

Clinical Experience in Organ Transplant From The Shiraz Transplant Center: 2011

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Abstract

Objectives: The Shiraz Organ Transplant Center, the largest transplant center in Iran, has expanded its program of organ transplant during recent years. This article seeks to summarize organ transplantation over the last 2 decades and evaluate its status as of 2011.

Materials and Methods: We retrospectively analyzed the clinical records of all organ transplants performed in our center in 2011. We reviewed the patients' demographics, underlying disease, operation details as well as postoperative complications.

Results: During this period, 655 organ transplants including 345 liver, 297 kidney, 29 pancreas, and 11 intestine and multivisceral transplants were done. Among 345 liver transplants, 291 patients received a deceased-donor graft including 18 cases of split liver transplants while 54 patients received living-donor liver transplants. The 1-year graft and patient survival rates were 90.1% and 91%.

Conclusions: In recent years, our program in organ transplantation has expanded in number and variety of organs transplanted. This improvement is related to our multidisciplinary strategies to expand the donor pool and the experiences obtained during our transplant activities.

Key words: Multivisceral transplant, Autotransplant, Liver, Kidney, Pancreas

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Introduction

The Shiraz Transplant center was established in 1988, the year when the first renal transplant was performed at this center¹ on May 4, 1993 from a deceased donor.² Since then, this institute has risen to become a pioneer of most solid-organ transplants in Iran in 2 respects: the number of transplants, and the variety of transplant procedures (eg, deceased-donor liver transplant, living-donor liver transplant,³⁻⁵ split liver transplant,⁶ pancreas transplant,⁷ multivisceral transplant, small bowel transplant, and different kinds of autotransplants such as small bowel, liver, and kidney). Here, we focus on 2011 transplant activities at the Shiraz transplant center.

Materials and Methods

Data for all patients who received transplants at this center in 2011 were collected and reviewed retrospectively. During this time, 345 liver, 297 kidney, 29 pancreas, and 11 intestinal and multivisceral transplants were performed.

Of 345 liver transplants, 291 patients received a deceased-donor graft, which included 18 split liver transplants, while 54 patients received living-donor liver transplants. Among 54 cases of living-donor liver transplant, the majority of recipients were pediatric patients and 9 were adults (Table 1).

Table 1. Rate of Different Organ Transplants at Shiraz Transplant Center in 2011

	DDLT		LDLT	Kidney	Pancreas	Intestine and Multivisceral
	Full Size	Split				
	273	18	54			
Total/kind	291					
Total	345			297	29	11

Abbreviations: DDLT, deceased-donor liver transplant; LDLT, living-donor liver transplant

Of 297 kidney transplants, 256 cases were from deceased donors, while 41 cases were from living-related donors. Among 29 cases of pancreas transplant, 11 patients received pancreatic transplant alone, while 18 patients received simultaneous pancreas and kidney transplants.

During this time, we performed 11 intestinal and multivisceral transplants. Three patients who had short bowel syndrome received isolated intestinal transplants, while 8 patients received multivisceral transplants. Out of those 8 patients, 6 underwent modified multivisceral transplants (without liver). Patient demographics are listed in Table 2.

Table 2. Multivisceral Transplants in Shiraz Transplant Center in 2011

No	Age	Diagnosis	Multivisceral	Modified Multivisceral
1	14	Metastatic neuroendocrine tumor	×	
2	35	Desmoid tumor		×
3	47	Small bowel insufficiency following small bowel autotransplant	×	
4	30	Short bowel syndrome	×	
5	50	Abdominal trauma		×
6	39	Pancreatic cancer		×
7	55	GIST		×
8	46	Abdominal trauma		×

Abbreviations: GIST, gastrointestinal stromal tumor

Ex vivo surgery and autotransplant is a novel technique used to approach patients with tumors considered unresectable by conventional techniques. Using valuable experience in liver and small intestine transplant, we applied this technique in several patients with hepatic tumors and patients with tumors involving the mesenteric vascular pedicle.

Results

The results of all liver transplants done in 2011 at our hospital were analyzed, which showed that after median follow-up of 12 months, the overall mortality rate was 9% (31 patients). One-year graft and patient survival was estimated at 90.1% and 91%. Acute graft failure secondary to primary nonfunction or vascular thrombosis occurred in 6 patients in whom we performed a retransplant. Out of these six, 3 patients (50%) survived. The most-common indications for a liver transplant were hepatitis B virus cirrhosis (17%), cryptogenic cirrhosis (16.7%), and autoimmune hepatitis (14.2%).

Major complications occurred in 38% of the patients: acute rejection (26%), biliary complications (9.5%), convulsion (7%), sepsis (2.9%), hepatic artery

thrombosis (3.2%), and portal vein thrombosis (2%). The outcome of kidney transplants was also excellent; only 3 patients died (1%), and 8 grafts (2.7%) were lost mainly because of vascular events.

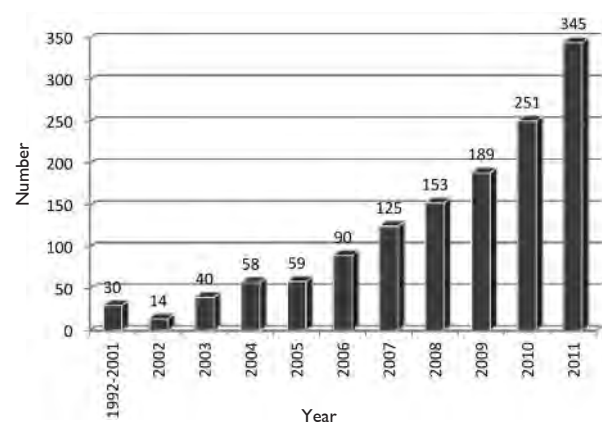
In pancreas transplants, we had just 1 graft loss owing to arterial thrombosis in a patient with a pancreas transplant alone in whom a pancreatectomy was done. As of this writing, the other recipients are in good condition with good graft function.

We have had 11 intestinal and multivisceral transplants with acceptable outcomes. Among these, we had 3 isolated intestinal transplants, all are alive with functioning grafts. As of this writing, of 8 multivisceral transplants (with and without liver), 4 patients are surviving with good graft function. Although the initial results of ex vivo surgery and autotransplant are promising, long-term follow-up is required to support our research.

Discussion

The annual rate of liver transplants has increased from 14 in 2002 to 345 in 2011 (Figure 1), while the survival rate of liver transplants has improved to more than 90%, which is comparable to that of major centers throughout the world.

Figure 1. Annual Statistics for Liver Transplants at Shiraz Transplant Center



This increase in the rate of liver transplants is due mainly to our strategy to expand the donor pool. We have tried to increase the annual rate of deceased-organ donation in Iran, and this rate has been increased from 0.3 per million of population in 2000 to more than 5 per million of population in 2011. Also, we have used organs from expanded criteria donors for high-risk recipients. Performing more living-donor liver transplants, split liver transplants,

and using more organs from a single deceased donor are other ways that we have used for this purpose.

To promote liver transplant in Iran and other Middle East Society for Organ Transplantation (MESOT) countries, we began a fellowship program in 2005 for surgeons in the field of organ transplantation. We are not only giving fellowships to Iranians, but also giving training to fellows of other MESOT countries. Another step is the construction of Avi-Cenna University Hospital in Shiraz, which hopefully will begin in 2013. In conclusion, our model for organ transplant has been well developed in recent years, and the Shiraz Transplant Center is one of the largest transplant centers in the world ready to collaborate with other centers.

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