

Public cord blood banking may play an important role in the emergence of unrelated transplant in developing countries

In this issue of **TRANSFUSION**, Novelo-Garza and colleagues¹ describe the development of a public cord blood bank and transplantation program at the La Raza Medical Center in Mexico City. Although cord blood banking is well established in many countries, the development of cord blood banking in this setting is indeed noteworthy. The article shows that standards that have emerged for cord blood banking elsewhere can be adapted for use in Mexico and suggests that the development of public cord blood banking may provide a viable approach to support the emergence of unrelated transplantation programs in developing countries. Finally, the emergence of high-quality public cord blood banks in developing countries will likely contribute to the greater pool of available cell sources for the benefit of patients around the globe.

Public cord blood banks have become an integral part of the network of organizations that support unrelated cellular transplantation. World Marrow Donor Association (WMDA) data show that the use of cord blood in transplantation is rapidly expanding. At present, 47 cord blood banks from around the world report data to WMDA. In 2006, these banks provided 2086 cord blood units for unrelated transplantation, a growth of 16.5 percent over 2005 and an 85 percent increase over 2004. According to the WMDA, cord blood grafts represented 20 percent of all cell sources provided for unrelated transplantation in 2006. In the United States, the number of cord blood transplants will likely exceed the number of marrow transplants in 2008. At the same time, unrelated transplantation with adult-derived donations continues to grow both in the United States and worldwide.^{2,3} This suggests that cord blood has provided a valuable resource for patients who may not otherwise have found an acceptable adult donation, increasing access to this unrelated transplant therapy as a result.

Recently, unrelated transplantation has emerged as a therapeutic option in Mexico. This development has been supported by the establishment of an adult donor registry in Mexico. Although small, it has successfully provided adult donations for both domestic and international patients. The program of Novelo-Garza and colleagues, and the previously established Mexican Unrelated Cord Blood Bank (BACECU), suggests that the development of

the public cord blood banking may provide a means to significantly expand the development of unrelated transplant in certain settings.

The ability of the La Raza Medical Center to establish a successful cord blood bank is due in large part to the experience of others who pioneered the science of cord blood banking. Led by the groundbreaking work of Pablo Rubenstein and his colleagues at the New York Blood Center and the contribution by many others over the past 15 years, a strong foundation was available to the Mexican Medical Center. Importantly, the group of Novelo-Garza and colleagues has successfully adapted this work to the cultural, ethical, and legal setting in Mexico as the early success in cord blood transplant from units in the La Raza bank demonstrates.

One of the intriguing questions raised by the Mexican success is whether the emergence of cord blood transplantation provides the key for developing countries seeking to start or grow unrelated transplant programs. Certainly, Novelo-Garza and colleagues have demonstrated that even with a small number of cord blood units, some patients will find a suitably matched graft. The number of transplants performed compared to the size of the registry is very encouraging. A further study of Mexico's population to fully understand the diversity represented would help determine whether this rate of selection can be sustained, and although it may be that the favorable selection rate will change over time as more is understood about the impact of HLA on cord blood selection, the relatively small size of the adult donor registry in Mexico suggests that for other countries seeking to establish unrelated transplant programs, the investment of resources to grow cord blood inventory may significantly enhance the development of those programs.

It should also be noted that the Mexican experience relies on a partnership between the Mexican health care system and government-supported scientific institutions to fund this effort. Clearly, the need for governmental investment into cord blood inventory growth is important, especially in countries with newly developing banks where a rapid buildup of inventory is desirable. Once a critical mass of banked units is achieved, it is expected that reimbursement for units ordered from inventory will allow a bank to replace and grow inventory at a self-sustaining rate, reducing or eliminating the need for governmental support in the future.

Finally, there is a broader context in which to view the development of a successful cord blood bank in Mexico. Cellular transplant has a rich history of cooperative relationships across national boundaries. The establishment of the Bone Marrow Donors Worldwide and WMDA organizations under the leadership of Jon van Rood of the Leiden University Medical Center and others was based on the realization that cooperation among registries around the world would benefit patients by greatly expanding the pool of potential cell sources available beyond what would be available in any one registry. Today, 39 percent of all stem cell donations move across international boundaries.

This similar spirit of cooperation has been replicated within cord blood banking. Organizations such as The International NetCord Foundation and AsiaCord have emerged to promote worldwide access to the cord blood units found in their member institutions.

The emergence of cord blood banks in developing countries clearly will add to the diversity of publicly available cell sources, and all countries will benefit. By adopting internationally recognized standards as was done in the development of the La Raza bank, the worldwide

transplant community will be able to access an increasingly diverse source of high-quality grafts for their patients.

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