

Initial Report on the Results of the Kidney Transplant Program at the Bajío Regional High Specialty Hospital

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ABSTRACT

Background. We present the first results of our program, which is characterized by its acceptance of any candidate with chronic renal failure. Therefore, we serve all patients, regardless of their social security and socioeconomic status.

Methods. We conducted a retrospective, descriptive, cross-sectional study describing the characteristics of patients who received kidney transplants in the period from 2008 to 2015. Descriptive statistics were used to evaluate our findings.

Results. A total of 708 transplants were performed, with 377 (53%) involving a living donor and 331 (47%) involving deceased donors. The patients' mean age was 26 years (± 12.7 SD), with a range of 5 to 69 years. Of these patients, 488 were male (68.9%), and 423 (59.7%) had no social security. The replacement therapy prior to transplantation was peritoneal dialysis in 40% of cases, hemodialysis in 57% of cases, and 3% of patients had no prior therapy. The blood group distribution was 436 (61%) type O; 177 (25%) type A; 78 (11%) type B; and 8 (1%) type AB. The average hospital stay for a living donor transplant was 9 days and 13 days in the case of a deceased donor.

Conclusions. This study describes the basic clinical and epidemiological characteristics of our transplant population. These results can be used as a basis for future descriptive and prospective studies at our institution or in other inter-agency and national projects. We also highlight the rapid development of the kidney transplant program at the Bajío Regional High Specialty Hospital.

THE FIELD of organ transplantation in humans is one of the most complex and fascinating in modern medicine and represents one of the most significant advancements of the 20th century [1]. The first successful kidney transplant in humans (Boston, Mass, United States) was performed in 1954. In Mexico, the first kidney transplant took place on October 22, 1963, in the General Hospital of the Mexican Social Security Institute National Medical Center [2]. This was also the first transplant in Latin America and Spain [3]. Currently, there are 357 hospitals in Mexico in which kidney transplants are performed. In the past 5 years, an average of 2634 renal transplants were performed, and there are currently 12,282 patients waiting for a kidney transplant [4].

The Bajío Regional High Specialty Hospital (HRAEB) is a public hospital that receives federal funding. The HRAEB

is a newly established hospital that began operating in 2007 to meet the healthcare demands of approximately 5.8 million inhabitants of the states of Guanajuato, Jalisco, Michoacan, Zacatecas, and Aguascalientes. The HRAEB is located in Leon, Guanajuato, in central western Mexico. It is a tertiary-level hospital with 184 beds [5], including 16 intensive care beds, 15 emergency beds [6], and a transplant unit with 26 beds. In 2008, it initiated the Kidney Transplant Program, and a medical residency program was established in 2014 to train specialists in renal transplantation surgery.

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Table 1. Characteristics of Transplant Patients at the HRAEB

Variable	Number of Patients n = 708 (100%)
Age of recipient (age \pm SD)	26 \pm 12.07
Male recipient	488 (68.9%)
Deceased donor	333 (47%)
Related living donor	335 (47.3%)
Unrelated living donor	40 (5.6%)
Etiology of renal disease	
Unknown	537 (75.8%)
Diabetes and hypertension	44 (6.2%)
Glomerulonephritis	22 (3.1%)
Familial nephritis	22 (3.1%)
Polycystic disease	17 (2.4%)
Urologic disease	16 (2.4%)
Other	50 (7%)
Immunosuppression	
Basiliximab induction	325 (45.9%)
Thymoglobulin induction	42 (5.9%)
Daclizumab induction	8 (1.1%)
No induction	333 (47%)
Cyclosporine-mycophenolate-prednisone	504 (71.1%)
Tacrolimus-mycophenolate-prednisone	201 (28.3%)
Death, no immunosuppression	3 (0.4%)
Social Security	
IMSS	276 (38.9%)
Institute for Social Security and Services for State Workers (Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado)	8 (1.1%)
Secretariat of National Defense (Secretaría de la Defensa Nacional)	1 (0.1%)
No Social Security	423 (59.7%)
Federated state of origin	
Guanajuato	666 (94%)
Jalisco	17 (2%)
Zacatecas	13 (1.8%)
Michoacán	8 (1.1%)
San Luis Potosí	2 (0.2%)
Querétaro	1 (0.1%)
Mexico, F.D.	1 (0.1%)

We present the first results of the Kidney Transplant Program, and this paper provides relevant demographic information regarding the renal transplant patients in the HRAEB.

METHODS

This is a retrospective, descriptive study of 708 kidney transplants performed between January 26, 2008, and July 31, 2015. The following variables were analyzed: age, sex, blood type, renal replacement therapy, type of transplant, hospital stay, mortality, and graft loss (Table 1). All information is derived from the database of the Transplant Unit, the electronic patient records, and the physical files at the HRAEB. The study was approved by the Ethic Committee and the Research Committee local of the HRAEB. The data were analyzed with the use of the SPSS 15.0 statistical package. Statistical analysis was performed with the use of measures of

central tendency and dispersion (mean and standard deviation) for quantitative variables and proportions for qualitative variables.

RESULTS

This study consists of continuous data on the activity of the transplant program of HRAEB over 7 years and 6 months. The data comprise a total of 708 kidney transplants that were performed between January 26, 2008, to July 15, 2015. Fig 1 shows the renal transplant activity per year and the type of donation involved. Of the 708 transplants, 488 (68.9%) men and 220 (31.1%) women; 377 (53%) involved living donors and 331 (47%) were from deceased donors. The mean age was 26 years, with a range of 5 to 69 years and a standard deviation of \pm 12.7. Fig 2 shows the age groups of the transplanted patients.

Of the transplant patients, 423 (59.7%) had no social security. The replacement therapy prior to the transplant was peritoneal dialysis in 40% of patients, hemodialysis in 57%, and 3% had no prior treatment. The patient blood types were type O in 436 (61%); type A in 177 (25%); type B in 78 (11%); and type AB in 8 (1%) patients. The average hospital stay for a living donor transplant was 9 days. The stay was extended to 13 days in the case of a deceased donor.

The mortality rate was 6.2% (44 deaths of 708 transplants), and 71 grafts (10% of transplants) were lost. Currently, 593 patients (83.7% of the total kidney transplants) have functional grafts and are monitored with follow-up assessments.

DISCUSSION

The kidney transplants were performed at HRAEB over a span of 7½ years. Despite being a young program in a relatively new hospital, the HRAEB performs approximately 3% of the total annual transplants in Mexico and currently ranks third in deceased donor kidney transplantation [4]. This indicates that this program has experienced rapid development compared with similar hospitals throughout Mexico, such as the National Institute of Medical Sciences and Nutrition Salvador Zubiran, which, over a period of 44 years (1967–2011), performed 1000 transplants [7].

The HRAEB exceeds the number of transplants performed (708 transplants in 7 years and 6 months) compared with other hospitals in other countries, such as General Hospital of Fortaleza-Ceara, Brazil, which, over a period of 5 years (2005–2009), performed 203 transplants [8]; Ramathibodi Hospital, Bangkok, Thailand, which, over a period of 6 years (2005–2010), performed 232 transplants [9]; and Transplantation Center of Sanko University Medical School, Gaziantep, Turkey, which, over a period of 4 years (2011–2014), performed 136 transplants [10].

The high level of productivity of the HRAEB is due to the harmonious integration of the professional team involved in kidney transplantation. The team is dedicated to the preservation of life, using the latest technology and applying the

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