



DALE RUSNIK | KIDNEY TRANSPLANT RECIPIENT

“The most important thing to accept is that God is in control. The most important thing to do is to be compliant with your doctor’s advice.” — Dale Rusnik, 59, Chesterland, Ohio. For 4 ½ years, Dale underwent dialysis due to focal segmental glomerulosclerosis, a kidney disease. Thanks to a transplant last year, Dale no longer requires dialysis and is back to exercising and working at his job in information technology.

RENAL TRANSPLANTATION

Leadership

2010 Highlights

Clinical activity in renal transplantation remained strong at Cleveland Clinic's Glickman Urological & Kidney Institute in 2010 as we performed 159 transplants.

Transplantation, more than other clinical endeavors, is carried out with significant regulatory oversight. All Cleveland Clinic programs were among the first to be recertified by CMS. The kidney program also participated in a United Network for Organ Sharing pilot directed at developing guidelines for living donor programs. The renal transplant program continues to be active in the Paired Donation Network, an innovative service for incompatible donor-recipient pairs.

Awards and Achievements

The program in 2010 performed the first combined kidney and intestine transplant in Ohio. Cleveland Clinic liver transplant surgeons Cristiano Quintini, MD; Koji Hashimoto, MD, PhD; and Federico Aucejo, MD, performed the liver procedure, and Venkatesh Krishnamurthi, MD, performed the kidney procedure during a single landmark operation that lasted more than 10 hours. The patient, featured on page 44, has recovered well and is eating normally for the first time in years.

Research and Innovations

The laboratory of Robert L. Fairchild, PhD, continues to focus on:

- mechanisms that produce high levels of inflammation early in transplanted tissues and organs, and
- an understanding of how this inflammation directs alloantigen-primed T cells and other leukocytes into allografts and effector mechanisms leading to solid organ graft rejection.

The introduction of specific solid phase assays and improved histological recognition has made the detection of antibody-mediated rejection of organ



David A. Goldfarb, MD
*Program and Surgical
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Richard Fatica, MD
*Medical Director, Renal
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Fast facts

Initiated: 1963

First Adult Kidney
Transplant:
January 9, 1963

Medicare Approval:
July 1, 1966

UNOS Approval:
March 21, 1988

As of December 31,
2010, 3,641 kidney, 174
kidney/pancreas, 51
kidney/liver, 3 kidney/heart
and 1 kidney/intestine
transplants have been
performed at Cleveland
Clinic.

Cleveland Clinic developed
and refined dialysis tech-
niques in the 1950s to
enable survival of patients
with kidney failure.

We developed one of
the first deceased-
donor kidney transplant
programs in the world,
established in 1963.

We established active
living donor programs
for kidney (laparoscopic
live donor nephrectomy)
transplant.



Children's Hospital

First Pediatric Kidney
Transplant:
April 4, 1963

One pediatric kidney
transplant was performed
in 2010.

allografts more reliable. Antibody-mediated rejection is now emerging as a common cause of graft injury and loss, both early and late after transplant. Unfortunately, the treatment of antibody-mediated rejection has been limited to attempts at removal of the offending antibody from the serum or blocking its effects. Recently, bortezomib, an inhibitor of cytoplasmic proteasomes that has been used for multiple myeloma, has been used by the Cleveland Clinic kidney transplant team to treat antibody-mediated rejection.

In the Dec. 27, 2010, edition of *Transplantation*, Drs. Flechner et al. report initial experience in using the proteasome inhibitor bortezomib to treat established antibody-mediated rejection in 20 patients. The researchers concluded that the bortezomib-containing regimen demonstrated activity in antibody-mediated rejection but seems to be most effective before the onset of significant renal dysfunction or proteinuria. The best use of bortezomib to treat antibody-mediated rejection should be evaluated in controlled trials using dosing strategies that include longer courses or retreatment schedules.

Other studies include:

Principal Investigator – Dr. Emilio Poggio

Alloreactive T cell immunity in human transplant candidates: This is an NIH-sponsored study aimed at characterizing the cellular alloimmune response (T cell reactivity to donor antigens) in kidney transplant candidates and providing insight into immunological risk profiling by using noninvasive immune monitoring techniques. This study is also designed to correlate pre-transplant cellular alloreactivity with post-transplant clinical outcomes.

Principal Investigator – Dr. Stuart Flechner

Genomics for kidney transplantation: The overall objective of this program project is to apply the latest technologies in genomics to advance our understanding of graft injury.

Principal Investigator – Dr. Stuart Flechner

A randomized placebo controlled double-blind comparative study to evaluate the effect of ramipril on urinary protein excretion in maintenance renal transplant patients converted to sirolimus: The purpose of this study is to learn whether ramipril, an ACE inhibitor drug, is safe and effective in minimizing the risk of proteinuria in subjects in whom the immunosuppressive regimen is switched from a calcineurin inhibitor to sirolimus (a noncalcineurin inhibitor medication).

Principal Investigators: Dr. Emilio Poggio and Dr. Tittle Srinivas

Clinical trial in organ transplantation (CTOT-09): Immune monitoring and CNI withdrawal in low-risk recipients of kidney transplants. This is an NIH-sponsored multi-center trial (PI: Dr. Peter S. Heeger) with the goal of developing

a strategy of immune monitoring that will allow safe withdrawal of calcineurin inhibitors in kidney transplant recipients perceived to be at relatively low risk for immune injury.

Principal Investigators – Dr. Emilio Poggio and Dr. Richard Fatica
Immune Tolerance Network (ITN524ST)/Clinical Trials in Organ Transplantation (CTOT-12): Associating Renal Transplantation with the ITN Signature of Tolerance (ARTIST study). A multi-center observational study to assess the prevalence of a tolerance signature in renal transplant recipients.

Principal Investigators – Dr. Titte Srinivas, Dr. Stuart Flechner and Dr. Emilio Poggio

Renal allograft function and histology following switching from a tacrolimus to sirolimus (SRL)-based immunosuppression — clinical and mechanistic impact. This research study will test the hypothesis that switching from a calcineurin inhibitor (tacrolimus) to sirolimus (Rapamune) in a triple therapy regimen with MMF and steroids in living and or deceased donor renal transplant recipients leads to improvement in allograft structure and function at two years post-transplantation.

Principal Investigators – Dr. David Goldfarb, Dr. Robert Fairchild and Dr. Emilio Poggio

Kidney and pancreas transplant program bio-repository: In collaboration with the Lerner Research Institute, the Kidney and Pancreas Transplant Program has initiated a collection and storage of biospecimens (blood, urine, biopsy tissue) from kidney and pancreas transplant recipients who receive an organ at Cleveland Clinic. These biospecimens are to be used in the future to develop and test novel biomarkers that will eventually translate into better patient care. This is one of the most important endeavors currently ongoing in the research aspect of the program.

Phone Number

Pre-Transplant:
216.444.6996

Post-Transplant:
216.444.8949

Survival analysis: For patients receiving their first transplant of this type between July 1, 2007, and Dec. 31, 2009, and for the one-month and one-year models; between Jan. 1, 2005, and June 30, 2007, for the three-year model.

Single-organ transplants only; re-transplants excluded. (Source: Scientific Registry of Transplant Recipients, January 2011.)

Kidney: Adult survival

	1 month	1 year	3 years
Patient survival percent	99.3	96.4	88.3
Graft survival percent	98.5	94.7	84.5

Kidney: Pediatric survival

	1 month	1 year	3 years
Patient survival percent	100.0	100.0	87.5
Graft survival percent	100.0	100.0	64.7

Kidney/pancreas: Adult survival

	1 month	1 year	3 years
Patient survival (%)	100.0	95.4	79.4
Pancreas graft survival (%)	95.5	85.1	73.4
Kidney graft survival (%)	95.5	87.8	79.4

Number of transplants 2010

Organ	Number	Deceased	Living/Related	Living/Unrelated
Kidney	136	81	29	26
Kidney/pancreas	12	12		
Kidney/liver	10	10		
Kidney/intestine	1	1		
Total	159*			

* Includes 18 re-transplants.

Waiting list and post-transplant length of stay (LOS) for kidney patients transplanted in 2010

	Mean	Median	Number
Days waiting (deceased donor)	970.0	852.0	104
Post-transplant LOS	7.7	6.0	158*

* 1 patient not discharged as of Jan. 26, 2011.

Primary diagnoses for kidney patients transplanted in 2010

Diagnosis	Number	Percent
Diabetes	46	28.9
Re-transplant/graft failure	18	11.3
Polycystic kidneys	16	10.1
Hypertensive nephrosclerosis	15	9.4
Chronic GN: unspecified	9	5.7
IGA nephropathy	8	5.0
Systemic lupus erythematosus	7	4.4
Focal glomerulosclerosis	6	3.8
Membranous GN	6	3.8
Calcineurin inhibitor nephrotoxicity	5	3.1
Alport's syndrome	3	1.9
Chronic glomerulosclerosis	2	1.3
Other	18	11.3
Total	159	

Kidney transplant mortality 2010

Hospital deaths	0
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Selected Publications

Srinivas TR, Shoskes DA, eds. *Kidney and Pancreas Transplantation – A Practical Guide*. New York: Humana Press, Springer, 2010. (This book has contributions from many members of the group.)

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