Liver Transplantation at the Cuban Center for Medical and Surgical Research


ABSTRACT

From July 4, 1999, when a liver transplantation program was started in Cuba, to October 2003, 66 procedures had been performed in 60 patients. The most frequent reason was cirrhosis caused by hepatitis C virus (29%), and alcoholic cirrhosis (22%). Two patients received simultaneous liver-kidney transplants. Half of the patients were men. Patient ages ranged from 12 to 62 years; the average surgical time was 6 hours; and cold ischemia time was 4 to 14 hours. The average blood consumption was 2033 mL; 2900 mL of plasma and 8 units of platelets were used in 7 cases. Immunosuppression was mainly cyclosporine (Neoral), mycophenolate mofetil or azathioprine, and prednisone. Acute cellular rejections were treated in almost all cases with 3 doses of methylprednisolone. The most frequent complications were biliary (24%), hepatic arterial thrombosis (12%), postsurgical bleeding (10%), acute cellular rejection (24%), and ductopenic rejection (2%). The overall 1-year survival rate was 73.7%.

After the first liver transplantation in 1963, many in the medical community thought good results would be difficult. But technical advances over the following years led to the possibility of starting successful programs, mainly in the First World countries. The first successful liver transplantation in Cuba was performed on July 17, 1987, although the liver transplantation program proper did not start until July 4, 1999.1 From then until October 30, 2003, we performed 66 orthotopic liver transplantations (OLTs). For Third World countries, starting and maintaining one of these programs is extremely challenging, mostly for economic reasons. In this study we present the results of our program over the first 4 years.

METHODS

The clinical charts of 60 patients who underwent OLT from July 1999 to October 2003 were reviewed. G Medical, surgical, and post-surgical data related to the procedure were collected.

RESULTS

To October 2003, we performed 66 liver transplant procedures in 60 patients. Two were simultaneous liver-kidney transplants, and 6 were repeat transplants. Thirty patients were male, and 30 were female. The most common reason was noncholestatic advanced chronic liver disease, mainly from cirrhosis caused by hepatitis C virus (29%) and alcoholic cirrhosis (22%). Piggyback surgery was performed in 97% of the cases. No venovenous bypass was used. Biliary tract reconstruction was undertaken using 1 of 3 techniques. The first, in 44 patients, was choledochocholedochostomy (CCS) with a T tube, with 22.72% complications. The second was the same CCS but without a T tube and with a TUTOR in 19 patients. This technique was associated with 21.5% complications. Finally, hepaticoduodenostomy was used in 3 patients when the other techniques were not feasible for anatomic reasons or because of causes related to the underlying hepatobiliary disease. Vascular complications included hepatic arterial thrombosis (12%) and suprahepatic venous thrombosis (3.3%). Six patients (10%) required another operation to treat hemorrhage in the early post-surgical period. Acute cellular rejection was noted in 24.2% of patients, 43.75% of whom had hepatitis C virus. Seven pediatric transplant procedures were performed because of autoimmune cirrhosis in 3 cases and cryptogenetic cirrhosis, Wilson disease, Budd-Chiari syn-
drome, and Caroli syndrome in 1 patient each. Two transplants crossed a minor ABO incompatibility. The median consumption of blood-derived products was as follows: blood, 2033 mL; plasma, 2901 mL; and platelets, 8.2 units. The median surgical time was 6.1 hours, with a cold ischemia time of 7.83 hours and warm ischemia time of 43 minutes. The overall 1-year survival for patients who underwent transplantation because of chronic liver diseases was 73.7%, and 40% for those with fulminant or subfulminant hepatic failure.

DISCUSSION

When the program was started the retrohepatic cava vein was preserved, enabling good hemodynamic control during surgery. The surgeons, in close coordination with the anesthesia team, performed short-term occlusion of the cava and portal vein before the retrohepatic dissection. Initially, we performed CCS with a T tube, but later we replaced the T tube with a TUTOR. Early biliary complications were treated through an endoscopic retrograde cholangiopancreatography, placing a biliary endoprosthesis when necessary. Late biliary complications were resolved by surgical reconstruction by means of hepaticojejunostomy, because of structure or biliary stones 1 year posttransplantation. We now only use a T tube in patients with significantly different sizes between the donor and the host. The incidence of posttransplantation biliary complications, often referred to as our “Achilles heel,” ranges from 10% to 50%. The world medical literature shows a high incidence of biliary complications associated with a T tube, about 30% to 60% of all biliary complications, such as cholangitis, biliary leakage, translocation of rubber T tube, bile peritonitis, and biliary tract obstruction. Although we saw no differences in biliary complications between CCS with or without a T tube, we noted that these complications were less important in the absence of a T tube. This finding may be influenced by a greater experience in the management of biliary complications. Four patients with hepatic arterial thrombosis underwent repeat transplantation, 1 of whom died of multiorgan failure after right-sided hepatectomy due to a right branch thrombosis and subsequent necrosis of the right lobe. Another, with a donor vascular anomaly in whom we performed anastomosis of the right arterial branch, died of multiorgan failure caused by an unrecognized arterial right branch thrombosis. Two patients recovered spontaneously. One patient died of previously undiagnosed suprahepatic venous thrombosis. Another patient with this same type of complication who received a stent through a vascular procedure via the external jugular vein remains alive 2 years later.

The first simultaneous liver-kidney transplantation was performed in a dialysis patient with polycystic liver-kidney disease. Both kidneys were removed because of their large size. Another patient received a similar simultaneous liver-kidney transplant, in this case because of Caroli syndrome with chronic renal failure. Both patients have good kidney and liver function at 1 year postoperatively. The patients with acute cellular rejection were treated with 3 doses of methylprednisolone. In patients with hepatitis C virus we attempted to withdraw this drug, initially increasing the levels of other immunosuppressants. Two patients received transplants across a minor ABO incompatibility. One patient in group A and 1 in group B received organs from O donors. Neither displayed hemolysis; we used host blood before the anhepatic phase, and donor blood after revascularization of the liver. In both patients we used plasma from the same group as the host. The patients with fulminant or subfulminant hepatic failure were admitted to our center in an advanced, terminal state. The decision to transplant was not always correct. The consumption of blood-derived products has decreased notably in recent years, as have the surgical procedure times, because of the greater experience of the surgical team. Overall 1-year survival was 73.7%.

REFERENCES