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Lifetime Probability of Needing a Stem Cell Transplant is Much Higher Than Previously Reported, Data Shows

Study Provides Needed Reference for Consumer Education on Stem Cell Odds of Use

BROOKEVILLE, Md.--([BUSINESS WIRE](#))--New data published in the March issue of *Biology of Blood and Marrow Transplantation* indicate the probability of an individual in the U.S. needing a stem cell transplant, using either one's own stem cells or those from a donor, is much higher than previously stated. This new research says that as many as 1 in 200 people will receive a stem cell transplant during their lifetime, based on current therapeutic use of hematopoietic (blood-forming) stem cells. These outcomes stand in stark contrast to previous estimates that suggest a much lower probability.

The study calculated the lifetime probability (age 0 – 70) that an individual in the U.S. will undergo a stem cell transplant, reporting that: 1 in 435 people will receive their own stem cells for treatment; 1 in 400 persons will receive someone else's stem cells; and the combined total number of stem cell transplants will be 1 in 217 persons.

The study calculated these probabilities based on the number of transplants performed in the U.S. between 2001 and 2003 where stem cells from one of three sources – cord blood, bone marrow or peripheral blood – were used to treat the diagnosed condition. They also looked at the number of patients diagnosed with transplantable diseases like blood disorders, immune diseases and certain cancers where stem cell treatment is considered an established therapy. Because the number of diagnosed patients in the study is much higher than the number of patients who received transplants, it is possible in the future that the number of transplants could increase further.

“Previous estimates have drastically underestimated the likelihood that an individual may need a transplant in his or her lifetime, because they only looked at the first 20 years of life,” said Frances Verter, Ph.D., co-author of the study and executive director of Parent's Guide to Cord Blood Foundation. “This study used a methodology that explored a longer time horizon, assuming a 70-year lifespan. What we learned is that even though the number of transplants is low in childhood, the numbers increase rapidly during the adult years.”

Historically, stem cells from bone marrow and peripheral blood have been used for more than 40 years to treat disease. During the last 20 years, cord blood stem cells have increasingly been used as a preferred source of stem cells in transplant medicine and have demonstrated significant benefits.

When compared to other stem cell sources, those found in cord blood don't

require as close of a match between donor and recipient. Researchers have shown that patients who received a cord blood transplant have a decreased incidence of graft-versus-host disease, a transplant complication which can be fatal. Despite its proven therapeutic value, cord blood from approximately 95 percent of births across the nation today is still discarded as medical waste – largely due to lack of awareness of the importance of cord blood banking.

“In some cases, healthcare providers have not recommended cord blood banking because they believe that the odds of using cord blood stem cells are low,” said Verter. “The mission of the Parent's Guide to Cord Blood Foundation is to make more expectant parents aware of the value of cord blood banking, so that saving it becomes a routine practice at birth. This study suggests that we need to re-evaluate the information we're sharing with expectant parents so that they have a better understanding of how these stem cells might be used now and in the future.”

Expectant parents have two options for preserving their newborn's cord blood stem cells. They can bank them for a fee in a family (or private) bank for use by the child or a genetically-related family member, or they can donate them for free to a public bank that will make them available to unrelated patients in need of a transplant. Through the U.S. Department of Health and Human Services (DHHS), the federal government funds a national program of banking cord blood donations; however, Congress has not continued its appropriations, which may jeopardize the ability for the public inventory to grow.

Given the increasing need for access to viable stem cells and the continuing advances in stem cell technology, a larger supply of both publicly and privately preserved cord blood would give more people access to emerging stem cell therapies, for indications such as juvenile diabetes, heart disease and brain injury.

“It is very important that medical societies consider this new data for their opinions on cord blood banking” said J.J. Nietfeld, Ph.D., lead author of the study and associate professor/senior scientist in the Department of Pathology of the University Medical Center in Utrecht, Netherlands. “Parents should be able to trust that the advice they receive from their physicians on whether to preserve or donate cord blood is based on the most up-to-date scientific literature.”

Study Methodology

The authors of the study relied on two U.S. national databases that are maintained to serve the public. One is the annual rates of disease diagnoses obtained from the Surveillance, Epidemiology and End Results (SEER) Program of the U.S. National Cancer Center. The other is the annual rates of stem cell transplantation obtained from the Center for International Blood and Marrow Transplant Research (CIBMTR).

About Parent's Guide to Cord Blood Foundation

The mission of the Parent's Guide to Cord Blood (PGCB) Foundation is to provide parents with impartial education about cord blood medical research and cord blood storage options, as well as to conduct and publish statistical analyses on medical research or policy developments which could expand the likelihood of cord blood usage. The PGCB Foundation is a 501 (c)(3) organization supported by donations from individuals and organizations that support the Foundation's mission (EIN 20-8939848).

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