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Cord blood research offers hope

Umbilical cord blood could play larger role in fight against leukemia.

By **Jeremiah Oetting** [3] November 30, 2009 (3 years ago)

Recent findings at the University of Minnesota may give new hope to patients battling leukemia, but donating to the cause is easier said than done.

In the November issue of *Blood*, Dr. John Wagner and Dr. Michael Verneris from the University's Masonic Cancer Center presented findings indicating that patients treated with two units of umbilical cord blood were less likely to relapse than those treated with only one. Cord blood, a source of stem cells, can be donated after birth and has no harmful effects on the child or mother, according to the National Marrow Donor Program. Each donation provides one unit of cord blood.

Stem cell transplants are performed using either bone marrow or cord blood. Combined with chemotherapy and radiation therapy, the transplants help replace cancerous cells with new, healthy cells.

"The small amount of blood in the umbilical cord is good for little kids, but it's not so good for adolescents, or college-aged or older adults," Verneris said.

He said that by doubling the amount of cord blood, the cell counts are high enough for use with adults.

"We've done this now on probably about 400 people, and it's taken off," Verneris said. "People are now using double umbilical cord blood transplant all over the world."

The reduction in relapse was almost twofold, Verneris said.

According to Verneris, cord blood offers many advantages over bone marrow transplants.

Most marrow donors in the United States registry are Caucasian. Finding a match for a marrow transplant requires people with extremely close genetics, which is not the case with cord blood, Verneris said. Cord blood allows minorities and genetically diverse people to have more options.

He also said the process of bone marrow transplantation can take up to four months, while a cord blood transplant can take as little as a week.

"The use of cord blood has increased dramatically in the last five to 10 years, in large part because of the double cord [treatment] that we created here," Verneris said.

While use of the treatment has increased, the difficulty in acquiring donations may cause problems in the future.

"All my kids' cord bloods went into the garbage," Verneris said. "I didn't save any of them, only because public donation wasn't available."

According to the NMDP, there are only 22 states in the country that have the capabilities to support donation. Minnesota is not one of them.

“It wasn’t always the case where people in Minnesota could not donate directly to a Minnesota bank,” said Kathy Welte, director of the NMDP’s Center for Cord Blood. “The American Red Cross offered collections at several hospitals.”

Welte said people from Minnesota who want to donate are now referred to Cyrobanks International, a cord blood storage facility located in Florida.

“It’s almost totally about money,” said Mike Boo, chief strategy officer at the NMDP. “It costs about \$1,500 to collect, process and store a cord blood unit for public use.”

Boo said the current demand for cord blood is too low to support a functional business model for collection facilities in every state.

“If we can solve for the money side of things, then I think it’s important to increase the opportunity to collect,” he said.

Boo said the NMDP is actively lobbying Congress to increase financial support and create a “steady state inventory.”

“There are over 4 million births in the United States every year,” he said. “We could rapidly get to an ideal cord blood bank.”

While national support may not be fully developed, the Center for Cord Blood is partnered with international banks as well as local, Welte said.

Verneris maintains that the research being done at the University on cord blood is an important step in the fight against cancer.

“Before cord blood was available for everybody, which it is now, I had many patients who I had to say ‘I’m sorry, there’s no bone marrow donor,’ ” he said. “It’s pretty tough to say that to a 12-year-old.”

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