring of the patient throughout the transfusion episode
- Deterioration of the patient's condition or development of symptoms suggesting a transfusion reaction should prompt more frequent observations and review, dictated by the clinical situation
- Contact medical practitioner to review if any significant changes in observations compared to baseline measurements

**If a patient has a pyrexia on baseline measurement, this does not necessarily mean that the patient cannot receive their transfusion if this is clinically imperative. In this situation, the patient would need to be monitored closely during the transfusion – paying particular attention to any temperature rise above baseline and / or changes to other vital signs.*

In critically ill patients, the respiratory rate is an early and important indicator of deterioration.

Monitoring of infants during transfusion is not fundamentally different from adult practice. Restlessness, crying, or unexpected lethargy may all be signs of an early transfusion reaction. If there is any doubt the transfusion must be stopped and the patient assessed.

For rapid transfusions and when transfusing FFP, platelets or cryoprecipitate, more frequent observations may be required.

Any routine patient observations should be continued throughout the transfusion.

All blood component transfusions must be completed within four hours of removal from temperature-controlled storage. Most routine red cell transfusions for a non-bleeding adult patient can be given over two hours per unit unless the patient is at risk of fluid overload, when slower transfusion is advised. Platelets, FFP and cryoprecipitate are generally transfused over 30 minutes. Transfusion rates and volumes for babies and children must be calculated carefully according to body weight. For further information regarding components, storage and administration timing requirements see Blood Transfusion Guideline: Blood components and storage and handling requirements.

In patients of all ages who are incapacitated (including those who are ventilated, confused, sedated or unconscious) it is more difficult to detect signs of early transfusion reactions therefore more frequent observations may be required.

All patients should have a call bell (or alternative method of alerting staff) within easy reach and be asked to inform clinical staff immediately if they feel unwell (for example shivering, flushing, pain, shortness of breath) which might indicate a developing transfusion reaction.

For patients who are not able to call for help if symptoms arise, consideration should be given to caring for them in an appropriate area where they can be readily observed (rather than in a side room, for example) and/or to performing observations more frequently.

Throughout the transfusion, observe the patient for any sign or symptom of incompatibility or adverse reaction to a compatible transfusion, e.g. flushing, urticaria ('hives' – dark red raised itchy bumps on the skin), vomiting, diarrhoea, fever, itching, headache, haemoglobinuria (free haemoglobin in the urine giving the urine a red or dark colour), rigor, severe backache, collapse, circulatory failure.

Once a blood component transfusion has commenced, it is highly recommended that the patient remains in the same clinical area until the component has been fully transfused. Exceptions might include, for example, a critically ill bleeding patient requiring to be transferred for investigation or surgical intervention.

All in-patients should continue to be observed for signs of a transfusion reaction for the 24 hours following transfusion.

Patients transfused as a day case, or patients discharged soon after transfusion (within 24 hours) should be provided with documented post transfusion advice regarding symptoms to be alert to which might indicate a transfusion reaction and a contact telephone number which they can call should they have any concerns. It is the responsibility of each department where this situation might arise to ensure such a mechanism is in place and is used.

Actions required if patient shows signs or symptoms suggestive of a transfusion reaction

- Stop the transfusion immediately and inform a medical practitioner
- Continue to monitor temperature, pulse, BP and respiratory rate: record results and take appropriate action
- Any suspected incompatibility or significant transfusion reaction should be investigated and the transfusion laboratory informed immediately. A transfusion reaction form (obtained from the laboratory) must be completed. The blood pack, any empty packs and giving sets should be returned to the hospital transfusion laboratory immediately in an appropriate, sealed double plastic bag
- Significant reactions that have resulted in discontinuation of the transfusion must be reported on Datix (select 'transfusion' category)
- For descriptions of all the different types of reaction that are associated with blood transfusion and for guidance regarding management of adverse reactions please see Blood Transfusion Guideline: Adverse reactions to blood components

Associated materials/references:

NHS Lothian Guideline: Adverse reactions to blood components

NHS Lothian Blood Transfusion Procedure: Reporting adverse events and reactions

NHS Lothian Blood Transfusion Procedure: Completion of transfusion episode and associated documentation