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First Haploidentical transplant in the world for HIV-positive Thalassaemia major with resultant prolonged viral suppression

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Case presentation

We present the case of a 13 year old girl, who was diagnosed with thalassemia major at the age of 8 months. Initially, she had been receiving blood transfusions every 28 days, which was later increased to every 18 days. Before transplant, she had received a total of 200 transfusions. She was classified as Lucarelli Class III with hepatosplenomegaly and had ferritin levels over 2000 ng/ml.

Allogenic stem cell transplant is a viable option in patients with thalassemia major. However, there was no sibling match for an allogenic stem cell transplant in this case. Hence, a search for unrelated match was initiated in 2012, which did not avail any suitable donors. Consequently, a haploidentical transplant from the half-matched mother was planned. At that time, CCR5 testing was not available at our institute. During the one year period of gathering the finances to perform the transplant, the patient was detected with HIV on routine screening. The patient was started on anti-retroviral therapy (ART) with abacavir and dolutegravir. However, viral load of HIV remained high.[1]

Since the patient was planned for haploidentical transplant, she underwent pre-conditioning with Bu-Cy. The transplant was performed on 29/01/13. Post-transplant GVHD prophylaxis was administered with cyclophosphamide/cyclosporine.

Details of transplants

Viral Load: Pre-transplant- 410000; Post Transplant-<47/cmm.

CD4- Pre-Transplant- 34.63; Post Transplant (6 months post-Transplant)-555.

Busulfan 16 mg per kg; Cyclophosphamide (200mg/kg) with ATG.

BM harvest- 245 ml; Cell Dose- 6 x 108 per kg.

Post Transplant Cyclophosphamide 40mg per kg was used on Day 3,4 with Cyclosporine.

During the second month after first transplant, she had graft rejection, which may be attributed to HAART.

She later underwent second peripheral blood stem cell haploidentical transplant on 18/02/2013. Fortunately, this time, she did not experience graft rejection. PBSCT Volume-225 ml with cell dose of 13.06 x10^8 per kg.

Since the second transplant, her HIV viral load has been undetectable. She was transfusion independent for 9 months after second haploidentical transplant, after which she developed anaemia. She was started on a novel therapy with thalidomide, wheatgrass, L-glutamine, and resveratrol based on our novel paper.[1] She responded well to this therapy and has been off transfusion for last 6 years.

At present, the patient is independent from transfusion and is intermittently taking ART medications. Her most recent viral load was undetectable. She is pursuing higher studies and plans to marry and lead a normal life.

Summary

This is first reported case of Thalassemia Major with HIV who has survived double Haploidentical transplant in the world. Remarkable finding was the prolonged suppression of HIV (probably cure) post transplant for close to 7 years.

Acknowledgments

None.

Conflicts of interest

Authors declare that there is no conflict of interest in our article.

Reference

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