

Clinical Case Studies

It's a small world

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Case Report

- 30 year old British Asian lady G2 P1
- IUD at 39 weeks pregnancy, admitted to labour ward for induction.
- One previous pregnancy in 2007- delivered at 30 weeks. Baby jaundiced. Alive & Well male child.

Current pregnancy:

- Booking sample O Rh D pos- no antibodies
- Not tested at 28 weeks
- On admission to labour ward, her Hb 130 g/l
- A blood sample was sent to hospital blood bank for group and save
- Grouped as O Rh D pos – Antibody screen positive on all panel cells

Q1: What is her Rh group?

Her Rh phenotype: D+, C-, c-, E-, e-

- A. Weak D
- B. D variant
- C. Rh null
- D. -D-
- E. Incorrect

Red Cell availability

- Sample sent to NHSBT for investigation :phenotype confirmed as -D-/-D- and possible anti Rh 17 antibodies . Sample sent to IBGRL for genotype confirmation
- Two units -D- available at National Frozen Blood Bank . Both from same donor, last donation a month back. (donor also has anti Rh-17)
- No Rh null units available.

Q2: What is immediate transfusion advice?

- A. Thaw two frozen units and send to hospital
- B. Transfuse O Rh D negative units in case of massive haemorrhage
- C. Wait and watch and contact NHSBT to cross-match 2 units in emergency
- D. Transfuse O Rh D positive units if massive blood loss

Follow up

- Mother had 3rd degree tear and had to be taken to theatre- blood loss around 400ml-500ml in total - Not transfused
- Baby had IUGR 2.9 kg. Placental infarction suspected.
- Family refused autopsy.
- Rh type and antibodies confirmed at IBGRL
- RCI antibody titres 1/128
- Follow up letter sent to the hospital advising early notification and coordination in future pregnancies
- Risk of HDN
- Presented 5 months later- 8 weeks pregnant
- Antibody titre 1/256 booking, 4 weekly follow up (1/128)
- Haemoglobin at booking 115g/l, then >125g/l

Risk of HDN

- 10 publications since 1997
- Mild to severe (abortion & still birth)
- One review – titre & intrauterine intervention determine outcome (Hirose M :2000) *
- Related to antibody titre :
 - One in Poland 1/64 : treated with phototherapy (Lenkiewicz B: 2000 - first case of moderate)
 - USA 1/128: exchange with maternal blood (Shah SI: 2005)
 - Canada 1/256 IUT with ABO mismatched washed maternal red cells (Denomme GA;2004)

Transfusion requirement & Options for Red Cell Transfusion

- Baby : IUT, Exchange, Top up
- Mother : Bleeding – APH/PPH
- Siblings screened – not suitable
- Autologous donations
 - Can make units available at hospital for delivery
 - Supplement allogeneic
- One available UK donor (last donation nearly a year ago)
- Four imported units (Japan) in stock
- European stock availability for frozen units
 - Paris 19
 - Madrid 6

Antenatal Management

- Monthly Antibody screen & titres – additional antibodies
- Paternal Phenotype
- Non invasive monitoring of baby
- NHSBT to be informed of transfusion requirement- as much notice as possible
- 23 weeks- Intra-peritoneal transfusion- 30ml (UK)
- 24 weeks- IUT (UK)
- 28 weeks- IUT (Japan)
- 32 weeks- IUT (UK)
- Planned LSCS – 35 weeks
- Imported red cells from France

It's a boy!

- Hb 143g/l at birth. Not transfused
 - Phototherapy
 - Hb192g/l two days later.
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- Good outcome

5 weeks later

- Admitted to hospital with Haemoglobin 60g/l
- Antibody screen positive (both mother & baby)
- Baby – no valid group

- Top up Transfusion
- Post Top up- 90g/l

- A week later 82g/l
- Not jaundiced
- DAT negative

Q3: What is the possible cause?

- A. Immune haemolysis
- B. Non immune haemolysis
- C. Fe deficiency
- D. Bone Marrow Suppression
- E. Other

Management & Outcome

- Monitor Haemoglobin
- Symptoms: “fall asleep while feeding” so they can't get enough milk and don't grow properly!
- Transfuse when Hb below 70g/l
- Top up transfusion (x3 frozen thawed)
- EPO – two weeks for response
- Hb 94g/l – 4 weeks post transfusion
- Reticulocytes: 2.9

Learning points – Rare Blood

Mother:

- Maintain Haemoglobin
- Minimise/avoid transfusion
- ?Role of IV IgG

Baby:

- Maternal antibodies can persist 3-4 months after birth
- Neonatal erythropoietic suppression by IUTs
- Transfusion Threshold: (note transfused blood Hb A)
- EPO to reduce transfusion requirement

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Thank you !