

# HLA Matched Platelets

Presented by

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# What are HLA matched platelets?

Normal pack of platelets which have been selected for a specific patient by matching the platelet donor's HLA type to that of the patient

# Why might you need HLA matched platelets?

- HLA matched platelets are required when a patient has become refractory to normal, random donor platelets due to the presence of anti-HLA antibodies
- Refractoriness is simply described as ‘a post transfusion increment less than expected’. Commonly, an absolute increment of  $<10 \times 10^9/l$  is suspect for refractoriness

# Platelets & the HLA system

- HLA system is made up of 2 classes, I & II
- Platelets only express Class I antigens
- HLA matched platelets are matched for HLA-A and HLA-B
- Matched platelets are assigned a match grade:
  - A match has no mismatched antigens
  - B1 match has 1 mismatch
  - B2 match has 2 mismatches
  - etc.

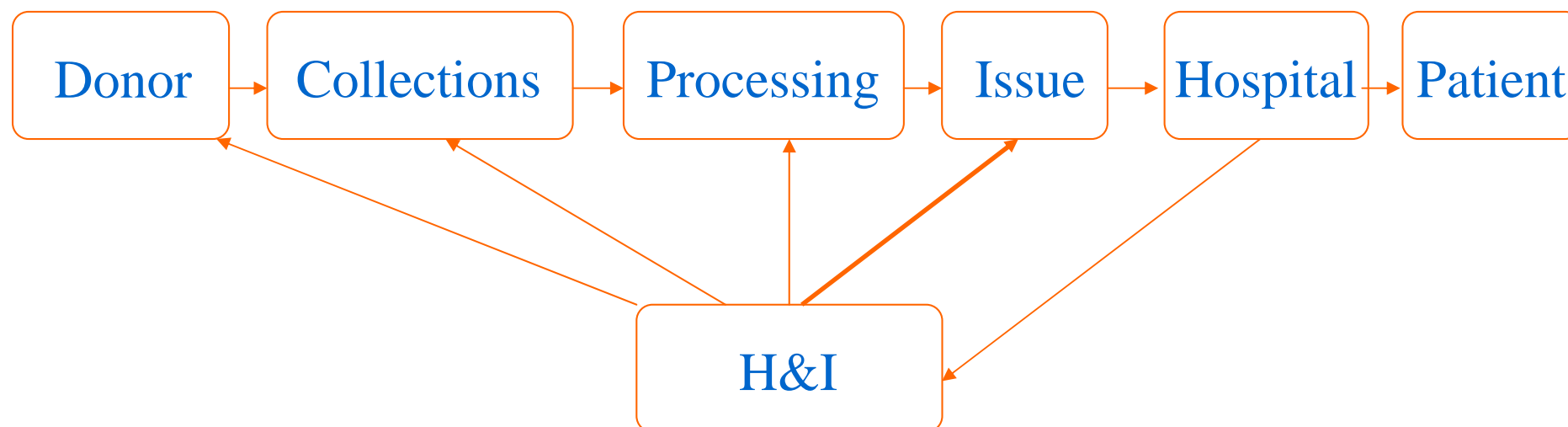
# Platelets & the HLA system

- Some HLA facts...
  - HLA-A\*02 is present in over 45% of platelet donors
  - HLA-B\*44 is present in over 30% of platelet donors
- Whereas
  - HLA-A\*23 is present in less than 4% of platelet donors
  - HLA-B\*13 is present in less than 5% of platelet donors
- This means the HLA type of the patient has a major bearing on the availability of HLA matched platelets

# Other requirements

- CMV Negative
  - UK population as a whole has a CMV prevalence rate of 50-60%
  - Requesting CMV negative units when not required further reduces available pool of packs to select from
- Resuspended in PAS
  - Platelets can often clump whilst being resuspended, resulting in the pack being discarded

# Where does H&I fit in the platelet journey?



# What we need and when

- Initial investigation
  - Samples: An EDTA sample & a clotted sample
  - Information: Patient data, previous transfusion history, special requirements
- Ongoing support
  - Some Warning! Ideally set up a standing order
  - Feedback: Use the increment form



# Increment data

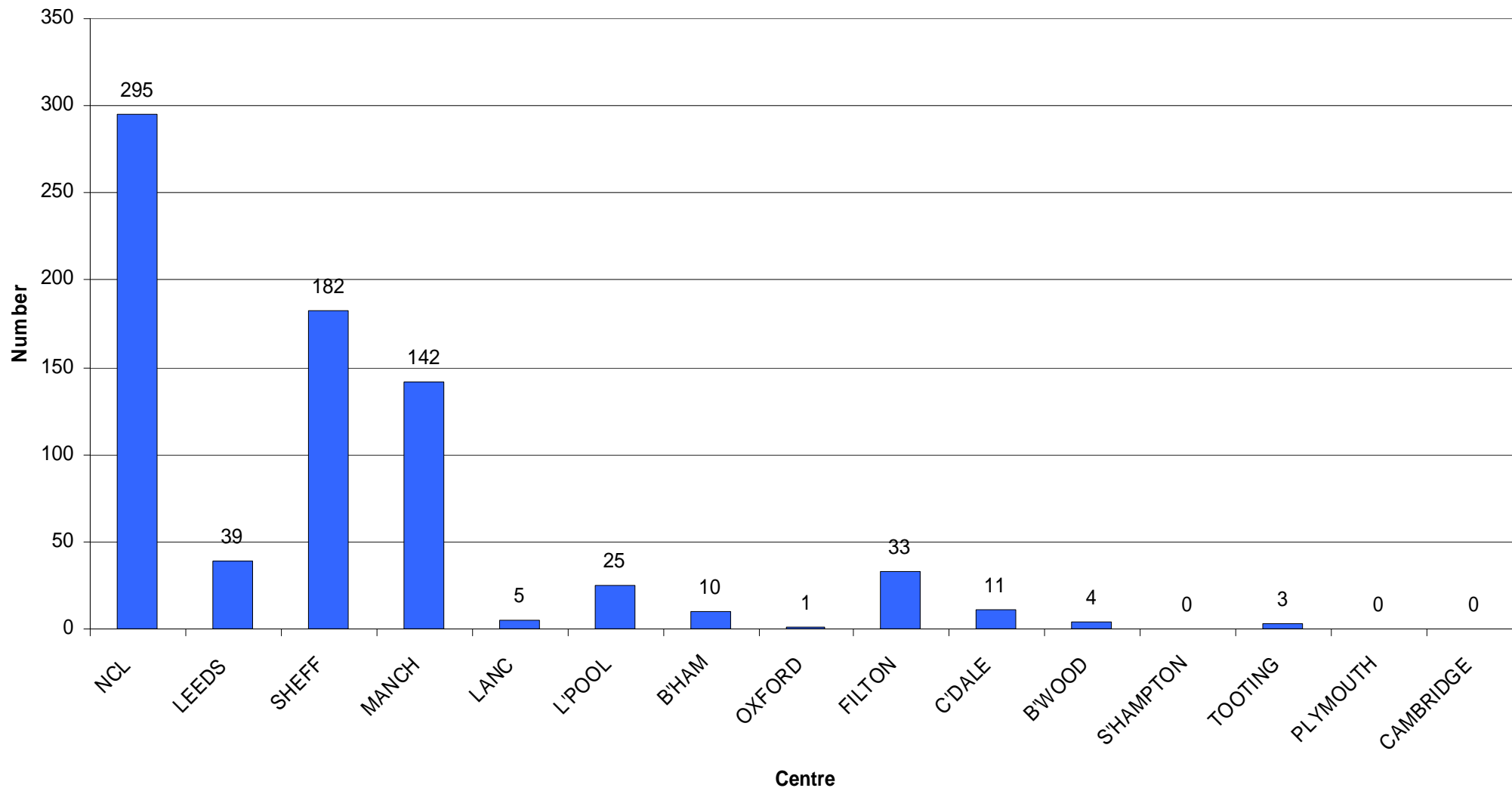
- What we use the data for

Pack	Mismatch grade	MM antigen	Increment
1	B1	A*32	57
2	A	None	70
3	B1	B*13	5
4	B1	B*51	45

- Increment data helps to identify 'acceptable' mismatches
- Not returning the increment data results in poorer patient support

# HLA matched platelet sources

Platelets allocated for issue by centre of origin 2011



# A difficult patient

- Patient AC HLA type A\*11 A\*26 B\*35 B\*55
  - Antibodies to all HLA other than self antigens
- No suitable platelets in Northern panel (NCL, Leeds, Sheff, Manc, L/pool, Lancs)
- Not incrementing with any B1 matches
- Found an A match in London
- Patient incremented (pre 2, post 46)

# A difficult patient

- AC needed platelets 3x week
- Needed more donors
  - Following a full search of every platelet donor available to NHSBT, only 3 other A matches were found, (in Leeds, Birmingham & Southampton)
- We managed to organise each donor to be bled on consecutive Mondays, thanks to the efforts of clinic staff at each site and the donors themselves

# A difficult patient

- No room for error
  - e.g. one donor had a scale & polish the day he was due to donate
    - Had to be deferred 24 hours in case of infection
- AC was supported in this way for over 4 months

## Other services from H&I

- HPA matched platelets
- HPA1a, 5b negative units for paediatric use
  - Also the investigation of fetal/neonatal alloimmune thrombocytopenia (NAIT), heparin induced thrombocytopenia (HIT), other drug related thrombocytopenias, autoimmune thrombocytopenia, thrombasthenias
- All of these services are coordinated from the H&I lab at Filton (Bristol)

# Any Questions?