

## Nigeria's bone marrow registry offers new hope to patients

The launch of a national bone marrow registry in Africa's most populous nation will help black patients with blood cancers across the continent and worldwide. Tony Kirby reports.



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A graduate of Yale University, USA, Seun Adebisi originally hails from Nigeria. He was just 26 years old and fresh out of Yale when he discovered he had two different types of blood cancer: lymphoblastic lymphoma and stem cell leukaemia. Unable to find a bone marrow donor through US registries, he made appeals on YouTube and local radio, and even visited Nigeria to appeal to family members and law students there to be tested for a match. It was then that he realised that in developed countries such as the USA, black patients struggle to find donors. While 70% of white patients find a match, only 17% of black people in the USA do so, and only 8% of donors in USA registries are black. "My lucky break came when my doctor told me a Nigerian woman living in the USA had donated umbilical cord blood to a cord blood bank, and that it was a match", says Adebisi. He realised during his search, that the reality for patients in developing countries was far worse. Now in remission, he is repaying the generosity of his unknown saviour by initiating the launch of Nigeria's first bone marrow registry (BMRN).

Haemopoietic stem cell transplantation (HSCT), also known as bone marrow transplantation, can cure over 70 diseases, including several forms of leukaemia, lymphoma, and sickle cell anaemia. 70% of HSCTs occur between unrelated patients and donors, thus explaining the need for registries.

With around 400 distinct ethnic groups and over 154 million people in Nigeria, the contribution the country's gene pool could make to those of African descent requiring transplants is clear. Late in 2011, Nigeria became only the third African country to undertake a stem cell transplant, after South Africa and Tanzania. This development helped energise

Adebisi's idea to launch BMRN, and, in January, 2012, the Nigerian Government created a national task force to spearhead the construction of multiple stem cell transplantation centres. The next month, the Bone Marrow Registry, in Nigeria (BMRN) officially opened.

**"There is a huge imbalance between the haves and the have-nots in cancer care..."**

"Now that Nigeria has its own registry, Nigerian patients will be able to look within the country for bone marrow donors. They will also be able to search for possible donors in other countries through the international cooperative known as Bone Marrow Donors Worldwide", says Ifeoma Okoye, BMRN co-director/professor of Radiology and Chair of Radiology at the University of Nigeria Teaching Hospital/College of Medicine, Enugu, Nigeria. "This will have a dramatic impact on the number of stem cell transplants performed each year, both in Nigeria and abroad, improving the odds of survival for black patients with blood disorders around the world. Our registry currently boasts of a pool of only 300 donors, which means that we are barely scratching the tip of the iceberg. We need funds to expand in order to capture the full potential of the Nigerian population."

"We are very excited to be involved in a project that has the potential of saving lives of patients with debilitating and incurable haematological disorders", says Sunday Ocheni, associate professor of Haematology at the University of Nigeria Teaching Hospital/College of Medicine in Enugu, bone marrow transplantation physician, and BMRN

co-director. "Funds will also be needed to expand the registry and buy one or two apheresis machines required to harvest donors' peripheral blood stem cells."

The BMRN is only the first stage of Adebisi's vision. Along with his BMRN colleagues, he wants to also establish the country's first umbilical cord blood bank, to specifically help children requiring stem cell transplantation. "The relative naivety of cord blood stem cells reduces the likelihood of graft-versus-host disease in transplant recipients as compared with bone-marrow transplants. This gives a critical advantage to child patients, who are already greatly weakened by chemotherapy", says Adebisi, adding that a cord blood bank could be established for as little as US\$75,000. He is lobbying sponsors and philanthropists worldwide for funds, arguing that the project would save lives and be self-sustaining.

Stem cells harvested from cord blood units can serve a much wider population than stem cells harvested from either bone marrow or the peripheral blood stream. Current estimates suggest that a cord blood bank of 40,000 units would facilitate roughly the same number of HSCTs as a bone marrow registry of 4 million people, making the process roughly 100 times more efficient.

Adebisi concludes: "There is a huge imbalance between the haves and the have-nots in cancer care, and the dividing line between these two groups runs along race, income, and geography. We have an opportunity now to close that gap, not just for cancer and sickle cell patients in Nigeria, but for black patients with these conditions worldwide."

Tony Kirby