

# **BBTS / NEQAS 2018: What to do if a Patient has Antibodies & Needs Urgent Transfusion.**

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# Case Example:

- Transfusion Lab phone: Pan-reactive autoantibody, DAT pos.
- Previously identified anti-Jk<sup>a</sup> in a patient's G & S sample. Patient is group A+ (tested 3 times before).
  - Phoned ward to say blood would need to be ordered in from NHSBT, if required.
- Lab just phoned by Theatre
  - 50-year-old male patient is mid-way through his laparotomy and is bleeding and they require 2 units of blood. No suitable Jk(a-) units are found in the fridge, by chance.
- What would you do?



# Select:

- A. Tell theatre they will have to wait for Crossmatched, Jk(a-) blood to come from nearest Blood Services Centre, which will be 4-5 hours **minimum** (once received at NHSBT), on a blue light
- B. Give emergency O negative blood
- C. Give ABO, full Rh & K matched – with steroids & IVIG cover, until Jk(a-) blood can be obtained from Blood Services (serologically most compatible if time permits)
- D. Give emergency O positive blood

# Rationale & Questions:

## 1. Clinically

1. **How urgent?** How long (in mins) till need blood at bedside?
2. **Other measures immediately usable?** eg: TXA, cell salvage, if appropriate etc.

## 2. Blood Options:

### 1. Ag neg: Jk(a-)

- timing (any typed in fridge by chance / 1-2 hrs matched from NHSBT on “blue-light” / hospital lab to phenotype units)

### 2. Option C: ABO, full Rh & K matched (80% Abs) – with steroids & IVIg cover, to ↓DHTR

1. 1g IV Methylpred at Tx
2. IVIG 0.4g/kg within hours of Tx
3. Monitor for renal failure – (as free Hb toxic to renal tubules)
4. After units issued, phenotype – how many Jk(a+) ?

- In end, issued ‘Option C’ blood, but held off ok till Jk(a-) units from NHSBT



# Clinical Priorities:

As per Formula 1:

**“to finish 1st, first you have to finish!”**

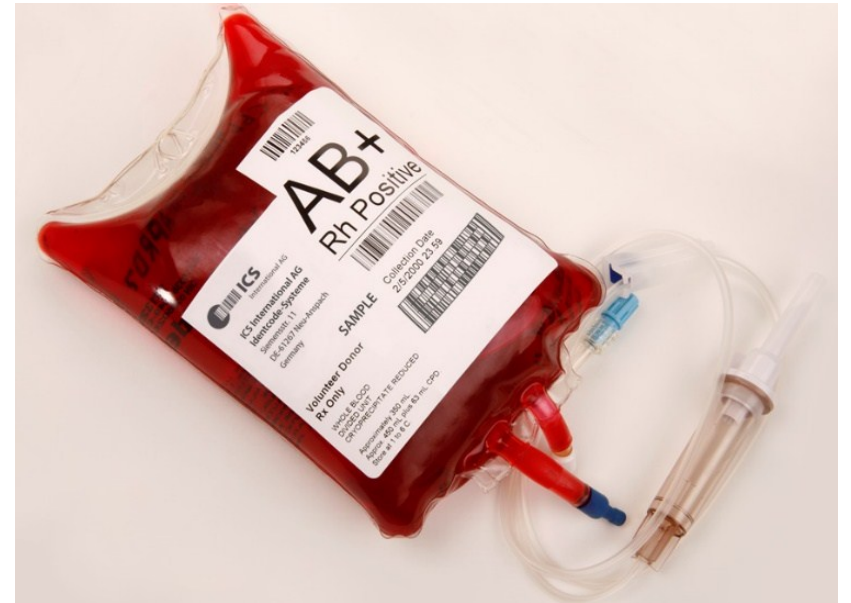
**“to get a DHTR (or AHTR), first you have to live long enough!”**

1. It is no good giving ‘perfect’ blood after death.
2. Patients should not die from lack of blood.
3. It is a balance of clinical risks: if clinicians need blood in 10 mins (as life-threatening) – then for the Lab, they are going to give it: it is only a question of **“what blood”** they are going to give.



# SHOT 2016:

- **6** out of 14 **deaths** were due to **DELAYS** in Transfusion:
  - 1 death directly due to delay -
    - when “urgent” transfusion needed;
  - 3 were probably due to delay -
    - 2 in emergency Tx; 1 routine Tx;
  - 2 were possibly due to delay -
    - 1 in emergency Tx; 1 when urgent Tx needed;



# SHOT Case 1

- Male in 60s with known AIHA, unwell - with Hb 38g/L;
- Pan-reacting auto-Ab, so referred to Ref Lab 2 hours away;
- **Patient died before results complete; no blood had been given.**
- Had presented 1 day before – should have taken G&S then, not waited 1 day;
- No Consultant Haematologist on site, for care out of hours, due to centralisation of specialist services.
- **Be that as it may .....**



# What would you have done, if clinicians needed blood?

- A. Tell clinicians they will have to wait for results of antibody tests and crossmatching of suitable units at Blood Service 4-5 hours minimum, excluding transport of blood.
- B. Tell clinicians they will have to wait for results of antibody tests at Blood Service - maybe 2-3 hours, if *hospital* do cross-match (if no alloantibodies, or only Rh or K antibodies).
- C. Give emergency O negative blood
- D. If his ABO group tested on 2 occasions, give his ABO & D group blood
- E. If his ABO group tested on 2 occasions, give ABO, full Rh & K matched blood – with steroids &/or IVIG cover

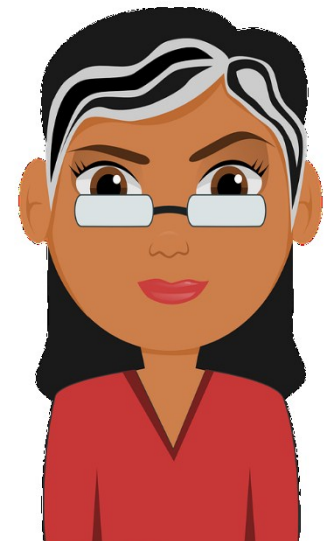


# What could have been done?

- After looking patient up on Sp-ICE, for previous Abs.....
- **Plan B:**
  - **ABO, full Rh & K matched** blood (covers 80% Abs) – with steroids and/or IVIG cover, to ↓DHTR:
    1. 1g IV Methylprednisolone at Tx
    2. IVIG 0.4g/kg within a few hours of Tx
    3. Monitor for renal failure – (as free Hb toxic to renal tubules)
    4. After units issued, phenotype – how many antigen + ?

## Case 2

- Female in 50s, with chronic gynae bleeding, admitted from clinic 4pm with Hb 56g/L; stable.
- G&S sent 9am next day – pan-reacting Ab; sent to Ref Lab;
- 2pm – acutely ill, central crushing chest pain and RR=40/min;
- Diagnosis: cardiac ischaemia. Hb 46g/L.
- **No blood given till 5pm! (3 hours of cardiac compromise!)**



# What could have been done?

- G&S should have been sent in evening.
- Sample to Ref Lab was “routine” not urgent; blood from Ref Lab was “when available” not urgent.....
- Be that as it may.....
- **What would you have done?**

# What could have been done?

- A. Tell clinicians they will have to wait for results of antibody tests at Blood Service - maybe 2-3 hours, if *hospital* do cross-match (if no alloantibodies, or only Rh or K antibodies).
- B. Give emergency O negative blood
- C. If her ABO group tested on 2 occasions, give her ABO & D group blood
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# SHOT Case 3

- Male in 50s in A&E, with bleeding varices due to alcoholic liver disease;
- Major Haemorrhage call 01:40 hrs.
- Patient has anti-K + anti-C<sup>w</sup> : BMS not want to issue 'shock pack' or allow use of O neg emergency blood in A&E fridge.
- Consultant Haematologist contacted 25 mins into MH, to authorise blood – given 5 mins later **(30 mins after MH call!)**
- Patient needed ITU but recovered fully.



# What could have been done?

- Lack of knowledge of BMS alone at night;
- Failure to follow emergency procedure for patients with known red cell antibodies –
  - Issue O- K- and immediately contact Consultant Haematologist on call.

• **What would you have done?**

# What could have been done?

- A. Give emergency O negative, K- blood
- B. If his ABO group tested on 2 occasions, give his ABO & D group blood
- C. If his ABO group tested on 2 occasions, give ABO, full Rh & K matched blood (covers 80% Abs) – with steroids &/or IVIg cover
- D. Give emergency O positive, K- blood



# What could have been done?

- In this case – effectively give blood as below, as would not have found C<sup>w</sup> neg blood, but O- very unlikely to be C<sup>w</sup> pos;
- Only 1-2% of all blood is C<sup>w</sup> pos – balance of risks in major haemorrhage / other emergency;
  - Likely if any unit is positive, it would be only one
- **Plan B: ABO, full Rh & K matched** blood – with steroids and/or IVIg cover, to ↓DHTR:
  1. 1g IV Methylprednisolone at Tx
  2. IVIg 0.4g/kg within a few hours of Tx
  3. Monitor for renal failure – (as free Hb toxic to renal tubules)
  4. After units issued, phenotype – how many antigen + ?