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Practical News, Trends, and Analysis

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Special Report: National Database for Paired Donation

A national database for paired donation could boost transplants, but time must be taken to create it right, experts caution in the report on page 10.

Transplant Tourism: Risky Business for Donors and Recipients

Numbers Small but Growing

By Lisa Jaffe Hubbell

Bill Cossen of South Carolina has been waiting for a kidney since 1996. He gets dialysis three times a week and at times feels sorry for himself. More than once, he has thought about going abroad to buy a kidney.

"You see it on the Internet, that people are selling organs in India and Pakistan," he said. "They say the donors make more on the sale than in a year or two of working. It gets you thinking."

What holds him back, though, are concerns about the risks. "What are you getting for the money? Do they screen the organs as well as they do here? Probably not."

While the literature on so-called transplant tourism is limited, the studies that are available have demonstrated risks to recipient and donor alike.

Given the small but growing number of Americans who have opted to go to countries like China, Columbia, the Philippines, and Pakistan to purchase a kidney, it is important for physicians who treat kidney transplant candidates to educate them on these risks.

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Transplant tourism makes up about 10% of global transplantation procedures, and purchase of kidneys in particular is increasing.

"I try not to be judgmental about it," said Gabriel Danovitch, MD, Medical Director of the Kidney and Pancreas Transplant Program at UCLA Medical Center. "But they ask if they should go. I don't encourage it. I try to lay out the facts as they are in a dispassionate way."

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Wearable Artificial Kidney Promising in Pilot Study

By Brande Victorian

A wearable artificial kidney was safe and efficacious in a pilot study, but more research is needed to confirm these findings, which were published in the *Lancet (2007;370:2005-2010)*.

The artificial kidney was created at the end of 2001 as a potential portable method for daily hemodialysis. "It's already been proven with daily dialysis—not with our device, but with simply dialyzing every day—that you can reduce the hospitalization rate by 70% and the drug consumption by 70%, so if we can achieve those things with our device that would be great," said second author of the study and designer of the device, Victor Gura, MD.

"Eventually we hope that we will also reduce mortality and cost, but those are long-term goals that are still way ahead of us," added Dr. Gura, who is also Associate Clinical Professor of Medicine at the David Geffen School of Medicine at UCLA, attending physician at Cedars-Sinai Medical Center, and Chief Medical and Scientific Officer of Xcorporeal Inc., the manufacturer of the wearable hemodialysis device.

Andrew Davenport, MD, of the Center for Nephrology at the Royal Free Hospital and University College Medical School in London, was the lead author.

Assessing Feasibility

Like a regular dialysis machine, the wearable hemodialysis device takes blood from a patient, passes it through a dialyzer, and then returns it back to the patient.

A filter allows the 1.5 to 2 liters of fluid that the patient carries to recirculate, thus eliminating the need to connect the device to a dialysate pump.

Eight patients with end-stage renal failure who had been on hemodialysis for an average of 17.9 years were fit with the device and treated for four to eight hours.

The UK Medicines and Healthcare Products Regulatory Agency (MHRA) required that two to four patients first be

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Looking at ways to increase the number of donated kidneys in the United States could also decrease the rate of patients who go abroad to buy a kidney.

No Hard Numbers

While there are no hard numbers available, best estimates are that hundreds of people have bought a kidney abroad, said Francis Delmonico, MD, Medical Director of the New England Organ Bank, Director of Medical Affairs for the Transplantation Society, a member of the World Health Organization Expert Advisory Panel on Transplantation, and Clinical Professor of Surgery at Harvard Medical School.

A report last summer from the Scientific Registry of Transplant Recipients estimated the number to be around 100-200 over several years.

Transplant tourism makes up about 10% of global transplantation procedures, according to the WHO, and purchase of kidneys in particular is increasing, Dr. Delmonico said.

Just last month, police uncovered an illegal kidney transplant racket in Gurgaon, India that reportedly involved 400-500 transplants over nine years and included donors who were tricked or forced into giving up a kidney.

"I try not to be judgmental about it. But they ask if they should go. I don't encourage it. I try to lay out the facts as they are in a dispassionate way.'—**Gabriel Danovitch, MD**

About 20 patients per month travel from Israel to the Philippines to buy a kidney, Dr. Delmonico said. Egypt is another hot spot for kidney purchase.

Some markets are more limited: Iran requires that you have an Iranian passport to take advantage of their regulated market for purchased kidneys. China and Pakistan recently agreed to forbid foreigners from coming to their countries to purchase a kidney transplant.

But other countries may fill the void. The Philippines wants to increase the number of transplant hospitals from five to eight, Dr. Delmonico said. Columbia may also perform more.

There are some legitimate transplants done abroad, though, Dr. Danovitch noted, making a distinction between going abroad for a transplant from a relative and buying a kidney from a stranger.

High Complication Rate

One of Dr. Danovitch's patients decided to go abroad for a kidney transplant because she didn't want her daughter's kidney—which was a match—due to the potential risk to her child. Instead, she traveled to China for a cadaver donation.

The patient insisted she didn't believe the transplanted kidney came from an executed prisoner, although that is the source of the bulk of such donations.

One of the medical risks of transplant tourism Dr. Danovitch explains to a patient considering it is the increased risk of having postoperative complications and of returning home sick because of a probable lower quality of postoperative care.

In one of the few studies on kidney transplant tourism, 10 patients were identified who went abroad for a kidney transplant over a four-year period and returned to the University of Minnesota for postoperative care *(Transplantation 2006;82: 1658-1661)*. Only three of the patients had told their physician about their plan ahead of time.

While nine of the patients were still alive when the article was written, there was a high rate of complications, said lead author Muna Canales, MD, MS, now Assistant Professor of Medicine at the University of Florida.

"I had one patient come back with a horrible outcome. His kidney was swollen and rejecting. They told him to see a physician as soon as he got back to the States. But rejection can't wait, and time is kidney." After months of immunosuppressant therapy, the patient had to go back on dialysis. "It's frustrating," Dr. Canales said.

While the study is small, it shows some of the potential risks, many of which are serious—four of the 10 patients studied had potentially life-threatening infections, and two others had less serious infections. One went right from the plane to the emergency room upon getting back to the United States.

In a similar study conducted in Canada, patients who went abroad for a transplant from an unknown donor had diminished overall survival and graft survival compared with those who received a kidney from a biologically- or emotionally-related donor in Canada *(Transplantation 2006;82: 1130-1135)*.

Other risks to share with patients are that their medical history from the transplant country may not follow them back home, the history may be incomplete, and there may be problems in translation.

There was little information given about the donor kidney in the notes that came back with the patient, Dr. Canales' study showed. Donors were characterized as "young and healthy" and "a good match."

Two patients had no available documentation at all. Information about induction therapy was available in only three cases and details about immunosuppression in five.

In addition, someone who is selling a kidney because of a dire financial need may leave out vital information or lie about something, Dr. Danovitch tells patients considering transplant tourism.

Risks to the Donor

He also talks with patients about the risks to the donor. The transplant is only a success if both donor and recipient do well, Dr. Danovitch said.

"Transferring the problems of one patient to another is neither a rational nor an ethical response," he wrote in a recent editorial in *Current Opinion in Nephrology and Hypertension (2007;16:503–505)*.

The donor may not do well postoperatively. While a person with a poor diet and little previous medical care may provide a healthy organ, that person's overall health may not be good and impair his or her ability to recover from the donation. After the donation, there may be little, if any, follow-up care for the seller.

In a study of 239 vendors in Pakistan *(Transpl Int 2007;20:934-939)*, 90% were illiterate; all were poor. Most sold a kidney in order to repay a debt.

The sellers received $1,377 on average, after deduction for hospital and travel costs. Virtually all of them had postoperative problems (98%), and 88% said selling a kidney did not lead to any material improvement in their lives.

Deciding whether to talk about the other ethical implications of paying for a kidney can be a struggle. But physicians have a responsibility to talk about the moral and ethical issues, just like the medical ones, Dr. Delmonico said.

"You have to talk about the other side of the equation, about someone so poor that they have no choice but to sell a kidney. There is no real autonomy, and probably not a lot of informed consent."

A Regulated Market

It should not just be illegal for Americans to sell a kidney, but for Americans to go abroad and purchase one, Dr. Delmonico said.

On the other hand, while Arthur Matas,

"You have to talk about the other side of the equation, about someone so poor that they have no choice but to sell a kidney. There is no real autonomy, and probably not a lot of informed consent.'—**Francis Delmonico, MD**

"Would I think it were wrong to go to the Philippines and buy a kidney if I knew the donor was getting good care? No.'
—Arthur Matas, MD

MD, Director of the Renal Transplant Program at the University of Minnesota, abhors the trafficking in human organs as much as his colleagues—and they are among the first to point out the places where their views are the same—he doesn't know if it should be illegal, he said.

"Would I think it were wrong to go to the Philippines and buy a kidney if I knew the donor was getting good care? No."

It would be impractical to enforce such regulations, he added. "What are you going to do? Take the kidney out? Fine them? Would people be as up in arms if they were going to Canada to buy a kidney?"

A regulated market in which people are compensated for donating a kidney could make it so people won't feel a need to go abroad for a transplant, Dr. Matas said.

He proposes a three- to five-year trial of a regulated system in which donors are compensated. Following that period, there would be a one-year moratorium for data to be collected and evaluated.

If the practice showed a negative impact on cadaver donations, or researchers noted that donations of other organs were declining, the program would stop.

As far as compensation, there should be a menu of options for donors, Dr. Matas said. "Some people argue that it might be good to have a tax break for donors. But that's not of any value to people who don't pay taxes. If you have health insurance through your job, maybe you don't want continuing care to be part of your compensation."

A regulated market won't work, though, Dr. Danovitch said. It hasn't in Iran. Dr. Danovitch recently met with a high official in the health ministry there who said no one would accept cadaver kidneys—they weren't viewed as being as "good" as live donor organs—and the number of hearts and livers being transplanted had plummeted because the number of deceased donations had gone down.

"A compensated market and a voluntary market can't cohabit," Dr. Danovitch said, noting that in India, where a black market for organ sale has existed in some areas, there is an inverse relationship between voluntary and paid donations.

"When police stopped the paid donations, voluntary ones went up."

But the culture is different in the United States, Dr. Matas said, using Iran

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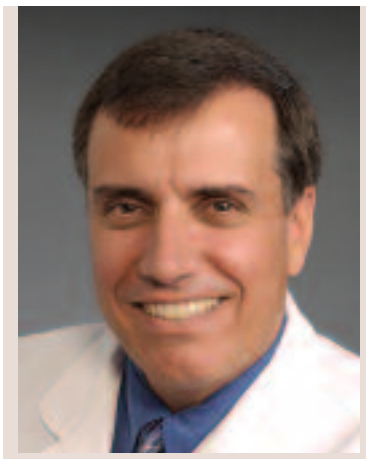
Extended Criteria Donor Transplants Lead to Comparable Survival in the Right Patients

By Michelle Hogan

When the appropriate selection criteria are used, transplanting elderly patients with extended criteria donor kidneys decreases waiting times and leads to similar survival compared with transplanting elderly patients with standard criteria kidneys, reported a single-center, retrospective study published in *Surgery (2007;142:514-523)*.

"We transplant a lot of ECD kidneys, and we initially looked at our results just in terms of standard criteria versus extended criteria, and we see equivalent outcomes now at three and four years after transplant," said senior author Robert J. Stratta, MD, Director of Transplantation and Professor of Surgery at Wake Forest University Baptist Medical Center.

"But part of the reason we have equivalent outcomes is we're choosing the recipients differently if you will.



"Part of the reason we have equivalent outcomes is we're choosing the recipients differently if you will. We're a lot more selective about recipient selection for the ECD kidney, and age tends to be probably the single most important matching criterion—older donors into older recipients—but it's not the sole or the exclusive criterion. You have to look ,at some other factors as well.'—**Robert J. Stratta, MD**

"We're a lot more selective about recipient selection for the ECD kidney, and age tends to be probably the single most important matching criterion—older donors into older recipients—but it's not the sole or the exclusive criterion. You have to look at some other factors as well." These factors include physiologic age and body size, Dr. Stratta said.

"Risk factors for graft loss were likewise similar, although acute rejection seemed to play a more prominent role in graft loss in the two older groups," they added.

Transplants with extended criteria donor kidneys and standard criteria donor kidneys showed similar survival—93% and 89%, respectively—and graft survival was also comparable—82% versus 81%, respectively.

> *"More and more there's an appreciation that there are unique subsets within the subsets that we've created and that we need to examine those a bit more closely in terms of who we should use these in to obtain the best outcomes."*

Comparable Graft Survival

A retrospective chart review was conducted of all 356 adult deceased donor kidney transplants performed at Wake Forest University Baptist Medical Center between October 1, 2001 and September 1, 2006. A total of 114 of these transplants (32%) were in patients older than 60, including 25 who were older than 70.

Of these patients older than 60, 61 (54%) received an expanded criteria donor kidney, more than in the younger age groups—39% in patients between the ages of 40 and 59 and 18% in patients between the ages of 19 and 39. Older patients had a shorter mean waiting time than the other two groups combined.

After a mean follow-up of 27 months, survival was lower in older patients than in younger patients—91% versus 95%—usually because of cardiovascular events, the authors wrote.

Graft survival, though, was comparable among all three age groups—82% in those older than 60, 83% in those between the ages of 40 and 59, and 87% in patients between the ages of 19 and 39. Initial and subsequent graft function, morbidity, and resource use were also similar, Dr. Stratta and colleagues wrote.

Mean waiting times in older patients, on the other hand, were shorter in those who received an extended criteria donor kidney than in those who received a standard criteria kidney—18 months versus 25 months.

Reassuring Study

"Age alone is not an exclusion criterion for kidney transplant," Dr. Stratta said. "Some practicing clinicians may think well this person's 80 years old—I really don't want them to take a kidney out of the pool that would be targeted for someone younger.

> *"The clinical implication would be that we can now safely use ECDs in patients who are 60 years or older because at least the short-term results are very good."*

"But that kidney out of the pool is from a 75-year-old donor, and you're really only going to put that in an elderly recipient and try to match not only donor-recipient age but donor-recipient kidney function.

"There is a subset of kidneys that are currently going unutilized or they're discarded that actually could be used safely and successfully in elderly recipients."

While this study didn't look at the survival of patients who stayed on the waiting list, their survival would probably be the lowest of all the transplant categories, Dr. Stratta said.

"You have to take that into account, although we're dealing with relative risk and so we're trying to expand the donor pool and were trying to learn what the limits of acceptability are in terms of not only donor criteria but appropriate recipient selection." And more studies that look at extended criteria donors are likely to come, he added.

One area that needs more focus is breaking up the categories of expanded criteria donors and recipients even more, said Jagbir Gill, MD, Research Scholar at the David Geffen School of Medicine at UCLA, who presented a study of transplants with expanded criteria donor after cardiac death kidneys at the American Society of Nephrology Annual Meeting and Scientific Exposition *(see NT, page 11)*.

"More and more there's an appreciation that there are unique subsets within the subsets that we've created and that we need to examine those a bit more closely in terms of who we should use these in to obtain the best outcomes."

The study from Wake Forest is reassuring, said Simin Goral, MD, Associate Professor of Medicine in the Renal Electrolyte and Hypertension Division at the Hospital of the University of Pennsylvania.

"The clinical implication would be that we can now safely use ECDs in patients who are 60 years or older because at least the short-term results are very good." •

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as an example. "Did Iran have a lot of cadaver donations before they introduced their compensated market? No."

In the Meantime

Drs. Delmonico, Danovitch, Canales, and Matas do agree that donors should be provided with long-term health care, life insurance, and a way to ensure there is no financial disincentive to donating.

Under the current system, though, Dr. Matas, like his colleagues, tells patients who ask about going abroad to purchase a kidney that there are more risks, that perioperative care isn't as good, that donor selection and evaluation aren't as good, and there are reports of patients being harmed.

As for whether patients who go abroad for a transplant should receive care on their return, there is no question, Dr. Matas said. "Of course we should take care of them." •

Home Dialysis Central Receives Award

Home Dialysis Central received an Aesculapius Award of Excellence from the nonprofit Health Improvement Institute.

The award, named after the Roman god of medicine, recognizes excellence in communicating health information on the Internet.

Home Dialysis Central, launched in 2004 to raise awareness and use of peritoneal dialysis and home hemodialysis among patients and health professionals, offers message boards, comparison charts, descriptions of home modalities, a product catalog, and currents news on home therapies. The site receives more than 35,000 visitors each month.