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

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Presentation Time: 5:30pm-6:30pm
Location: Exhibit Hall E

Background

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 10^6/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.

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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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