

THE WALL STREET JOURNAL.

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HEART BEAT

Childhood Cancer Survivors Face New Threats as Adults

By **DAWN FALLIK**

Updated July 28, 2009 3:40 p.m. ET

Jamie Deibel was 12 years old when she was diagnosed with leukemia. During her two years of treatment, she took seven pills a day, except on Thursdays. That was her 21-pill night, each swallowed while watching the television show “Survivor.”

Five years after being cured of cancer, the junior nursing major at Eastern Kentucky University, is undergoing a new round of tests—this time for heart disease. The worry is that the chemotherapy that fended off her leukemia may have taken a hidden toll on her heart.

Ms. Deibel is one of an growing number of pediatric-cancer survivors who won their battles thanks to treatment advances. Now, some of these survivors are finding that the same treatments that saved their lives could come back to haunt them in new ways in their 20s and 30s. Because the onset of heart problems can come a decade or more after the last round of chemotherapy, patients and doctors alike are often caught by surprise.

“Many [cancer] survivors don’t have a clue” about the long-term effects of cancer treatments, says Paul Nathan, an oncologist at the Hospital for Sick Children in Toronto. “Many of them were treated as young children and have no



Leukemia survivor Jamie Deibel, a Kentucky college junior, wonders if her chemotherapy weakened her heart.
CARL KIILSGAARD FOR THE WALL STREET JOURNAL

recollection of what drugs they had or what they should be watching for.”

The biggest risk is believed to come from a class of drugs called anthracyclines, one of oncology’s workhorse chemotherapies that is effective against leukemia and a wide range of other cancers. The drugs’ toxic effect on the heart is well-established in adults. That they have similar effects in children is now becoming increasingly understood as these patients reach adulthood. Radiation treatments also come with risk of long-term side effects, especially when given in combination with anthracyclines.

According to the National Cancer Institute, some 10,400 U.S. children under the age of 15 are diagnosed with cancer each year. About 80% of them survive beyond five years and are considered cured. Twenty years ago, by contrast, about 58% of children survived cancer.

Researchers estimate that 10% of patients treated with anthracyclines eventually develop cardiomyopathy, a progressive weakening of the heart muscle that can lead to congestive heart failure. Most of these patients exhibit treatable symptoms, including exhaustion and shortness of breath. But in rare cases, the first manifestation of cardiomyopathy is an arrhythmia causing sudden death.

Among female survivors, cardiac dysfunction can first become apparent during pregnancy. Medical experts say women who received radiation or anthracyclines should be evaluated by a cardiologist before or during early pregnancy.

Doctors say anyone treated with an anthracycline as a child should get regular diagnostic tests for heart problems every one to five years, depending on the dose they received. But many patients don't recall what drugs they were on, never mind how much they got or for how long.

Even though she received treatment only five years ago, Ms. Deibel says she couldn't list her medications off the top of her head. During a recent checkup, however, her oncologist recommended that she go for an echocardiogram—an ultrasound of the heart—because one of the drugs she had taken was the anthracycline doxorubicin.

“When the [cancer] diagnosis happens, they're talking to you about so many things, it's a blur,” says her mother, Taylor Deibel. “I don't remember a conversation where we sat down and said, ‘This is what could happen down the road.’ You're just trying to get through the day.”

Joseph Carver, a cardiologist who is also chief of staff at the Abramson Cancer Center of the University of Pennsylvania in Philadelphia, says he's seen a significant increase in the past five years in the number of pediatric cancer survivors who are turning up with heart disease in early adulthood. He attributes that to improved childhood cancer survival rates. Often, signs of trouble are subtle.

“Maybe they used to be able to jog four miles. But now they can only do two and they chalk it up to getting older or they're just tired,” Dr. Carver says.

Ashley King, 28, was 8 when she was diagnosed with Wilms' tumor, a kidney cancer. It spread to her spine and lungs. But after three years of radiation and chemotherapy treatments that included the anthracycline idarubicin, she was “clean.”

Then, three years after finishing treatment, Ms. King was diagnosed with cardiomyopathy. Initially doctors thought her condition was serious enough that she would need a heart transplant. But now she's on two heart medications and says she feels fine, other than tiring more easily than she used to. “I go see Dr. Carver every year and I get an EKG and an echocardiogram,” says Ms. King, who owns a clothing store in Lewes, Del.

Patients with cardiomyopathy are treated with beta blockers and ACE-inhibitors. But there are only general guidelines for treating childhood cancer survivors who have developed heart problems. Dr. Carver says more

research is needed to determine everything from an optimal schedule of preventive checkups to whether giving medicine before symptoms arise would prevent or delay harm to the heart.

Another issue is that when patients become adults they begin seeing new doctors who aren't familiar with the problems they face. "With a 90-percent cure rate, now you're having a lot of survivors hitting primary-care offices and family practices that may not have a great awareness of the issues that come with long-term pediatric-cancer survivors," Dr. Carver says.

CureSearch National Childhood Cancer Foundation (CureSearch.org), a private fund-raising and patient support group, recommends that anyone treated with anthracyclines get a heart checkup every year and an initial electrocardiogram two years after completion of therapy. Among other known risks, pediatric-cancer survivors have a greater-than-average chance of developing skin and other cancers.

When Ms. Deibel, the Kentucky college student, passed the five-year mark as a cancer survivor in January, she celebrated with friends at school. "We had a piñata shaped like a star," she says. "We put the word 'cancer' in the middle and I smacked it."

Now, as she prepares to undergo the echocardiogram and various post-cancer tests, she and her family aim to strike a balance between vigilance and victory over her illness.

"You have to approach it as it comes along," her mother says. "Because you can freak yourself out, and I don't want to live with that constant fear."

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