Abstract

Objectives: Beginning to do liver transplants in a developing country is challenging. We report on the first few liver transplants performed in Qatar and discuss future exceptions and challenges facing our program.

Materials and Methods: The first liver transplant was performed in Qatar on December 6, 2011. Since starting the program, 4 deceased-donor liver transplants have been performed in Qatar. All recipients underwent a standard deceased-donor liver transplant procedure, which included a duct-to-duct biliary anastomosis without a veno-venous bypass. All liver transplants were performed at the Hamad Medical Corporation by a local team of surgeons without external assistance.

Results: The 4 patients were all men, with a median age of 56 years (age range, 46-63 y). Indications for liver transplant included hepatitis C cirrhosis in 2 patients, and 1 patient with hepatitis B cirrhosis with hepatocellular carcinoma, and the other patient with cryptogenic liver cirrhosis. Median amount of blood transfused was 6 units (range, 0-10 U); median time spent in the intensive care unit was 2 days (range, 2-5 d); median amount of time spent in the hospital was 10 days (range, 9-16 d). All 4 recipients have survived after a median follow-up of 438 days (range, 33-602 d) and are enjoying a healthy life, with no significant posttransplant complications.

Conclusions: A deceased-donor liver transplant can be performed in Qatar with no external assistance. However, a severe organ shortage remains the biggest obstacle facing us. Efforts should be directed toward improving the number and quality of available deceased donors in Qatar. Meanwhile, live-donor liver transplant may be the only way for us, going forward, to prevent deaths on the waiting list.

Key words: Middle East, Arab country, Organ donation

Introduction

Qatar is an Arab country with a growing population of around 1.9 million persons. It has a diverse population, mostly from Far East Asia, where there is a high prevalence of hepatitis B virus, and from neighboring Arab countries (eg, Egypt), where they have a high prevalence of hepatitis C virus infection. The estimated prevalence of hepatitis B virus (HBV) and hepatitis C virus in Qatar is approximately 4.7% and 2%, respectively.

Until recently, patients requiring a liver transplant had to seek treatment abroad, which cost patients a great deal of money and much discomfort. The need arose to establish a liver transplant program in Qatar that was activated in December 2011. Here, we report on the first few liver transplants performed in Qatar and discuss future exceptions and challenges facing our program.

Materials and Methods

In 2011, the Hamad Medical Corporation sought to introduce liver transplant in 3 phases: phase 1 consisted of adult deceased-donor liver transplant; phase 2 consisted of adult-to-adult live-donor liver transplant; phase 3 consisted of pediatric liver transplant.
transplant; and phase 3 consisted of pediatric liver transplant. After the initial setup, the deceased-donor liver transplant program was officially launched in December 2011. Shortly thereafter, the first liver transplant in Qatar was performed on December 6, 2011. The patient was a 43-year-old Egyptian man with hepatitis C virus and a MELD score of 16. The donor was a 48-year-old Filipino man who died of a cerebral hemorrhage.

Since activating the program, 4 deceased-donor liver transplants have been performed. All organs were retrieved from deceased donors who fulfilled the clinical criteria for brain death diagnosis set forth by the Qatar Center for Organ Transplantation. University of Wisconsin solution was used to preserve the grafts. All surgical procedures were performed using standard caval anastomosis without a veno-venous bypass. A duct-to-duct biliary anastomosis, using interrupted absorbable sutures was done in all recipients. All procedures were done by surgeons working at the Hamad Medical Corporation, with no external assistance. Postoperative immunosuppressive regimen included triple therapy with tacrolimus, mycophenolate mofetil, and methylprednisolone. Steroids were gradually withdrawn during 3 months in all recipients. Hepatitis B virus immunoglobulins and anti-HBV drugs were used in 3 patients who either had HBV-related disease (1 patient) or had received HBeAb positive grafts (2 patients). All protocols were approved by the ethics committee of the institution before the study began, and the protocols conformed with the ethical guidelines of the 1975 Helsinki Declaration. Written, informed consent was obtained from all patients.

Results

The 4 patients were all men, with a median age of 56 years (age range, 46-63 y). Indications for liver transplant included hepatitis C cirrhosis in 2 patients, and 1 patient with hepatitis B cirrhosis with hepatocellular carcinoma, and the other patient with cryptogenic liver cirrhosis. Median amount of blood transfused was 6 units (range, 0-10 U); median time spent in the intensive care unit was 2 days (range, 2-5 d); median amount of time spent in the hospital was 10 days (range, 9-16 d). One patient had a compliance issue and stopped taking tacrolimus 1.5 years after his transplant; he had a late rejection episode that we treated with high-dose intravenous steroids and readjustment of his immunosuppressive regimen. All 4 recipients have survived after a median follow-up of 438 days (range, 33-602 d) and are enjoying a healthy life, with no significant posttransplant complications.

Discussion

Beginning liver transplants in a developing country is challenging. Initial favorable outcomes are of paramount importance for the success and continuity of any program. Similarly, early failures can jeopardize the whole enterprise. Therefore, at Hamad Medical Corporation, we were eager to complete the proper setup before embarking on such a mission. We also were careful to select recipients and donors that would ensure favorable outcomes at the outset of the program.

In Qatar, the need for liver transplants is estimated at approximately 30 to 40 per year (or, 15 to 20 patients per million population). Our liver transplant waiting list usually has around 10 to 15 patients at any given time. During the past 2 years, we had 49 patients listed for liver transplant at Hamad Medical Corporation. Of those 49 patients, only 4 were transplanted in Qatar (8%); 12 are still on the waiting list (25%); 7 died while on the waiting list (14%); and 26 dropped off the list, most likely seeking liver transplant abroad (53%).

Although deceased organ donation was legalized in Qatar in 1997, with an estimated 50 to 70 potential deceased donors per year (or, 25 to 35 donors per million population), the number of donors that would be used in organ transplant remains limited. This underuse of potential deceased donors in Qatar is due to many complex logistical problems at all stages of the donation process including donor identification, reporting, diagnosis, management, documentation, and more importantly, obtaining consent.

The Qatar Center for Organ Transplantation (QCOT) has adopted aggressive plans to identify and solve these problems in an attempt to improve the number and quality of available deceased donors. The knowledge and attitude of the intensive care staff has been identified in neighboring Gulf countries as a major area for improvement that can lead to a significant increase in number and quality of available deceased donors. Therefore, the Qatar
Center for Organ Transplantation, in collaboration with Barcelona University, has organized regular Transplant Procurement Management courses and by the end of 2010, more than 40 Transplant Procurement Management diplomas were granted to intensive care physicians and nurses. In addition, we are working closely with the Transplant Procurement Management team from Barcelona University to identify and solve difficulties related to all aspects of the organ donation process. The Qatar Center for Organ Transplantation is also working closely with The Transplantation Society and the Declaration of Istanbul Custodian Group to develop a donation system that meets global professional ethical standards in accordance with the 2008 Declaration of Istanbul. This combined effort has led to the Doha Donation Accord, in an attempt to encourage donation and increase consent rates, it provides government-regulated social support to the families of all potential deceased donors.

After successfully performing the first few liver transplants, we find ourselves struggling in the face of a severe organ shortage that has significantly limited our ability to sustain and expand the program. The small number of transplants performed at our institute is not enough to meet the current demand and will undoubtedly affect our team’s skills and experience in the long term. Therefore, we have decided to move to the second phase of our program by introducing living-donor liver transplant. The option of living-donor liver transplant was offered to all patients on our waiting list, but unfortunately they either had no suitable donors, or they refused to subject their loved ones to the risks of the procedure. This pattern also was seen in some of the neighboring Gulf countries where acceptance rates for live donation was 13% among donors worked-up for living-donor liver transplant. Therefore, we believe that living-donor liver transplant might help but will not solve the problem, and that our efforts should be directed to identifying and solving the different obstacles related to deceased organ donation hoping to increase the number of available organs in Qatar.

In conclusion, deceased-donor liver transplant can be performed successfully in Qatar without outside assistance. However, severe organ shortage remains the biggest hurdle facing our program. Efforts should be directed toward improving the number and quality of available deceased donors in Qatar. Meanwhile, living-donor liver transplant might be the only way to prevent deaths on the waiting list.

References