



**LETTER TO THE EDITOR**

## **Cord Blood Banking Services in Nigeria; the Earlier the Better**

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**Dear Editor,**

Blood banking services has existed in Nigeria for ages for the purposes of transfusion services. Though, there are successes achieved with the blood transfusion services, one of the major challenges is that the whole blood or blood components used cannot serve as sources of stem cells, whereas cord blood can. The unavailability of cord blood banks to provide such services creates a huge gap in the medical services thereby creating opportunities for medical tourism and capital flight.

Inherited Haemoglobin and blood disorders abound in Nigeria and have caused numerous and repeated blood transfusions among the patients. In medical care, Nigeria for example, inherited haemoglobin variant disorders include but not limited to HbS and HbC variant haemoglobin molecules as seen in Sick cell diseases; beta thalasemias; compound beta and HbE thalasemias; and some form of non-deletional alpha thalasemias. Affected individuals who are always supported by multiple regular blood transfusion may have some relief with availability of cord blood (1).

Cord blood from umbilical cord that is collected after delivery can be used as an alternative to bone marrow when transfused to haemoglobinopathy and other diseases sufferers for restoring immunological dysfunctions and for other transplantations. The cord blood stem cells, with available record, has shown that over 80 diseases can be cured after over 50,000 transplants that were successfully done across the globe (2).

There is no doubt that haematology related diseases across the globe are equally present in Nigeria. Such diseases which can be classified into: Cancers - Acute lymphocytic leukemia, Acute myelogenous leukemia, Chronic myelogenous leukemia, Myelodysplastic syndrome, Neuroblastoma, Hodgkin's disease,

Non-Hodgkin's lymphoma, and Burkitt's lymphoma- and Blood disorders - Sickle-cell anaemia, Fanconi's anaemia, Thalassemia, Evan's syndrome, congenital cytopenia, Aplastic anaemia, Diamond-Blackfan anaemia, and Amegakaryocytic thrombocytopenia- abound in Nigeria. Others are congenital metabolic disorders - Adrenoleukodystrophy, Gunther's disease, Gaucher's disease, Hurler's syndrome, Hunter's syndrome, Krabbe's disease, Sanfilippo's syndrome, and Tay-Sachs' disease; and finally Immunodeficiencies - Adenosine deaminase deficiency, Wiskott-Aldrich's syndrome, Duncan's disease, Ataxia-telangiectasia, DiGeorge's syndrome, Myelokathexis, Hypogammaglobulinemia and Severe Combined immunodeficiency. These diseases have been shown to have been treated with stem cells of cord blood origin (2). Haemoglobinopathies, especially sickle cell disease (SCD), is common in West Africa, Nigeria inclusive. The SCD traits have a prevalence rate of 25% and up to 30,000 children are born yearly with SCD (3).

Cord blood storage and supply should be encouraged in Nigeria, as it would be of great importance for both autologous for infants and allogeneic for others in need of the stem cells. Not minding the small quantity of blood involved and possible transmission of rare genetic disease with cord blood, it is better than bone marrow because of ease of collection, reduced samples rejection, processing time and risk of infection transmission.

Basically, the practice in Nigeria across the regions and tribes is discarding of umbilical cords by burial after delivery. This is out right wastage of good source of Haemopoietic Stem Cells (HSC) including CD<sup>34+</sup> and CD<sup>38+</sup> haematopoietic progenitor cells that could save lives more than expected. There is an urgent need to raise awareness to the public especially the reproductive ages on the need for saving the life saving products gotten from umbilical cords especially now that Muhibi *et al.* have discovered a safe alternative in resource-poor setting to store stem cells in a cryoprotective agents like glycerine at -20°C for up to 6 months (4). This reveals that cord blood banking is possible in Nigeria.

The effort of the National Blood Service Commission shall be incomplete without interest in Cord Blood Banking (CBB). All hands of various medical professionals, agencies and policy makers should as a matter of urgency be on deck to consider CBB as early as possible through policies and infrastructural development. The earlier the better as CBB would contribute to medical tourism and capital flight reduction and in turn strengthen Nigeria health system through good management of Haemoglobinopathy and other Diseases.

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1. *Journal article* Jeremiah ZA, Koate BB. Reference percentiles of hematological and

biochemical iron values of blood donors in Port Harcourt, Nigeria. *Hematology*. 2009; 14(6):366-70.

Jacob R B, Azia M G, Christian S.G, Robinson-Mbato L, Eze E.M. Prevalence of Lewis A, Rh-c, M and ABO/Rh-D Antigens in Bonny Kingdom Rivers State Nigeria, *Journal of Medical and Dental Science Research*, 2021; 8(6): 15-21.

2. *Book* The Institute of Medicine. A Population-based Policy and Systems Change Approach to Prevent and Control Hypertension. Washington, D.C.: The National Academies Press; 2010.
3. *Edited Book* Namey E, Guest G, Thairu L, Johnson L. Data reduction techniques for large qualitative data sets. In: Guest G, MacQueen KM, eds. Handbook for Team-Based Qualitative Research. Lanham, MD: AltaMira Press; 2008:137-161.
4. *Website Reference* Istituto Superiore di Sanità (ISS). Characteristics of COVID-19 patients dying in Italy. Istituto Superiore di Sanità. [https://www.epicentro.iss.it/en/coronavirus/bollettino/Report-COVID-2019\\_6\\_april\\_2020.pdf](https://www.epicentro.iss.it/en/coronavirus/bollettino/Report-COVID-2019_6_april_2020.pdf). Accessed April 7, 2020

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