



Transplant Surgery

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Balancing the Scale: Dr. R. Angelica Perez Gutierrez Works to Expand the Donor Pool and Improve the Quality of Life for Transplant Patients

Angelica Perez Gutierrez, MD, is a highly skilled surgeon who specializes in transplant surgery. Dr. Perez's areas of expertise include pancreatic islet transplant, liver transplant and kidney transplant.

Carpe diem

Growing up in Mexico, Dr. Perez was influenced by her father and mother in equal measure. Her father was a university professor who instilled in her the importance of a rigorous education. While her mother was a dedicated homemaker and philanthropically minded. There's little doubt being brought up in this environment invigorated her aspiration to pursue a career in surgery.

The journey to the operating room is not a feat for the faint of heart. Dr. Perez was up for the challenge to feed her incessant excitement in becoming a pioneer in the field of modern medicine.

"I always felt super excited about surgery," said Dr. Perez. Initially, she went back and forth between cardiothoracic and vascular surgery; however, in transplant she found her true calling. "What I like about transplant is that you have so many specialties together. I also like that it includes complex vascular surgery, and the significant impact on the quality of life of the patients is almost instant," she said.

For Dr. Perez, being in the right place at the right moment allowed her to meet fellow surgical leaders who enabled her to seize opportunities that would eventually launch her career toward where it is today. By way of serendipity, she met mentors like Chief of the Section of Transplant Surgery and Co-Director of the University of Chicago Medicine Transplant Institute John Fung, MD, who supported her and encouraged her move to the United States, where she would undoubtedly find a rich foundation for her impactful research to blossom.

Increasing case volumes

UChicago Medicine already has a long history of achievements in organ transplantation, from developing the technique for joining severed ends

of blood vessels together to performing the first living donor liver transplant in the U.S. In 2018, the transplant team made history again when they performed two back-to-back triple heart-liver-kidney transplants. Multiple organ transplants are rare and require equal parts medical excellence, surgical skill, complex coordination and creativity.

"I remember when I was a fellow, we were doing maybe two or three liver transplants per month. Now we're doing about one or two liver transplants per week. We have been growing every year. I think it's great that the transplant program has improved significantly, and I have had the opportunity to see this growth firsthand."

The program's continuous growth has provided Dr. Perez with the opportunity to lead a multitude of cases. Even if she isn't in service, she often situates herself in the OR by providing support or scrubbing in when needed. UChicago Medicine's transplant team encompasses an accomplished group of team players who work collaboratively to thoughtfully treat the needs of each patient. As the program continues to grow, the quality of life of transplant patients will, without question, improve.

Organ donation

Every year in the U.S., many people with liver failure expire waiting for a transplant, as the need for donor organs is far greater than the number of living donors obtainable for transplantation. "Here in Chicago, and more specifically here at the University of Chicago, we don't have so many living donors," said Dr. Perez. "We have been trying to increase awareness in living donation. Although we have been doing more living donor liver and kidney transplants, it's still a small number, which opens up more opportunities."

While the numbers of living donors may be lower, UChicago Medicine has been a pioneer in the field of living donor transplant surgery. In 1989, our surgical team performed the first successful living



donor liver transplant, where a parent gave part of her liver to her daughter. Despite the disparaging deficit, the miraculous functionality of the human body saves the lives of countless patients.

So how is living donor organ donation possible? Because of the liver's astounding capability to regenerate, living liver donors can give part of their healthy liver to a transplant patient. Living donors can also donate one of their two healthy kidneys to a patient, while still living a healthy life with just one. The other great news about this type of transplantation is how it affects the patients. Organs from living donors generally last longer with fewer complications and work better than those from deceased donors. As a group effort, Dr. Perez and her team are trying to push to have more organs from living donors, as successful outcomes will continue to ensue.

The dearth of donor organs combined with the upsurge in wait-listed patients has increased the usage of organs from expanded criteria donors and donors after circulatory death (DCD). Because of the poor outcomes these marginal organs have, there has been an increased concentration on vigorous preservation techniques, such as ex vivo machine perfusion to improve outcomes. "We do it as standard of care for the kidneys from DCD donors," said Dr. Perez.

In 2018, approximately 50 percent of wait-listed patients did not receive an organ transplant and either remained wait-listed, became unfit for transplant or died while being wait-listed. This morbid statistic emphasizes the urgent need to tackle organ shortage. Researchers, including Dr. Perez and Dr. Fung, are working on one solution

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Department of Surgery

to address this problem: improving suboptimal organs by using machine perfusion as a preservation technique.

Machine perfusion involves reconditioning and repairing organs by restoring the blood flow of the donor organ by connecting it to a pump that adds oxygen and other preservation agents. "I'm very happy to be a part of Dr. Fung's perfusion team," said Dr. Perez. "It makes me very excited. As time goes on, there is more and more data that shows promising results with livers after hypothermic perfusion."

UChicago Medicine's Transplant Institute is committed to bridging gaps and disparities within the healthcare system when it comes to transplantation. Time is of the essence for these patients. Our group of dedicated researchers works tirelessly to discover treatment options that can save and improve quality of life.

Better outcomes ahead

When Dr. Perez was a fellow, she started a database of kidney transplant patients to chart specific outcomes and factors that can be modified. "Specifically, in our population, which is different from the national demographics which also include extremely high-risk patients," she said. She collaborates with colleagues at UChicago Medicine to propel her research forward as she uncovers ways to improve outcomes.

She's also had the opportunity to work in the lab of world-renowned research professor Anita S. Chong, PhD, on the outcomes of perfusion-assisted grafts.

Dr. Perez is a highly skilled surgeon who is enthusiastic about every facet of transplant surgery. Although she joined the Department of Surgery little more than a year ago, her impactful research and exceptional patient care are deeply admired by her peers and mentors. "The first kidney transplant I did alone was with Yolanda Becker, MD; she was very supportive to my career," said Dr. Perez. "She knew just when it was the right moment to let go; she trusted me to get the job done."

Dr. Perez prizes the mentorship she's received here. Moreover, she deems it essential to be surrounded by leaders in the field who are invested in training and development. "I am also happy to work with the new members of the transplant team, like Professor of Surgery Rolf Barth, MD, who has been very supportive of me and my career development," she said.

Passion over matter

Transplant is a rigorous specialty, with intricate life-or-death scenarios. Patients are severely ill and the stakes are high. They are usually in an unfavorable state of vulnerability, and surgery could completely alter the condition of their lives. "It's tough; it has an emotional and physical

burden," said Dr. Perez. "I think you will succeed only if you really truly love it and you cannot imagine yourself doing anything else."

Things are often in flux, but Dr. Perez's outlook on the evolving state of transplant surgery is bright. The spark that ignites her drive is fueled by passion. "If you find passion in what you do then you're never going to be tired," she said. "Well, you will be tired, but then you won't care. I think that is the way you can survive; love what you do in all senses."



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