Appendix 10 - Delayed transfusion

Avoiding delays in red cell transfusion

In emergency situations where there is life-threatening anaemia, transfuse emergency red cells without delay (while sending appropriate samples and informing blood bank).

KeyPrinciples

1. It is **essential** to provide ABO compatible blood
2. It is **preferable** to provide RhD and K matched blood for patients of child bearing potential
3. **Provide antigen negative blood where allo antibodies have been identified**

This flow chart aims to support decision- making between clinical and laboratory teams to reach the safest transfusion strategy for each clinicalsituation.

Initial testing

Is a valid sample available? (use to crossmatch)
ABO/RhDGroup
AntibodyScreen
Previous Transfusion sample?

Clinical Assessment

Hb and FBC (note baseline and rate of change)
Active bleeding?
Cause of anaemia?
Evidence of Critical anaemia?

If criteria for the issue of ABO/ RhD compatible blood are met and urgent transfusion is clinically indicated, issue blood for immediate transfusion

Red Cell Antibodies or Anomalous ABO/D Group

Antibody identification

- Allo- or auto-antibody?
- Single or Multiple antibodies?

Other tests

- DAT
- Red Cell Phenotype

Review historical transfusion data

- Look on LIMS, Health Records, Records from other boards

Clinical Questions

Baseline Hb and Rate off all-Stable or deteriorating?

Previous Transfusion History, including

Is the patient of child-bearing potential?

Any known special requirements of transfusion?

Establish clear communication between bloodbank and clinical staff.
Discuss with a local haematologist
Consider support from reference laboratory or specialist in transfusion

Key information to establish

- How long can the patient safely wait for transfusion?
- How long will it take to do further tests and obtain better matched blood?
- What are the risks of giving blood that does not fully meet specifications?

If fully compatible blood cannot be provided and/or special requirements cannot be met within the time specified by the clinical team, use the following guidance to minimise delay in blood provision [8]

PRIORITY 1: Issue ABO compatible blood - Group O if ABO group cannot be established.

Rationale: No risk of acute haemolysis due to ABO incompatibility

PRIORITY2: Issue RhD negative units to patients with child-bearing potential and those with immune an t i-D[1]

Rationale: Reduced risk of allo-immunisation. Reduced risk of HDFN due to anti-D. Reduced risk of delayed haemolysis due to anti-D.

PRIORITY 3: Where possible, select blood that is negative for antigens that are the target of antibodies currently detectable by IAT at 37 degrees[1]

Rationale: Reduced risk of delayed haemolytic transfusion reactions . Advise that haemolytic reactions are unpredictable.

PRIORITY 4: where possible, select blood that is fully Rh (DCcEe) and K compatible with the patient[1]

Rationale: Most clinically-significant red cell allo antibodies will be of these specificity.

PRIORITY 5: Where possible select blood that is antigen negative for historical but currently undetectable allo-antibodies of

Rationale: These patients may still experience delayed HTRs due to stimulation of undetectable antibodies (i.e. anamnestic response, esp Kidd antibodies).

The following order of antigen negative selection should be applied if the urgent need for

In order of decreasing priority:
D>c>C>E>e>K(k)>Jka/b>Fya/b>S/s(U)>M>N> High Frequency Antibodies.
This is based on the frequency and severity of historic reports of incompatible transfusion.[2]

Patient factors and previous transfusion history should also be considered on an individual case basis

Consider if specific transfusion requirements can be waived when blood requirement is urgent

IRRADIATION - instead select units> 14 days old if time allows [3]
CMV - Risk reduced by leucodepletion [7]
HbS NEGATIVE - Untested units are unlikely to be HbS +ve [6]
AGE OF RED CELLS - Risk of higher potassium levels in older units and of slightly reduced red cell survival.[5]
NEONATAL SPECIFICATION [7]- additional safety of accredited donor status and additional IAT testing of these units may need to be waived in urgent situations.

V1.0June2022