Mid-Term Follow Up Results of Japanese Heart Transplant Patients Operated in UCLA Medical Center

Japanese candidates have been accepted for heart transplantation by the UCLA Medical Center in the US since 1993 due to the lack of donors available from brain-dead patients. **Objectives and Methods:** We monitored to patients who underwent such heart transplantation and have been seen at the out-patient clinic at Tokyo Women’s Medical University following transplantation. Pre-operative diagnosis was dilated cardiomyopathy in all patients. One patient underwent Novacor implantation as a bridge to heart transplant. All patients underwent cardiac echocardiography and cardiac catheterization including intraluminal echography. **Results:** All patients survived with an actuarial survival curve of 100% at 1 year, 100% at 3 years and 87% at 5 years in 4.15 years of average follow-up. Two patients died due to liver dysfunction and cerebral emboli. The postoperative functional status of patients was New York Heart Association classification I in 8 (100%). Immunosuppressive therapies included triple drug therapy using either cyclosporin or tacrolimus. The incidence of acute rejection (Ipt) exceeding grade 3 was 4% within three months, 3.5% in 3–6 months, and no significant rejection episode more than 6 months after transplantation. Posttransplantation coronary artery disease was seen in 2 patients, but no progression was seen after diltiazem therapy. **Conclusion:** Our postoperative follow-up after cardiac transplantation appears to be satisfactory. (JTCVS 2000; 48: 713–716)

**Key words:** heart transplantation, immunosuppressive therapy, acute rejection, dilated cardiomyopathy

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Since 1993, through the kind cooperation of the UCLA Medical Center in the US, we have enabled 10 patients seeking heart transplantation to undergo this surgery, which until only recently was not possible in Japan. This report describes peri- and postoperative courses of these patients over the last 5 years and discusses long-term prospects for these patients. We also evaluated factors that may influence long-term results.

Subjects and Methods

We evaluated 10 patients undergoing heart transplantation in the United States. Pretransplant assessments were made at our hospital. Our indicative criteria for heart transplantation, stricter than those of many countries are: (1) NYHA status grade IV, (2) ineffectiveness of β blocker therapy and ACE inhibitor, (3) hospitalization more than 3 times due to severe heart failure, (4) patient’s age under 50 years, (5) sufficient family support, and (6) financial support.

Ten Japanese patients — 9 men and 1 women — meeting these criteria, underwent heart transplantation at the UCLA Medical Center. The preoperative NYHA status was grade IV in all patients, and diagnosis involved end-stage dilated cardiomyopathy. One patient was less than 20 years of age, while the remaining 9 were between 20 and 50 years. (average: 31.3 years). One patient was implanted with a left ventricular assist device (Novacor N100 Wearable...
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LVAS: Baxter Japan, Tokyo) as a bridge to transplantation. We evaluate early and long-term results following transplantation, including and complications such as tissue rejection and coronary disease.

Results

Postoperative course and complications. Initial immunosuppressive therapy was conducted based on the UCLA transplant group protocol. Triple drug therapy using cyclosporin was used immediately after transplant. Thereafter, cyclosporin was changed to FK506 (tacrolimus) due to refractory rejection. After use of FK506, no significant rejection occurred in 2 patients.

There were no surgical or hospital deaths. The actuarial survival curve (Fig. 1) was 100% for 1 and 3 years and 87% for 5 years. The registry of ISHLT and total number of Japanese cardiac transplantation patients showed this survival rate to be satisfactory.

Acute rejection was determined by routine endocardial biopsy findings. Rejection episodes were classified by ISHLT grade. The incidence of acute rejection (≥3pt) exceeding grade 3 was 4% within three months, 3.5% in 3–6 months, and no significant rejection episode more than 6 months after transplantation (Fig. 2). No significant differences were seen between cyclosporin and FK506.

In 8 episodes of less than ISHLT grade 2, 1 incident involved increased cyclosporin dose and 7 observation only. Diltiazem and Pravastatin were routinely administrated to reinforce immunosuppressive therapy and prevent long-term complications of cardiac transplantation such as coronary disease and hyperlipidemia. Communication between doctor, coordinators...