

Is preventive storage of cord blood justified and why is it not yet widely prescribed?

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Discussion around cord blood stem cells is not new in Greece. Sadly the discussion has been focused mainly in the model of storage that would be preferable (public banking vs family banking) and far less in the possible medical applications of cord blood itself. It's important to notice however, that the vast quantity of cord blood in today's Greece is neither stored publicly or in a family bank - rather it's discarded in the medical waste, depleting the country from a valuable and potentially life-saving resource. Behind this reality, lies the incomplete information of most obstetricians and gynecologists which in turn has resulted from the extreme claims provided by some family banks, in the one hand, and on the corporatist polemic developed by public banks, in the other hand. As a result, most obstetricians and gynecologists remain cautious, despite compelling data on the growing therapeutic use of cord blood, both in terms of treatable diseases and numbers of therapies¹.

Historically the breaking point for any new therapeutic agent's acceptance by most doctors is the commencement of its widespread application. In the case of cord blood however, there is a catch. Although the number of cord blood transplantations internationally has exceeded 30,000², they tend to concern mainly rare hematologic disease, whose frequency however increases with age. For every 100,000 United States citizens there are 0, 18 and 2 incidents of myeloma, leukemia and lymphoma re-

spectively for ages 0 to 10 years old (these numbers raise to 0, 6 and 7 for ages 10 to 20 years old), whilst it skyrockets to 16, 26 and 58 for ages 50 to 60 years old (with further raise to 38, 60 and 116 for ages 60 to 70 and even further to 67, 111 and 197 for ages 70 to 80)³. A similar trend is shown for most cancers in which cord blood transplantation could be useful. It is thus obvious that the therapeutic value of cord blood units wasted today may reflect in a worst prognosis for newborns, if they happen to fall ill, 30 to 40 years from now (the average age of privately stored cord blood units is currently between 5 to 10 years, so the likelihood of these units being used to treat cancer is still low). Exceptions include related allogeneic transplantations (most commonly between siblings) for non malignant hematologic diseases (hereditary or acquired) like sickle-cell anemia and thalassemia (majority of cord blood transplantations with family stored units in some parts of the world).

It's though imperative to convince everyone involved in cord blood collection, that this harmless procedure with apparently no immediate consequence to the baby and its mother, may become a life saving measure for that child later on. cord blood collection should become one of the many precautionary procedures obstetricians and gynecologists prescribe, such as ultrasound and maternal hormonal testing among others. After all, the odds of a child needing therapy with cord blood, especially for situ-

ations associated with prematurity or brain damage during delivery, such as cerebral palsy or nervous damage due to hypoxia, is not that different from many conditions potentially detected during pregnancy. According to the most recent related scientific review, the lifetime probability of a family stored cord blood unit to be used is around 1/200, which is significantly above the possibility of most medical conditions and syndromes investigated prenatally, which none of course would dare to consider unnecessary or overly.

It is clear that the medical world will be increasingly accepting cord blood collection as a standard precautionary procedure, as will be provided with accurate, recent and quality scientific data. To this end, the far reaching promises and sensationalist statements of some few family banks are not at all helpful. On the other hand, scientists involved in the business of promoting cord blood collection need to be insisting on its value, almost adopting a mission-

ary approach, faithful to the claim that the service they provide may cure an ever expanding list of serious disease, including some forms of cancer, and this is a great deal. This way only they will succeed to overcome the derogatory comments by some misinformed doctors, who may discredit what they do. The track to be covered by family banks is still long and will require dedication, seriousness and a long term commitment to providing quality scientific data to medical doctors. ■

References

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3. Nietfeld JJ, Pasquini MC, Logan BR, Verter F, Horowitz MM. Lifetime probabilities of hematopoietic stem cell transplantation in the U.S. *Biol Blood Marrow Transplant* 2008;14:316 - 22.