

Severe refractory thrombocytopenia post full matched female sibling donor hematopoietic stem cell transplant

Ping Rao, Benjamin Peton, Michael Carter, Monzr AlMalki, Ketevan Gendzekhadze

- Patient: 55-year-old male, high risk MDS, Hematopoietic Cell Transplantation (HCT)
 - Donor: 54-year-old 12/12 matched sister, ABO (A+/O+), CMV (D/R -/+)
 - Conditioning: Fludarabine, melphalan
 - Graft: PBSC
 - GvHD prophylaxis: Tacrolimus, Sirolimus
-
- Post-transplant complication: engraftment syndrome, HHV6 infection, rash, renal failure requiring hemodialysis, severe HLA antibody refractory thrombocytopenia.
 - Other post-transplant results: 30 Days complete donor engraftment
 - Patient outcome: Passed 35 days post-transplant due to multiple complications.
-
- HLA antibody history: Pre-transplant has weak antibodies. 7 days post-transplant HLA antibodies weaker, pattern similar to pre-transplant. Highly sensitized 3 weeks post-transplant (Fig 2). → patient sometimes could not get matched platelet

CONCLUSION

- Patient developed very strong HLA antibodies against most HLA Ags within 3 weeks of HCT. High possibility the HLA antibodies came from the donor memory recall due to pregnancy.
- Although the HLA antibodies did not affect the engraftment since donor is fully matched to the patient, transfusion support for the patient is significantly affected.
- It is important to test donor for HLA antibodies pre-transplant when adult female donor is selected. Avoiding the use of sensitized female donor is recommended even if donor is matched to the patient and donor has common HLA-A, B genotyping for easy transfusion support.

Figure 1a: HLA antibody pre-transplant by OneLambda LSA1

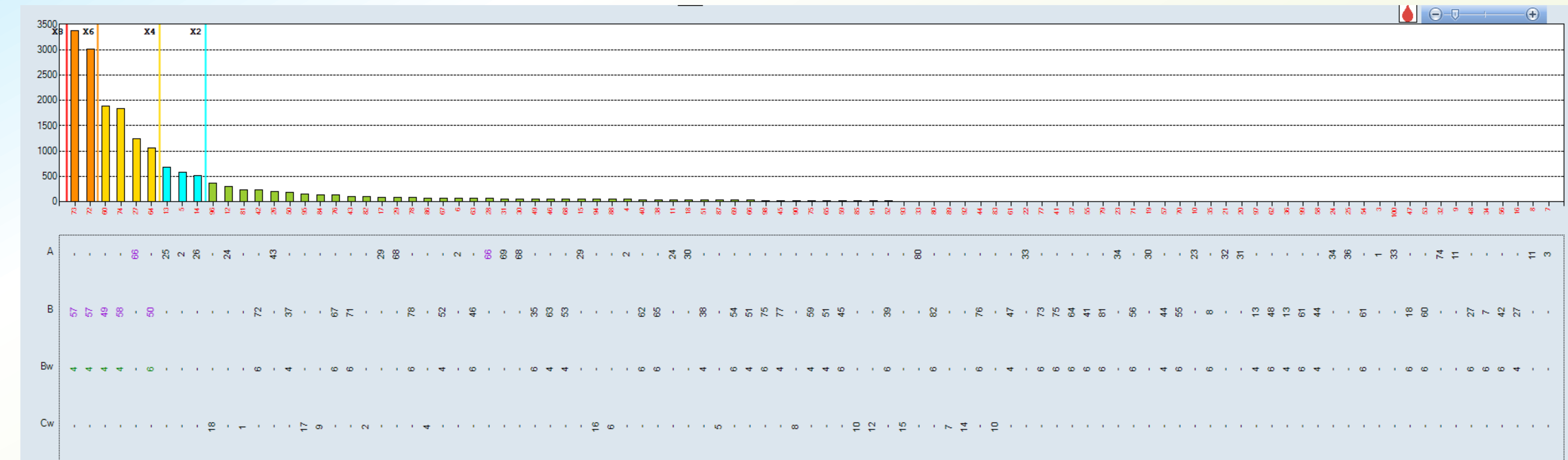


Figure 1b: HLA antibody 3 weeks post-transplant by OneLambda LSA1

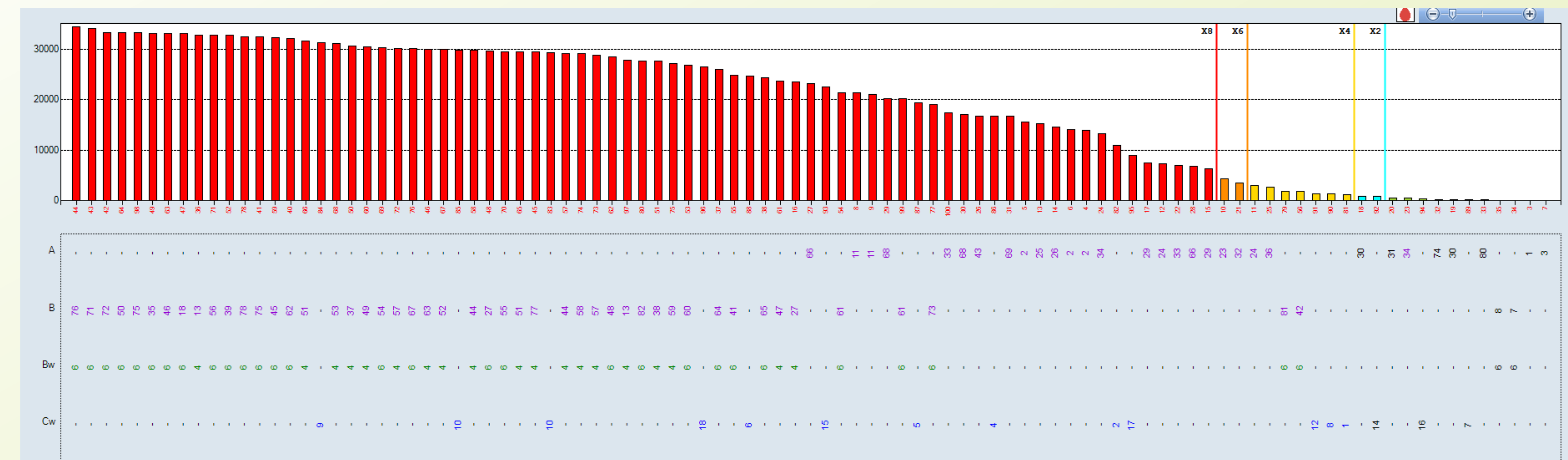


Figure 2: Patient and donor HLA high resolution typing

HLA-	A*	B*	C*	DRB1	DRB3/4/5*	DQA1*	DQB1*	DPA1*	DPB1*
Patient	01:01	08:01	07:01	04:04	DRB4*01:03	01:02	03:02	01:03	04:01
	03:01	07:02	07:02	15:01	DRB5*01:01	03:01	06:02	01:03	06:01
Donor	01:01	08:01	07:01	04:04	DRB4*01:03	01:02	03:02	01:03	04:01
	03:01	07:02	07:02	15:01	DRB5*01:01	03:01	06:02	01:03	06:01