

## **REPORT SUMMARY**

### **1. BLOOD AND MARROW TRANSPLANTATION**

There were a total of 1174 haematopoietic stem cell transplantations reported to the Registry between 1987 and 2006; 797 were functioning by the end of 2006.

The majority of all transplants (72%) were for malignant disorders and most of these are haematological malignancies like leukaemia and lymphoma. The main non-malignant disorders transplanted were thalassaemia and aplastic anaemia.

There were 124 new transplantations done in Malaysia in 2006 with 11 follow-up centres for transplant recipients.

Mean age of new transplant patients in 2006 was  $24 \pm 19$  years; 59% were male, 44% Malay, 38% Chinese, 7% Indian and 11% others. Autologous transplants accounted for 33%. Seventy-eight percent of the transplant source was from peripheral blood stem cells and 93% were from Human Leukocyte Antigen (HLA) identical donors.

In 2006, 25 of prevalent transplant recipients died. Underlying disease and infection were the commonest causes of death accounting for 44% and 32% respectively.

### **2. CORNEA TRANSPLANTATION**

There were 46 centres which provided cornea transplantation data.

One hundred and seventy-four new cornea transplantations were reported in Malaysia in 2006. Mean age of new transplant recipients in 2006 was  $44 \pm 22$  years. Of these, 67% were male. Thirty-five percent of recipients were Malay, 33% were Chinese, 23% were Indian and 9% were other races.

The primary diagnoses for cornea transplantation recipients in 2006 were keratoconus (19%), pseudophakic bullous keratopathy (17%), cornea perforation (15%), cornea scars (10%), microbial keratitis (6%), other (non-pseudophakic) bullous keratopathy (6%), and failed previous cornea grafts (5%).

Sixty percent of recipients were legally blind before their transplant surgery.

In 2006, 55% of donated corneas were from the USA, 24% from Sri Lanka and 20% from local sources. The mean age of the donors was  $55 \pm 16$  years.

The commonest cornea transplantation surgery performed was penetrating keratoplasty (86%) i.e. transplantation of a full thickness cornea tissue.

### **3. HEART AND LUNG TRANSPLANTATION**

There were a total of 17 heart transplantations reported to the Registry between 1997 and 2006; seven grafts were functioning at the end of 2006 and all were followed up in Institut Jantung Negara.

There was only 1 heart transplantation done in 2006.

Two thirds of the heart transplant recipients were males and 58% were Indians. The mean age of recipients was  $36 \pm 16$  years. Ischaemic cardiomyopathy was the commonest primary diagnosis (9/17) followed by dilated cardiomyopathy (6/17).

Six recipients died in hospital following heart transplantation; four patients succumbed to late deaths after their heart transplant.

The transplant patient survival rate was 59% and 40% at 1 year and 3 years respectively.

Two lung transplantations were performed, one in 2005 and one in 2006. Both of the patients were Indian males and both of them had Idiopathic Pulmonary Fibrosis. Single lung transplantation was performed for the 1<sup>st</sup> patient and patient remained alive with good quality of life. Double Lung transplantation was performed in the second case in 2006. Unfortunately, this patient succumbed 8 weeks after transplantation due to Cytomegalovirus infection.

### **4. LIVER TRANSPLANTATION**

There were a total of 88 liver transplantations reported to the Registry between 1993 and 2006; 50 grafts were functioning by the end of 2006.

There were 8 new liver transplantations done in Malaysia in 2006.

There were 5 follow-up centres for liver transplant recipients in 2006.

Mean age of all transplant patients was  $7 \pm 14$  years (range 3 months to 74 years); 57% were male, 50% Chinese, 72% were for biliary atresia. Majority were living donor liver transplantations (80.7%).

At the time of transplantation the main immunosuppressive drugs used were tacrolimus (77%) and steroids (59%).

Transplant patient survival rate for the cohort 1993 to 1998 was 71% at 1 year; survival rate for the cohort 1999 to 2006 was 70% at 1 year.

## **5. RENAL TRANSPLANTATION**

There were 51 follow-up centres for renal transplant recipients in 2006. Incident rates for renal transplantation were static, from 6 per million population in 1997 to 5 per million in 2006. There were 132 new renal transplants in 2006.

The number of functioning renal transplants has increased steadily from 1083 in 1997 to 1728. The transplant prevalence rate was 65 per million population in 2006.

In 2006, the mean age for new transplant recipients was  $37 \pm 15$  years, 68% were male and 20% had diabetes at the time of transplantation.

Ninety-seven percent of prevalent renal transplant recipients were on prednisolone, 75% on cyclosporine, 17% on tacrolimus, 48% mycophenolate mofetil and 34% on azathioprine.

In 2006, 49 (3%) of prevalent transplant recipients died and 35 (2%) lost their grafts. Infection and cardiovascular disease were the commonest causes of death accounting for 41% and 19% respectively. Death at home was the third commonest cause at 13%. Renal allograft rejection accounted for 71% of graft loss.

The overall transplant patient survival rate from 1993 to 2006 was 95%, 91%, 88% and 80% at 1 year, 3 years, 5 years and 10 years respectively, while the overall graft survival rate for these years was 92%, 85%, 79% and 63% respectively.

## **6. HEART VALVE TRANSPLANTATION**

There were a total of 167 heart valve homografts reported to the Registry between 1996 and 2006; 148 grafts were functioning at the end of 2006. Eighty-three were aortic and 84 were pulmonary valves.

Mean age of all heart valve transplant patients was  $11 \pm 10$  years (range 3 months to 70 years); 51% were male, 61% Malay.

## **7. BONE AND TISSUE TRANSPLANTATION**

In 2006, 127 bone allografts and 379 amniotic membranes were supplied by National Tissue Bank, USM.

Twenty-two hospitals used the bone grafts and 17 centres used the amniotic membranes. Characteristics were reported for only 35 of the recipients (7%).

## **8. CADAVERIC ORGAN AND TISSUE DONATION**

There were 25 donors in 2006 of which 14 were brain dead multi-organ and tissue donors and 11 were post cardiac death tissue donors. The donation rate was 1.01 donations per million population (pmp), a twofold rise from 0.53 donations pmp in 2005.

The mean age of the donors was  $35.7 \pm 22.5$  years. The youngest was a three-year old multi-organ and tissue donor while the oldest was a 77 year-old eye donor. Seventy-six percent were male, 48% were Chinese, 44% Indian, 8% Malay.

One donor carried the donor pledge card. Thirteen of the donors died from medical causes, 10 died from accidents and two were homicides. Sixty-eight percent of donations took place in MOH state hospitals, 16% in private hospitals and 12% from University hospitals.