



Issues

Office of Peace and Social Justice and the Integrity of Creation
Diocese of Gary

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Immigration

There is often intense, passionate debate over illegal immigration and its ramifications for the economy, public policy and our society. Immigration is a rock in the foundation of the United States. People from other countries made this country what it is. This story, reprinted with permission from the AARP Bulletin, is about the wonderful, life-changing gifts of a man who was once an illegal immigrant.

—Note: stem cells referred to in this article are not embryonic—

Brain Cancer

Could Adult Stem Cells Be the Cause—and the Cure?

By Barbara Basler

It was national news when Sen. Edward Kennedy of Massachusetts was diagnosed with brain cancer last May. Then, just weeks later, veteran political columnist Robert Novak also was found to have a malignant brain tumor. Suddenly, the public was awash in a flood of stories about this deadly form of cancer. The fresh focus on this disease comes at a critical time, as scientists explore a new theory that could unlock the mystery of brain cancer—and other cancers as well.

Paradoxically, adult stem cells may be both the cause of cancer and a cure for it.

That theory, barely discussed even five years ago, has captivated the country's leading researchers, including Alfredo Quiñones-Hinojosa, M.D., a 40-year-old one-time farm worker from Mexico who now heads the Brain Tumor Center at the Johns Hopkins Bayview Medical Center in Baltimore.

Quiñones is a researcher with a difference. Dressed in his green scrubs and fresh from the second of what will be three brain surgeries that day, Quiñones puts in punishing 16-hour shifts, working not just in the operating room but in a brain cancer research lab as well. "The surgery can be perfect, a beautiful work of art," he says. "But I still know that no matter what I do, these patients will eventually succumb to this disease. So how can I not look for a cure when I see my patients and their families and the suffering this cancer causes?"

It's that work and passion that last year led *Popular Science* to name Quiñones to its annual Brilliant Ten list of "the most creative, the most groundbreaking, the most brilliant young scientists in the country."

Quiñones is convinced that adult stem cells act as triggers for brain cancer. (Unlike the use of

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Quiñones' pursuit of a cure for brain cancer is marked by the same grit and determination that have shaped every facet of his life. This is a doctor, after all, whose life here began one cold, dark January night when, as a frightened 19-year-old, he climbed a chainlink fence along the border between Mexico and the United States.

embryonic stem cells, which requires the creation and destruction of an embryo, the use of adult stem cells found in children and adults is not politically controversial.)

Stem cells become new cells to maintain and repair tissue. Neural stem cells, for example, create new brain cells, while hematopoietic stem cells create new blood cells.

New studies suggest that cancer of the brain—along with cancer of the breast, prostate, colon, pancreas, lung and a host of other organs—grows from adult stem cells present in many tissues.

It's not clear how stem cells may cause cancer, but investigators theorize that rogue cancer stem cells have an uncanny ability to repair damage to their DNA and are therefore able to withstand standard radiation and chemotherapy treatments. Quiñones and his colleagues hope that by targeting these cells, they can destroy the cancer and prevent its return.

"We were once taught that brain cells die and can't be replaced," Quiñones says. "We now know that the mammalian brain has the ability to regenerate through adult neural stem cells. What we are exploring—and this is the great leap—is whether normal neural stem cells can lose their ability to self-regulate and become dangerous stem cells that create tumors.

"We are just beginning to understand this link between stem cells and cancer," he stresses. "We have to prove that brain cancer stem cells exist. But I think the potential here is real."

Close to 44,000 people will be diagnosed this year with tumors that originate in the brain; half of the tumors will be malignant. Another 170,000 patients will learn that cancers from other parts of their body have spread to their brain.

Brain cancer is one of the most intractable. In the last 30 years the median length of survival for patients with cancer that originates in the brain has increased by only four months—to 14.6 months.

"I think of this as the worst cancer, and if we can make progress with brain cancer I assure you that many other cancers will benefit, too," says Quiñones.

Along with his stem cell research, Quiñones runs a lab that is analyzing the medical records of thousands of brain cancer patients, looking for clues to more effective treatments. So far he's found that

patients with high glucose levels and patients who are clinically depressed have much worse outcomes than other patients.

"Now, when I meet a patient, I want to know his glucose level and whether he is clinically depressed, because we can treat those conditions and improve his chances for survival," he says.

Quiñones' pursuit of a cure for brain cancer is marked by the same grit and determination that have shaped every facet of his life. This is a doctor, after all, whose life here began one cold, dark January night when, as a frightened 19-year-old, he climbed a chainlink fence along the border between Mexico and the United States. The first time he clambered over the fence he was caught and sent back across the border. Just hours later he was back. This time he made it over and escaped into the night.

An undocumented immigrant, Quiñones spoke no English and had no job skills. He labored as a farm worker in California. "One day a friend said to me, 'You will always be a migrant worker,' and something inside me just snapped. I just couldn't accept that," he says.

Quiñones, who lived in a dilapidated trailer, took English lessons and enrolled at a community college while juggling jobs as a painter and welder. He won a scholarship to the University of California, Berkeley. From there, he went on to medical school at Harvard University. He became a citizen. Now, his office walls at Hopkins are covered in awards.

"This is a man who won't take no for an answer," says Henry Brem, M.D., chair of neurosurgery at Hopkins. "He's an inspired scientist, and an extraordinarily hard-working one."

Today, standard procedures for brain tumors, like Kennedy's, call for removing as much of the tumor as possible, followed by radiation and chemo. But excising all the cancer lacing surrounding tissue is difficult, and 90 percent of the tumors grow back. It may be, Quiñones says, that just a few cancer stem cells left behind after surgery renew the tumor.

"We have isolated cells from human brain tumor samples that in a petri dish act like brain cancer stem cells," Quiñones says. "We're still not sure that they actually behave that way in the brain, but there is some very good data to suggest they do."

The first evidence for brain cancer stem cells was reported in a study published in 2004. Scientists in

Canada isolated tumor cells with a genetic mutation they believed identified the cells as brain cancer stem cells. When they injected 100 of these cells into the brains of mice, the mice developed brain tumors. They also injected tens of thousands of other brain tumor cells without the mutation into mice—and all failed to produce tumors.

It appears that cancer stem cells may make up only a tiny portion of the brain tumor, which means that if they do trigger tumor growth, scientists may have been studying the wrong cells 95 percent of the time.

“Stem cells are a new paradigm,” says Quiñones. “Imagine a world where we know which cells are responsible for the cancer and we understand how they work—and how to turn them off. That’s the world I want. If it’s there, we have

to find it.”

Paul Watson of Baltimore, who lost his 19-year-old son, Aaron, to brain cancer last year, says this gifted surgeon with the warm, engaging manner “is a man of passion and great understanding. From the moment we met him, he was there for us, through three operations.”

Despite the operations and the best treatment available, Aaron died 18 months later, and Quiñones went to his young patient’s funeral.

“Dr. Quiñones held my hand and said that Aaron should not be dead,” Watson says. “He said we have to find a cure for this disease.”

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Addition to the Title of The Office of Peace and Social Justice

As depicted on the cover of this newsletter, “The Integrity of Creation” has been added to the office name. Care for God’s creation is one of the seven major themes of Catholic Social Teaching and has been a growing focus of Pope Benedict and of the U.S. Catholic Church. There are practical, real concerns in Northwest Indiana about the quality of our air and water, land use, as well as the responsibilities of industry and local and state government to promote the integrity of our part of creation and to support sustainable growth.

In his January 2008 World Day of Peace Message, among other important themes, Pope Benedict XVI emphasized the universal destination of the created order, the needs of future generations and the priority concern for the poor—

Respecting the environment does not mean considering material or animal nature more important than man. Rather, it means not selfishly considering nature to be at the complete disposal of our own interests, for future generations also have the right to reap its benefits and to exhibit towards nature the same responsible freedom that we claim for ourselves. Nor must we overlook the poor, who are excluded in many cases from the goods of creation destined for all.

We support campaigns to Live Sustainably and will promote the 3R’s—Reduce, Reuse, Recycle. Conservation is a key element of sustainable living. Here are a few simple ways to conserve energy—

- Follow the 10-10 Rule. Lowering thermostats in the winter by 10 percent (ex. 74° to 67°) for 8 hours can shave 10 percent off the heating bill. Try it at night and use extra blankets when sleeping.
- Run washing machines and dishwashers only when they are full. Use the cold water setting when possible. In addition, clean the clothes dryer’s lint filter after every load as a clean filter will reduce drying time.
- Keep the lights off in unoccupied rooms.
- Turn off kitchen and bathroom ventilating fans. If left on for an hour, these fans can extract all the heat from the house.
- During the winter, open drapes, blinds, and shades on windows facing the sun to warm the rooms. Keep windows clean so they can let in the maximum amount of light and heat. Also, at night cover the windows for better insulation.
- Make sure furniture is not blocking a heat register.

—Martin Luther King Day—

Monday, January 19, 2009

In his legendary “I Have a Dream” speech, civil rights activist Martin Luther King, Jr. described the issues facing our country. The following excerpts from King’s speech, delivered at our nation’s capitol, ring as true now as they did in 1963. He stated—

We have also come to this hallowed spot to remind America of the fierce urgency of Now. This is no time to engage in the luxury of cooling off or to take the tranquilizing drug of gradualism. Now is the time to make real the promises of democracy...Now is the time to make justice a reality for all of God's children.

...But there is something that I must say to my people, who stand on the warm threshold which leads into the palace of justice: In the process of gaining our rightful place, we must not be guilty of wrongful deeds. Let us not seek to satisfy our thirst for freedom by drinking from the cup of bitterness and hatred. We must forever conduct our struggle on the high plane of dignity and discipline. We must not allow our creative protest to degenerate into physical violence. Again and again, we must rise to the majestic heights of meeting physical force with soul force.

...And so even though we face the difficulties of today and tomorrow, I still have a dream. It is a dream deeply rooted in the American dream. I have a dream that one day this nation will rise up and live out the true meaning of its creed: We hold these truths to be self-evident, that all men are created equal. ♦

—Congratulations President Barack Obama—

Inauguration, Tuesday, January 20, 2009

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