

First report of maternal donor in haemopoietic stem cell transplantation for lymphoma associated with perinatal HIV

Dr Elvis Aduwa (Haematology ST5), Dr Caroline Foster (Consultant in Adolescent HIV and Infectious Diseases), Dr Sarah Fidler (Consultant in HIV and GUM), Dr Mark Bower (Consultant in HIV haemato-oncology), Dr Ed Kanfer (Consultant in Haematology)

Background:

Adolescents and young adults living with perinatally acquired HIV (AYAPaHIV) are at increased risk of malignancy, principally lymphoma. Whilst response to conventional therapy approaches their HIV negative peers, relapsing disease frequently requires haemopoietic stem cell transplantation (HSCT). We present the first reported case where a mother living with HIV donated haemopoietic stem cells to her perinatally infected son following an unsuccessful search for a matched unrelated donor (MUD).

Presentation:

A UK born male of black African origin diagnosed with PaHIV on screening aged 13 commenced antiretroviral therapy (ART) in 2007 age 15, nadir CD4 count 180 cells/ul. He achieved sustained virological suppression on Atripla, CD4 count >500 but in 2013 a biopsy of his cervical lymphadenopathy revealed stage IVA nodular sclerosis classical Hodgkin lymphoma.

Management:

Disease progression followed 6 cycles of initial chemotherapy and 3 cycles of salvage chemotherapy. He was then managed with 12 cycles of Brentuximab, an anti-CD30 toxin-conjugated monoclonal antibody, with a partial remission and following this he had high dose therapy with autologous stem cell support followed by radiotherapy to the right iliac blade. Unfortunately he relapsed and was given further salvage chemotherapy with a view to having a reduced intensity conditioning (RIC) allogeneic HSCT.

Maternal donor:

His mother was his only known relative and he had no matched unrelated donor. His mother was able to provide stem cells for a haploidentical HSCT. He and his mother were CMV positive. He was negative for hepatitis B virus (HBV), had been vaccinated and had post vaccination HBV surface antibody titres of >1000mIU/mL, his mother was co-infected with HBV and was suppressed on first line ART for HIV/HBV. Pre-HSCT he switched from Atripla to dolutegravir and emtricitabine/tenofovir alafenamide.

Transplant course:

Stem cells were given on 19/12/17(day 0) and his transplant course included treatment for neutropaenic fevers, CMV reactivation, BK virus haemorrhagic cystitis, candidaemia positive blood cultures and he had a 2 day intensive care admission for generalised tonic clonic seizures. He was given a stem cell top up on day +59 for immune related primary graft failure. Prior to stem cell top up he was plasma exchanged 3 times, given rituximab, intravenous immunoglobulin, anti-thymocyte globulin (ATG) and 2 Gy of total body irradiation. He was discharged on day +94 and has had 2 short admissions for management of haemorrhagic cystitis.

Outcome:

He is currently 13 months post HSCT and remains in remission. HIV viral suppression was maintained throughout with no evidence of HBV.

Conclusion

Whilst unrelated HIV+ donor and HIV+ recipient solid organ transplants are increasing and reflect an important improvement in equity of care for those living with HIV, we believe this is the first case where a mother living with HIV has donated to her perinatally infected offspring. Family members who share the same virus remain a donor option for AYAPaHIV where alternatives are lacking.