Third Party Mesenchymal Stromal Cell Infusion in Kidney Transplant Recipient: 6-Month Safety Interim Analysis

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Session Time: 5:30pm-6:30pm

└ **Presentation Time:** 5:30pm-6:30pm

Location: Exhibit Hall E

Related Abstracts

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Back-ground

Mesenchymal stromal cell (MSC) have immunomodulating properties and could be used as immunosuppressive agents.

We report the 6-month safety results for the 5 first patients treated with MSC after kidney transplantation (KTx). Here, we address 3 specific safety issues:

– Immunization against MSC

– Engraftment syndrome defined as acute graft dysfunction not related to rejection

– Over-immunosuppression.

Patients and method

MSC production was carried out locally. MSC were not matched with kidney recipients' HLA. Included patients were non-immunized, first transplant recipient from deceased donors. MSC (1.5 – 3.0 x 106/kg) infusion was planned 3 to 5 days post KTx. Patients with cardiovascular instability post KTx were excluded. All patients were treated with Basiliximab induction, Tacrolimus, Mycophenolate Mofetil and Steroid. We prospectively screened for anti-HLA antibodies at month 1, 3 and 6. Informed consent was obtained from all participants. The local ethical committee approved the protocol.

Results

Collectively there were 23/50 and 29/50 HLA mismatches (MM) with kidney and MSC donor respectively, out of which 5 were shared MM.

Baseline characteristics

Recipient	Age at Tx (years)	63 ± 6
	Gender (M/F)	4/1
	BMI (kg/m^2)	27 ± 3
	Dialysis vintage (days)	373 ± 564
Kidney donor	Age (years)	51 ± 18
	Gender (M/F)	3/2
	BMI (kg/m^2)	26 ± 5
	DBD/DCD	4/1
Transplantation	CIT (min)	737 ± 219
	WIT (min)	46 ± 16
	HLA mismatches (n)	
	A (0/1/2)	0/5/0

	B (0/1/2)	1/4/0
	Cw (0/1/2)	1/3/1
	DR (0/1/2)	1/4/0
	DQ (0/1/2)	
MSC donor	HLA mismatches (n)	
	A (0/1/2)	1/2/2
	B (0/1/2)	1/3/1
	Cw (0/1/2)	0/4/1
	DR (0/1/2)	1/3/1
	DQ (0/1/2)	0/3/2

DB/CD: donor after brain /cardiac -death; C/WIT: cold/warm ischemic time
One patient developed de novo DSA, 2 patients anti-HLA antibodies against shared kidney/MSC MM and 1 patient developed 2 specific antibodies against MSC (MSCSA) at month 6. All antibodies were anti HLA class I except for 1.

We did not observe any “engraftment” syndrome.

Three patients experienced non-severe opportunistic infections: 1 CMV reactivation and 2 polyoma-BK virus viremia.

Conclusion

We did not observe any strong safety signal. We did however observe some degree of immunization in 3 patients: 2 developed antibodies against shared kidney/MSC donor HLA MM and 1 MSCSA.

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