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## Advances Expand Kidney Transplants

By [DAVID TULLER](#)

When Soraya Kohanzadeh suffered [kidney failure](#) after surgery to correct a congenital heart defect, her mother offered to donate one of her own.

But after screening, Ms. Kohanzadeh, a high school teacher in Marin County, Calif., was told a [kidney transplant](#) was out of the question at that point.

Like 3 out of 10 kidney-transplant candidates, she had tested positive on a blood test called [P.R.A.](#), for panel-reactive antibody — proteins primed to attack foreign tissue, including her mother's.

“They said there was no way I could get a transplant, that the kidney would be rejected immediately because I had such high antibody levels,” recalled Ms. Kohanzadeh, now 32 and living in San Diego.

So she went online and discovered that transplant specialists at Cedars-Sinai Medical Center in Los Angeles were exploring a strategy to lower levels of the antibody in patients like her: giving high doses of the drug IVIG before surgery.

IVIG (pronounced I.V.I.G.; the letters stand for intravenous immunoglobulin) is derived from the pooled blood of hundreds of donors. Introduced about 30 years ago, it has been used to treat a variety of immune system disorders.

Ms. Kohanzadeh started this protocol, known as desensitization, at Cedars-Sinai in 2006. She received her mother's kidney shortly afterward, and it continues to function effectively. To date, Cedars-Sinai has performed more than 200 kidney transplants after desensitization with IVIG.

The number of Americans suffering from chronic kidney disease, driven by high rates of [hypertension](#) and [diabetes](#), has risen markedly in recent years. So has the number with end-stage renal disease, which can be treated only with [dialysis](#) or a transplant. Almost 80,000 Americans are on waiting lists for a new kidney, according to the National Kidney Foundation.

Despite improvements in dialysis technology, transplants remain the preferred treatment, with better long-term outcomes and quality of life. But until recently, there has been little possibility that patients with high P.R.A. levels would ever get off dialysis. Blood transfusions, [pregnancy](#) and a previous transplant can all cause high P.R.A. levels.

“Ten years ago this was an absolute contraindication to getting a kidney transplant,” said Dr. Mark D. Stegall of the [Mayo Clinic](#) in Rochester, Minn. — which, along with Cedars-Sinai and Johns Hopkins, is a pioneer in treating these highly sensitized patients.

Hopkins and Mayo, unlike Cedars-Sinai, rely on plasmapheresis, a blood-cleansing process that can

eliminate the dangerous [antibodies](#), generally followed by low doses of IVIG.

Plasmapheresis is used only in cases in which the patient has a live donor. Cedars-Sinai also accepts highly sensitized patients without living donors to prepare them with IVIG for a transplant from a deceased donor.

Both approaches have proved effective in small-scale studies and clinical practice, and all three centers routinely receive reimbursement from [Medicare](#), which covers most kidney transplants regardless of age.

The desensitization protocols — which have also been used to avoid organ rejection because of blood-type incompatibility, another major problem for potential recipients — can cost tens of thousands of dollars more than conventional transplants and are complex to administer.

Still, even though these patients tend to have higher rates of short-term complications, the overall one-year survival rate is generally just slightly less than the 90 to 95 percent rates among conventional transplant patients.

Researchers at Cedars-Sinai, Hopkins and Mayo are also studying whether additional drugs, different dosing and treatment schedules, and other strategies can increase success rates by preventing the antibodies from returning.

The techniques are gaining in popularity. Among the 250 or so other transplant centers in the United States, some have started offering their own desensitization protocols, and others are closely monitoring research and clinical developments.

“This is very much an up-and-coming strategy,” said Dr. Amy L. Friedman, a transplant surgeon at SUNY Upstate Medical Center in Syracuse and a board member of the American Association of Kidney Patients. “The results from these groups are really quite impressive, and we’re on the cusp of considering whether to use it.”

Dr. Robert Montgomery, chief of transplantation at Johns Hopkins, said some patients found his center after having been told they were too highly sensitized to receive a transplant. Because many such patients have been on long-term dialysis or have lost a previous transplanted kidney, they present special challenges.

“If you have a patient on dialysis for 20 years who has developed a bunch of co-morbid conditions and you put him through one of these fancy protocols, it’s a much more difficult proposition than doing a first transplant on a 30-year-old,” Dr. Montgomery said.

Ms. Kohanzadeh’s first transplant center, the California Pacific Medical Center in San Francisco, did not refer her for desensitization elsewhere but recommended another P.R.A. test in several months to see if her levels would drop on their own.

Dr. Steven Katznelson, vice chairman of California Pacific’s transplant department, defended that recommendation. (Ms. Kohanzadeh signed a privacy waiver so he could discuss her case.) He added that the desensitization protocols were still new three years ago and that the hospital had since referred dozens of patients with similar problems to Cedars-Sinai.

Despite the successes, transplant surgeons are concerned about a rigorous new effort by Medicare to review operations and outcomes at all transplant centers across the country, begun in the wake of widely reported

lapses at some transplant centers several years ago.

Dr. Stanley Jordan, director of transplantation at Cedars-Sinai, said such reviews needed to take account of mitigating factors like high P.R.A. levels that can affect patients' outcomes. Otherwise, he warned, they could discourage transplant centers from introducing more complicated treatment protocols and accepting more problematic patients.

"The feeling among many centers," he said, "is that we don't want to take patients that might not have good outcomes and would give us a black eye."

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