

Group & Save Samples

Why one size does NOT fit all

An abstract background composed of various overlapping triangles and polygons in shades of blue and teal.

Presentation by: Nicola Main
Date: 24 September 2013

Disclaimer

- All of the information in this presentation is based on my own experience and knowledge.
- Other hospitals may have policies based on local risk assessments and requirements.
- CHS
 - 970 beds
 - 40000 Group & Saves
 - 10,000 units per year

Presentation

- Who works in a lab?
- What is a Group & Save?
- Why do you need a Pre-assessment Group & Save?
- What is a crossmatch?
- Why does the lab keep rejecting my samples?
- Why doesn't everyone do *exactly* the same thing?

Who works in a lab?

- Chief / Senior chief
 - Band 8a and above
- Senior Specialist Biomedical Scientist
 - Band 7
- Biomedical Scientists & Specialist BMS
 - Band 5 & 6.
- Pathology Support Worker (PSW) / Medical Laboratory Assistant (MLA) / Assistant Technical Officer (ATO) / Associate Practitioner (AP)
 - Band 1-4
- TP or SPOT
 - Band 6 or 7

What is a Group & Save

- Group & Save, Group & Screen, Type & Screen, Serum Hold, Screen & Hold, Group & Hold
- They are all the whole blood sample (taken into EDTA tube) which is hand written with 4 points of reference, from which blood may be cross-matched.

Why do you need a Group & Save at pre-assessment?

- Chance for blood to be taken in calm environment.
- Discussion regarding Transfusion (+/- consent) can take place.
- Allows lab to hold at least one group for the patient.
- Allows lab to identify any antibodies prior to surgery and sort out compatible blood or any further testing (as appropriate).

Who needs PAC Group & Save?

- Anyone who may need blood
 - Depends on procedure
- Anyone who may need a blood product
 - Underlying condition
 - Preventative measure (e.g. prophylactic anti-D)
- Once the at-risk groups have been identified they should ALWAYS have a G&S taken.

What does the lab worry about?

- Sample validity
- Antibody status
- Crossmatching units
- Available blood
- WBIT's

Sample timings

- BCSH Guidelines
 - If they have been pregnant or transfused in the last 3 months the sample is valid for 72 hours.
 - If not, sample is valid for 7 days.
 - If frozen, plasma can be used for 3 months.

Current Situation

- Current Blood Product User guide states:
 - “ Pre-operative Group & Save samples are used for antibody screen only, and a further group & save sample is required on admission if blood is required for theatre”.
- Has been in use at SRH for years.
- Applies even if sample taken in last 7 days.

Current Situation

- Processed in non-urgent manner.
- Group recorded in patient history.
- Antibody status recorded.

If negative

- Can use Electronic Issue

if positive:

- Investigate
- comment added to sample to request G&S on admission (or before).
- details written in diary in transfusion dept to order antigen negative units.

Crossmatch

- A cross-match :
refers to the testing that is performed prior to a blood transfusion in order to determine if the donor's blood is compatible with the blood of an intended recipient
- Need to know blood group & antibody status.

Blood Groups

- Blood Group
 - Automated with Barcodes
 - Bi-directional interface
 - If known, check against historical then file
- O,A,B,AB
- Rh Pos or Neg

Antibodies

“ So how long for the blood?”

“How long is a piece of string?”

- Can we identify the antibody? Or do we have to send the sample to Reference lab?
- What is the antibody? Is it common or rare?
- Do we have antigen negative blood in or do we have to order it from NHSBT?

Cross-match

- 2 types:
 - Electronic Issue (EI) or Electronic Cross-match (EXM)
 - Only used if patient has no antibodies.
 - Use a computer to perform a final check on group. Computer presumes unit compatible as no antibody
 - Must have 2 groups to use this system.
 - Blood is available in 3 minutes (time taken to print out labels and attach them to the bags).
 - Serological
 - Used if antibodies present or if grouping anomaly.
 - Add patients plasma to donor red cells & see if there's a reaction.
 - Still use the computer to check we aren't giving the wrong blood group, but we tell the computer that the unit is compatible.
 - Takes minimum of 40 mins for blood to be ready



Cross-match

- Only 40% of hospitals use E.
- All hospitals have Surgical Blood Order Schedule.
- So what your hospital requires depends on
 - The cross-matching technique employed
 - The nature of the procedure
 - Any underlying conditions
 - Any antibodies detected

Current Situation

- So
 - sample at PAC,
 - less than 7 days old,
 - no antibodies....
- Still need a sample on admission!

Current Situation

- Need more than one group on a patient
- one historical + a current

OR

- Two samples from current admission

Why do you need more than one group?

- WBIT
 - Wrong
 - Blood
 - In
 - Tube
- Get the blood group wrong = could kill the patient.

WBIT

- Detected WBIT is 1:2000
- At CHS we do 40,000 G&S
 - 20 of our samples are wrong.
- SHOT shows that for every WBIT which causes a problem, 100 others are caught as “near miss”.
- Is it the tip of the iceberg?

Blood Groups

ABO Blood Group	Rh(D) Type	Percentage of Population with this Group
<u>O +</u>	Pos	37%
<u>O -</u>	Neg	7%
Total Blood Type O		44%
<u>A +</u>	Pos	35%
<u>A -</u>	Neg	7%
Total Blood Type A		42%
<u>B +</u>	Pos	8%
<u>B -</u>	Neg	2%
Total Blood Type B		10%
<u>AB +</u>	Pos	3%
<u>AB -</u>	Neg	1%
Total Blood Type AB		4%
Total	Pos	83%
Total	Neg	17%

Causes of WBIT

- Pre-Labeling of tubes
 - Please, just don't.....
- Failure to identify the patient correctly
 - Admin error
 - Patient error
- Failure to label at the bedside
 - Not done when next to patient
 - Labelling multiple tubes
- Distraction / lack of concentration
 - Putting own DOB or even mobile number on specimen

Why is my sample rejected?

- Missing info / Incorrect info
- Not signed and dated
- Details obviously not from wristband / notes
 - Missing half a name!
- Old sample
- Can't read it / Crossing out
- Under filled / haemolysed / lipaemic
- If request card doesn't match tube
- Wrong sample or tube type
- 2 samples taken at same time

Why does the lab reject my samples?

1. Patient Safety
2. Patient Safety
3. Patient Safety
4. It's the law
5. It means I can sleep at night.....

BCSH Guidelines

- We follow what is required in the guidelines.
 - 2009 Administration of blood components
 - 2012 Guidelines for pre-transfusion compatibility procedures in blood transfusion laboratories
- 2007 NPSA Safer Practice Notice 'Standardising wristbands Improves Patient Safety'.
 - last name
 - first name
 - date of birth
 - NHSnumber (most hospital have own number too).

And if we don't?

Directive 2002/ 98/ EC+ Directive 2004/ 33/ EC+
Directive 2005/ 61/ EC+ Directive 2005/ 62/ EC =

- [The Blood Safety and Quality Regulations 2005
No. 50](#)

And if we don't?



Medicines & Healthcare Products Regulatory Agency

- Transfusion department shut down
- Hospital shut down
- Jail

Different practices

- Missing info / Incorrect info / Details obviously not from wristband / notes/ Can't read it / Crossing out
 - Some trusts allow alterations
 - Will have limit on extent
- Not signed and dated
 - *Should* not **must** in guidelines
- Old sample
 - True old or use of old request?
- Under filled / haemolysed / lipaemic
 - Depends on technique used in lab.

Different practices

- Guidelines can be interpreted differently
 - 3 months: is that 90 days or each calendar month?
- Must assess each situation and strike the balance between patient safety, the guidelines and the risk of not having what the patient needs when they need it.

Different practices

- Depends on
 - Size of hospital (& size of blood bank)
 - Location of hospital (Sunderland v Whitehaven)
 - Types of procedures (knee/ hip op v AAA repair)
 - Types of patients (underlying conditions)
 - Available processes (Serological v Ξ)
 - Historical events (How has it gone wrong in the past?)

Other impact of PAC on Transfusion

- What drugs is the patient on?
 - Stopped prior to procedure.
- What underlying conditions do they have
 - Haemophilia products
 - Prophylactic platelets
- Does the coag screen show any possible problems?
- Correction of any pre-op anaemia

Summary

- All labs follow guidelines and have to work within the law.
- May be differing local practice
- Need to balance patient safety with risk of not supplying blood.
- Two samples is needed to prevent WBIT
- Labelling is critical: get it wrong and we kill the patient.
- If patient has an antibody the process may be slower.

Thank You
Any questions?