“SUPPLYING THE WRIGHT BLOOD”

An Anti-Wr^a

Catherine Cockshott
Healthscope Pathology- John Fawkner Hospital
Mrs. V.S., a 51 y.o. female presented to the Oncology unit at John Fawkner Hospital with sepsis. Undergoing treatment for Ca.lung. History of previous transfusions but not with our company. Hb= 89; 2 units packed cells ordered. Grouped as A Rh(D) positive. 3-cell screen negative. (Ortho BioVue Method).

Two A positive units selected, one discovered to be incompatible by IAT crossmatch. (Biovue method).

12-cell panel set up. No reaction in any well (including auto).
- Patient’s DAT and unit DAT both negative.
- 3rd unit selected & found to be compatible. → transfusion proceeded.
- Pigtails of suspect unit sent to Red Cross Reference Lab. (What would we do without Jenny?!)  
  
- An Anti-Wr^a was found to be the cause of the incompatible crossmatch.
- The donor was not known to be Wr^a positive. An incompatible crossmatch is the most common way of making such a finding, as donors are not routinely screened for this antigen.
There are 14 known donors who are known to be Wr<sup>a</sup> positive out of 120,000 on the Red Cross database, however, statistically the incidence of Wr<sup>a</sup> is about 1:1,500.

- Approximately 50% of unit incompatibilities are due to anti-Wr<sup>a</sup>!!
- The antibody normally gives moderate to strong reactions (3+ to 4+)……(10+ to 12+).
- Usually reacts best at RT. Enzyme-resistant. Occasionally no reaction in IAT.

Anti-Wr<sup>a</sup> can cause haemolytic transfusion reactions as well as HDNB!!
Some interesting facts about Wrα

• One of the antigens of the Diego system, which consists of 21 antigens.
• Most people are Wr(a-b+).
• Antigen is fully-developed at birth.
• Autosomal inheritance.
• Chromosome 17.
**Anti-Wr<sup>a</sup> facts**

- Usually naturally-occurring, and in 1-2% of all blood samples.
- Generally seen in patients who have formed other blood group antibodies and/or have AIHA; ie a hyperactive immune system.
- Frequently incomplete.
  - 1 study found: 36% IgM only
  - 20% IgM and IgG
  - 44% IgG
INCIDENCE

- Seems fairly constant for the Caucasian population.
- Very few studies have been done on non-Caucasian populations.....however.....
- 2000 Australian Aborigines have been tested, with no Wr$^a$ positive subjects.*
- 2000 Papua New Guineans tested with no Wr$^a$ positive subjects.*

*Human Blood Groups. G.Daniels

Healthscope
....and finally……

IMMEDIATE SPIN vs. COMPUTER CROSSMATCHING.

+ Pigtails are preserved. In cases of delayed Tx reaction the units would probably be discarded.
+ Avoids potentially fatal Tx reactions in cases of computer error or patient misidentification.
+ Rare antibodies will be picked up !!

- More time-consuming.
- More room needed in fridge for racks of samples and pigtails.
Thank you!

(And thanks to Jenny Condon for her hard work and helpful advice!)