




EBMT 2018 | Reducing GvHD with FMS-like receptor tyrosine kinase 3 ligand treatment of bone marrow donors

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Plasmacytoid dendritic cells (pDC) in donor grafts showed increased survival and reduced graft-versus-host disease (GvHD) in recipients of bone marrow (BM), but not in recipients receiving granulocyte-colony stimulating factor peripheral blood grafts.

Mojibade Hassan from Emory University, Atlanta, GA, presented results of a study examining FMS-like receptor tyrosine kinase 3 ligand (Flt3L) treated BM (F-BM) and pDC's effect on transplant outcomes in a murine transplant model at the 44th Annual Meeting of the European Society for Blood and Marrow Transplantation (EBMT), in Lisbon, Portugal.

Methods:

- Mice were treated with 300ug/kg of Flt3L on Days -1 and -4
- Cell counts of pDC and HSC in murine F-BM grafts were analyzed by flow cytometry

Key findings:

- Flt3L improved pDC content (3-fold) and HSC content (1.5-fold) in BM grafts
- In recipients of untreated BM with T-cells, transplantation of Flt3L treated BM with untreated T-cells improved survival from 45% to 75%
- Flt3L treated BM grafts with T-cells increased survival in a tumor model to 60% compared with survival of mice transplanted with untreated BM grafts, which had a survival of 30%

Hassan concluded her talk by stating that Flt3L treatment of bone marrow donors significantly increased survival and decreased GvHD. Additionally, F-BM grafts increased survival in a murine tumor model. To conclude, the speaker highlighted that "upregulation of adaptive immune pathways and downregulation of toll-like receptor cascades in Flt3L treated bone marrow grafts may play a role in attenuation of GvHD post transplant."

References

1. Hassan M. et al. FMS-like receptor tyrosine kinase 3 ligand treatment of bone marrow donors increase survival and GvT in allo-BMT recipients while reducing GvHD in murine transplant model. Abstract OS3-6. 44th Annual Meeting of the European Society for Blood and Marrow Transplantation (EBMT). 2018 Mar 19.

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