ONLINE SUPPLEMENTARY CONTENT

Table SI - *Details of patients and HSCT with DSAs*

Gender	Diagnosis	Donor	Sorror	CR	Class I DSA MFI	Class II DSA MFI	XM	DS	DS	CD34+ ×10⁶/Kg	Neutrophil E	PLT E	Chimerism D+20	GF	PGF	A-GVHD	Follow up
Female	NHL	HAPLO	3	MAC	A2 2,263		Negative	DS	Rituximab (G-15) + IVIG (G-7) + 2 PLTs	2.39	15	64	100,00%	0	0	II	Alive
Female	AML	HAPLO	0	RIC		DR7 1,200	Negative	DS	Rituximab (G-15) + IVIG(G-7)	0.58	18	27	100,00%	0	0	0	Alive
Female	AML	HAPLO	3	MAC	CW6 1,667		Negative	DS	Rituximab (G-15) + IVIG (G-7)	3.82	17	25	100,00%	0	0	II	Alive
Male	AML	HAPLO	0	RIC	A2 1,109		Negative	Not Applied (DSA-Pre-CR)		2.49	18	27	100,00%	0	0	II	Alive

aGvHD: acute graft-versus-host disease; AML: acute myeloid leukemia; CR: conditioning regimen; DS: desensitization strategy; DSA: donor specific anti-HLA antibodies; E: engraftment; GF: graft failure; HAPLO: haploidentical donor; IVIG: intravenous immunoglobulin; MAC: myeloablative conditioning regimen; MFI: mean fluorescence intensity; NHL: non-hodgkin lymphoma; PGF poor graft function; PLT: platelet; RIC: reduced intensity conditioning regimen; XM: cross-match.

Table SII - *Desensitization strategies and clinical cases*

Case I	A 42-year-old female with T lymphoblastic NHL, candidate for an allogeneic HSCT from her haploidentical sister, showed DSAs against A2 antigen (MFI 2,263), and a negative FCXM. She underwent the planned desensitization treatment. Due to the persistence of DSAs (MFI 1,430), at the end of the conditioning regimen (TBF), she was treated with two infusions of selected platelets (on days −1 and 0), before the HSC infusion. Donor neutrophil engraftment was obtained on day +15, without antibody rebound. On day +20, the bone marrow aspirate confirmed a CR with complete donor chimerism. However, we observed delayed platelet engraftment (day +64 after HSCT). Four years after HSCT, the patient is alive, in complete remission, and in good clinical condition.
Case II	A 55-year-old female with AML, candidate for haploidentical HSCT, showed DSAs against class II antigen DR7, with an MFI of 1,200 and a negative FCXM. She underwent the desensitization treatment followed by bone marrow HSC infusion. The analysis of DSAs showed a slowly decreasing profile, with a final negativity on day 0. Donor engraftment was obtained on day +18 for neutrophils and on day +27 for platelets. Unfortunately, the patient showed hematological disease relapse 13 months after HSCT. Anti-HLA antibodies evaluation showed recurrence of class I anti-HLA antibodies, without DSAs. Three years after HSCT, the patient is alive, after different lines of therapy.
Case III	A 41-year-old female with a coexisting diagnosis of refractory AML and breast cancer, candidate for HSCT from her haploidentical brother, showed DSAs against Cw6, with an MFI of 1,667. She underwent the desensitization treatment showing complete antibody clearance. Donor engraftment was obtained on day +17 for a and on day +25 for platelets. On day +20, the bone marrow aspirate confirmed CR with complete donor chimerism, and on day +30, the patient was discharged. Currently, the patient is alive in good clinical condition, in CR for AML, with an excellent quality of life.

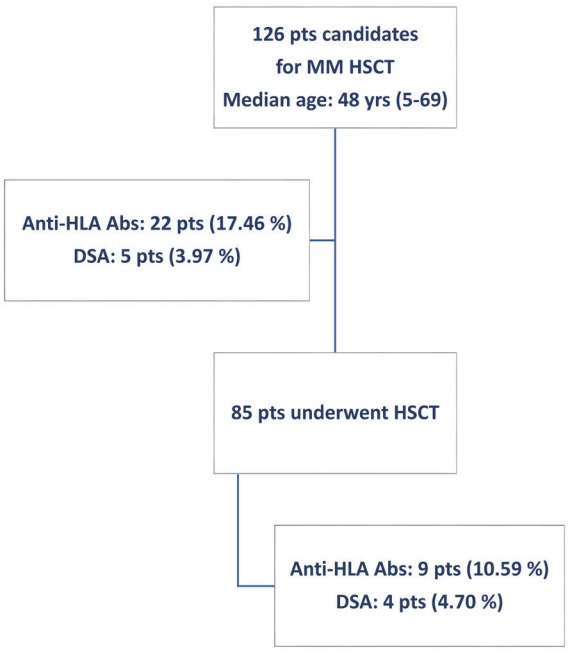

Figure S1 - Patients and transplant characteristics