



Ruth and her husband Mitch.

## Equipping the Immune System Against Cancer

*Ruth Brockelbank, Patient  
Marcia Hernandez, Physician-researcher*

Ruth Brockelbank knew something was wrong when her Mercy OB/GYN, Dr. Anna Fraser, took her hand to go over some test results.

“I’ve been with Dr. Frasier for 20 years,” she says, “and I know her like family. When she took my hand, I knew something was up.”

As a longtime nurse, first as a school nurse in her home community of Nixa, MO (“that was my favorite job – I love taking care of the little ones”) and then as a registered nurse, the news that she had intrauterine cancer took her by surprise.

“My reaction was, what? I’m sick? Nurses don’t get sick, we take care of the sick,” she says. “My mother died when I was 13 of a brain tumor, so I knew cancer was a possibility for me. But it was still quite overwhelming to me. And we don’t always make very good patients, because we know too much.”

The cancer in her endometrium was aggressive and fast-moving, but a biopsy indicated a treatment path.

“It was a form of cancer called mismatch repair deficient, or MMR,” she says. “So that gave us an opportunity to try a different form of therapy.”

That was when Erin McCaig, Senior Clinical Research Nurse, supporting Marcia Hernandez, DO of Mercy Springfield called to ask whether Ruth be interested in participating in a clinical trial of a drug called Keytruda?

Like Ruth, Dr. Hernandez had worked with children before coming to Mercy. “I started out as a high school science teacher,” she says. “I wasn’t originally interested in oncology at all. I wanted to be a pediatrician.”

But during her fellowship, one of her mentors noticed that she not only had good surgical skills, but also a great rapport with cancer patients. “He sold me on it,” she says, “and the more I went on, the more fascinating it became to me.”

Dr. Hernandez is at the forefront of immunotherapy research—mobilizing the body’s own immune system to fight the cancer growing within it.

“Immunotherapy used to be a third line treatment,” she says. “But its efficacy and tolerability to the patient have moved it into the front lines against an increasing number of cancers, including breast cancer. What we’re looking at is its efficacy against Ruth’s form of cancer.”

Ruth agreed to participate in a study that combines Keytruda with traditional radiation, to determine whether this dual approach would be effective.

“What Keytruda does is lock a protein on the tumor,” says Dr. Hernandez. “Basically, our bodies have on-off functions for cell signaling. Cancer evades the immune response by putting out a protein with a blocking mechanism. Once that happens, the immune system doesn’t attack the cancer. Keytruda turns off that protein—it keeps the blocker from being produced.”

The drug enabled Ruth’s immune system to attack the cancer by first identifying, then killing, the cancer cells, but that wasn’t its only effect. Her treatment also caused hyperthyroidism and lymphedema, a swelling in her legs caused by fluid buildup.

She was also lucky, she says, in that her husband Mitch is an engineer.

“He’s very analytical, very problem-solving,” she says. “His response to my diagnosis was, okay, what does it mean? What do I need to do to help the process along? He did a lot of homework. Because my treatment causes lymphedema, or fluid-swelling, he really became an expert in treating that.”

Throughout the course of her time in the clinical trials, Ruth was glad to be at Mercy.

“I remember that when I was first diagnosed, Dr. Frasier told me that I wouldn’t be alone through this,” Ruth says. “She was right. All the team, they’re like extended family to me. Erin and Dr. Hernandez made me feel like more than a patient.”

“The kind of research that I’m doing allows me to be with my patients through every step,” says Dr. Hernandez. “It allows me to be involved at a level that other specialties don’t have. I do the surgery, I screen 100% of my patients to see if they’re candidates for clinical trials.”

The trials are ongoing, but Dr. Hernandez says they’ve already yielded reasons for optimism.

“We’re still waiting on the full results,” she says, “but in the feasibility trials, it looked very good.”

Now a year into remission, Ruth says, “God put me in the right place.”



Dr. Marcia Hernandez