The future lies in alternative cancer therapies

Heather Salerno, For The Journal News 12 p.m. EDT May 14, 2015

Every October, Dr. Mitchell Cairo is reminded why he continues to battle childhood cancer.

That's when he gets an email from a former patient, who was diagnosed with acute myeloid leukemia at 16. It's an annual thank-you note, one that marks the anniversary of a life-saving bone marrow transplant that Cairo performed in 1987. Today, that patient is happily married, with three teenagers of his own.

"He's grateful every day that he's here," Cairo says. "It always makes me feel great when I get that email."

Over the past 30 years, Cairo has cared for thousands with cancer and blood disorders.

Now, the Armonk resident is chief of pediatric hematology/oncology and stem cell transplantation at New York Medical College in Valhalla and head of the Children's and Adolescent Blood Disease and Cancer Center at Maria Fareri Children's Hospital at Westchester Medical Center.

A prominent specialist in stem cell biology, molecular oncology and experimental immunology, Cairo has dedicated his career to cutting-edge research and advancing breakthrough treatments.

Cairo acknowledges that chemotherapy is standard protocol in most cancer cases. It's been particularly effective in children: Pediatric cancers tend to respond better to chemo, and overall, youngsters tolerate chemo drugs better than adults.

Even so, Cairo insists that the future lies in alternative therapies with a less toxic effect on the body.

"We're using medications that, in 100 years or so, will be looked upon like blood letting in the Middle Ages," he says. "It works quite well and we have used it to patients' advantage over the last 60 years. However, I don't think a lot of people believe it's the end-all for how we should go about treating cancer."

One promising strategy Cairo is investigating is targeted cellular immunotherapy, where doctors genetically rearrange immune cells to attack and kill specific cancer cells. Another is a form of regenerative therapy using stem cells, from sources such as cord blood. (Cord blood – found in the placenta and umbilical cord of newborns – is rich in early-forming stem cells that can assist the body in repairing damaged cells and tissue.)

For Cairo, what's exciting about these therapies – targeted cell therapy, in particular – is that they are more organic ways of combating cancer.

"It seems logical if we're trying to incorporate a more natural approach in the long term, that's going to be better for the patient and have the least amount of side effects," he says.

Finding new ways to battle cancer

At both the medical center and college, Cairo oversees about two-dozen colleagues charged with researching new ways to treat these lethal diseases. Under his direction, the hospital will also soon open the Cell and Tissue Engineering Laboratory (CTEL), a 7,800-square-foot facility that can

manufacture a variety of therapeutic cells to be used in transplants, clinical trials and new drug applications. Cairo anticipates that at least 100 patients will receive cells made at CTEL in the next year.

At the same time, he's responsible for every child in WMC's pediatric cancer program. So unlike many experts in the field, Cairo wears two hats: clinical researcher and personal physician. He's convinced that the combination makes him a better doctor, allowing him to treat each patient with a more personalized approach.

"There's only one philosophy," he says. "If this was my child, what would I want done?"

Before joining Westchester Medical Center and NYMC in 2011, Cairo held posts at the University of California, Irvine Medical Center; Georgetown University Medical Center; and Columbia University. Since receiving his medical degree from the University of California at San Francisco, he's been amazed by the dramatic improvement in survival rates for childhood cancer. In 1975, only about half of children diagnosed before age 20 lived for at least five years. Today, according to the National Cancer Institute, that figure has risen to more than 80 percent.

"This is a radical change," Cairo says. "Now instead of going to 4 out of 5 funerals, I go to 1 out of 5."

He's able to go to his patients' weddings, too. Back in the 1980s, he diagnosed a 15-year-old with Hodgkin's lymphoma, just six months after she'd lost her mother to cancer. To put her mind at ease, he told the girl that he'd cure her – if she promised to dance with him at her wedding.

They never discussed that promise again, but years later, he received a wedding invitation and flew to California to attend. Sure enough, during the reception, he was called out onto the dance floor.

"I was crying, and everyone else was crying when they heard the story," Cairo recalls.

After all, he adds, "Once you've taken care of these patients, you develop a lifelong bond."