



HLA Antibodies: A Case Study.

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The Case study

- ▶ Patient presents with a Platelet count of 12.
- ▶ ?Immune Thrombocytopenia (ITP)
- ▶ Patient moved to Cairns for treatment.
- ▶ Otherwise normal FBC picture.
- ▶ Patient does not respond to treatment

Case study

- ▶ Pancytopenia
- ▶ Bone marrow aspirate and trephine indicated
- ▶ Moved to LCCH for BMAT
- ▶ Diagnosed with Aplastic Anaemia (Severe)
- ▶ Patient will need a bone marrow transplant
- ▶ Transfusion dependent.



In the meantime...

- ▶ Platelets not meeting increment targets
- ▶ Receiving 2 bags of platelets daily
- ▶ Switched to single donor platelets
- ▶ Sample sent away for Human Leukocyte Antigen (HLA) antibody testing – Positive for HLA class I
- ▶ HLA platelets given.. When available – seem to increase numbers but hard to distinguish.

Platelet refractoriness

- ▶ Patient unable to achieve desired platelet increments after transfusion
- ▶ > 80% due to non-immune causes
- ▶ <20% due to immune processes



Human Leukocyte Antigens

- ▶ HLA are proteins in the cell's surface membrane that determine whether the cell is "self" or "non-self"
- ▶ HLA matched platelets can be supplied if the patient meets criteria set by Red Cross Australia
- ▶ Can be some issues with finding HLA matched platelets making it hard to determine the effectiveness of these platelets



Case outcomes

- ▶ As a new laboratory this was our first case that included multiple antibodies, drug induced antibodies, platelet induced red cell antibodies and HLA antibodies
- ▶ Multiple teams pulled together to ensure patient received the best possible outcome.
- ▶ Patient has had a successful bone marrow transplant so far. He is no longer transfusion dependent and passes through the hospital as an outpatient.

References

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- ▶ Nambiar, A., Duquesnoy, J., Adams, S., Zhao, Y., Oblitas, J., Leitman, S., Stroncek, D., Marincola, F. HLAMatchmaker-driven analysis of responses to HLA-typed platelet transfusions in alloimmunized thrombocytopenic patients. *Blood Journal* 2006 107 (1680-1687)
- ▶ Australian Red Cross Blood Service: Indications for supply of HLA compatible platelets <http://transfusion.com.au/node/707> [Cited 01/10/2016]