Our Cure for Leukemia and Lymphoma: How Our Diversity Insures Our Survival and Leaves No Patient Behind

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Abstract

This year in hospitals across the nation tens of thousands of our loved ones will be diagnosed with some form of Leukaemia or Lymphoma or any number of blood born life-threatening illnesses and many of them will die hopelessly waiting for a viable matching donor that will never come. But what if I were to tell you that those days of waiting are to be over.

Keywords

Leukaemia or lymphoma; Blood stem cells; Bone marrow.

Background

What if I were to tell you that we are all curable; that regardless of our ethnic backgrounds or genetic makeups we are all curable and that the cure rests in our diversity.

The most sustainable cure of modern medicine is each other. Each other’s DNA- as we are discovering new things every day. Such as the potential for breast milk stem cells after our own research has been concluded then to be banked commercially.

However, right now we know that unrelated donors of umbilical cord blood stem cells have a higher rate of safety and efficacy than using bone marrow extracted from a blood relative commingled with that is very closely matched donor or cord blood banked for a blood relative.

If we were to collect the cord blood from umbilical cords thrown into hospital trash cans on a daily basis in San Diego County alone, by years end if even only 5% were viable, we would have enough to have compatible matches for each and every single patient diagnosed with every form of leukemia, lymphoma, non-Hodgkin’s lymphoma, Hodgkin’s lymphoma and over 241 life threatening blood borne illnesses to include sickle cell anaemia, krabbe disease and severe immune deficiency syndrome more than 2.5 X the need of the county’s patients.

California has such a broad and diverse population that we should be the first state to feasibly declare that in our state and our home towns no patient ever need go without a match. But this is not happening. It is not even discussed. Because there is just no money in it [1]. 90% of all cord blood stem cells are privately banked by private corporations selling biological insurance where they take your disease predisposed DNA, bank it and sell it right back to you; many of them promising cures that are simply impossible. For example several of the most prominently featured online, advertise cures for M.S. and Parkinson’s. Your bone marrow does not produce nerve cells nor does it produce brain cells. Your bone marrow merely produces ever single cell that floats around your bloodstream.

The National Bone Marrow Donor Program and its subsidiary be the Match Registry are non-profits that were established by the federal government in 1987 and to date have enabled 80,000 marrow and cord blood transplants and facilitated nearly 6200 transplants. But this number could and should be reached to match the number of patients in need of matching donors.

As expectant upper class and upper-middle class mothers are counselled relentlessly by the private cord blood market; mothers that cannot afford to bank privately are not even provided documents to be educated on the virtues of the public cord blood banking of their stem cells, let alone the intrinsic benefit to them as contributing to the development of social biological insurance.

We should have come a long way since 1987. The first stem cell transplant occurred in 1968 at the University of Minnesota. It was an analogous bone marrow transplant. Meaning the diseased marrow was replaced by bone marrow extracted from the patient.

There are three types of bone marrow transplants. The first being what I have just described. The second kind uses bone marrow extracted from a twin and the third and most successful of the three uses bone marrow extracted from a blood relative and has that commingled with that of a very closely matching stranger. A third party donor found through the registry.

Now the inherent problems with these procedures are all too common. Your body could reject the donor cells. You could relapse as the diseased cells are replaced with the same or similar genetic predispositions that have allowed the diseased cells to flourish in the first place, and you have to convince someone to let you drill into their bone marrow and extract a sample. Whereas blood extracted from an umbilical cord destined for the wastebasket can fill a bag that can serve multiple patients.

Once the cord is severed both ends are tied off and a needle is used to extract blood-rich with life giving stem cells to be cryogenically frozen until it is needed [2].

In fact cord blood can be screened for infectious diseases through the same screening processes that regular haemoglobin (common blood) at existing public blood banks goes through.

If we mainstream the public banking of cord blood for the benchmark that in our state and our home towns no patient ever need go without a match. But this is not happening. It is not even discussed. Because there is just no money in it [1]. 90% of
By focusing on the companies that have refined the safety and efficacy of their chemotherapy medications, we could revolutionize the way they do business and create incentives for them to back this campaign to educate, collect and bank cord blood on a level large enough to meet the needs of every patient.

We must revolutionize us as a species to ensure our survival, through the mainstreaming of public bio-banking. We must redefine philanthropy and redefine society as community and humanity as family as diversity is our cure.

References
2. Gragert L, Eapen M, Williams E (2014) This appendix has been provided by the authors to give readers additional information about their work. N Engl J Med 371: 339-348.