

Antenatal case study

Dr Rekha Anand

Consultant in Transfusion Medicine

NHSBT Birmingham



Antenatal testing


The purpose of the guideline is to make evidence-based recommendations for the application of blood grouping and red cell antibody testing in pregnancy.

The aim is to predict the potential for, and where possible, prevent, haemolytic disease of the fetus and newborn .

continued

- The blood group and antibody status of a pregnant woman should be tested at booking and at 28 weeks gestation to identify the ABO group and D status – and to detect red cell antibodies

Definitions of Rare Blood

- G.Daniels: Any factor having an incidence of 1% or less in a given population (*Human Blood Groups*).
 - American Red Cross: A red cell phenotype that occurs at a frequency of 1:1000 or less.
 - Lacking common, clinically significant antigens.
 - Antigen is often linked to ethnicity.
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Background

- NHSBT collects nearly 1.8 million blood and platelet donations each year.
- In multiethnic Britain 4% of our blood donations come from Black and Minority Ethnic Communities.
- These communities are more susceptible to conditions that need multiple transfusions.



Background

- 31 year old antenatal patient, West Midlands
- History of high levels of anti-D and HDFN
- Fifth pregnancy; previously only one live baby
- Doppler MCA PSV ultrasound scan demonstrated that fetus was anaemic
- Fetal Medicine Consultant suggested IUTs to prevent potentially fatal anaemia & hydrops fetalis

Intrauterine Transfusion

- Direct transfusion of red cells into peritoneal cavity of fetus, or the umbilical or hepatic vein of the fetus.
- *Normally carried out from 18 weeks gestation until viable baby can be delivered – 36 weeks.*
- Mrs R – IUTs at 2-3 weekly intervals between 16 and 31 weeks



Specification for IUT




- Use within 5d of donation
- Compatible with the mother, i.e. negative for clinically significant antibodies, RhD negative, CMV negative, HEV negative & HbS negative. Red cells suspended in CPD-anticoagulated plasma within 12 hrs of venepuncture, with a target haematocrit of 0.70-0.85 L/L.
- Irradiated

Managing the request

- Complex combination of antibodies: suitable units not available / “off the shelf”
- Searched the database for suitable donors and implemented our special call-up procedure
- 80 suitable donors on the database (approx. 1.2 million active donors). Then 40 when we accounted for date of prev donation, travel, illness etc.
- Contact by ‘phone, email & post. 2 donors per IUT

Managing the request

- Identified sessions convenient to the donor within 5 days of IUT.
- Contacted staff at blood collection sessions – blood to be tagged.
- Alerted Manufacturing & Hospital Services staff
- Checked with transport – 12hr deadline 
- Tracked the donation, confirmed with hospital and thanked the donors

Teamwork delivers



Thanks to the generosity of our blood donors and the hard work & commitment of NHSBT staff, suitable red cells were supplied for nine IUTs between Sept and Dec 2016

- Last IUT on 29th December
- Close communication between the Fetal Medicine Unit and NHSBT RCI, Session Staff, Hospital Services, Transport, Manufacturing and Medical staff




January 2017

- A health baby boy at 33 weeks
- Baby received phototherapy, IVIG and exchange transfusion but was discharged after 7 days.



Key Messages

- NHSBT needs to know about patients with challenging transfusion requirements – as early as possible
 - Monitor the patient and keep everyone informed.
 - Units for IUT have specific characteristics with implications for collection, transport, processing and issue.
 - Need a documented procedure
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Key Messages

- Careful planning, coordination and communication
- Blood donors!




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