

## Renal transplant outcomes in Spain

Daniel Serón and Francesc Moreso

Nephrology Department, Hospital Vall d'Hebrón, Barcelona Spain

Correspondence and offprint requests to: Daniel Serón; E-mail: 17664dsm@comb.es

### Introduction

Renal transplantation has experienced important modifications during the last two decades. Donor and recipient characteristics have been modified during this period of time. Donor age, a major determinant of graft outcome, has increased as well as the proportion of donors dying of stroke. Recipients are older, and their cardiovascular risk burden has also steadily increased. On the other hand, new immunosuppressants have allowed a dramatic reduction in the prevalence of acute rejection. In this changing situation, it is necessary to monitor how these modifications influence patient and graft survival [1]. Additionally, transplant policies in different countries differ in many aspects. The consequences of these policies on outcome are important to understand since this knowledge is necessary to fine-tune the organization of renal transplantation in the future.

Renal transplantation in Spain has some special characteristics. The Spanish system has favoured local harvesting and local implantation. This policy has been successful in increasing the number of cadaveric donors. However, as a consequence of this success, the number of kidney transplants obtained from living donors is lower than in other countries [2]. In order to monitor a time-dependent modification in donor and recipient characteristics and treatment modifications in Spain, the Spanish Chronic Allograft Dysfunction Study Group was created as a study group of the Spanish Society of Nephrology in year 2000. For this purpose, a detailed database was created, thanks to an unrestricted grant from Wyeth Farma Spain (currently Pfizer), and all Spanish adult transplant centres were invited to participate. Patients transplanted in 1990, 1994 and 1998 were considered for the present study and were followed up until June 2001. The general results of this study were published in 2003, and the particular aspects of this cohort were published in Volume 19, Supplement 3 of *Nephrology, Dialysis and Transplantation* in 2004.

In 2003, it was decided to include the cohort of patients transplanted in Spain in 2002, and all cohorts were followed up until December 2005. The first publication describing risk factors associated with outcome in this second phase of the study was recently published, in which

a novel score for mortality in renal transplant recipients beyond the first year was described [3].

In the present supplement, specific aspects regarding the updated study are presented. The analysis has focused on the evolution of treatment attitudes in Spain between 1990 and 2002. In this regard, the evolution of the use of statins and its association with graft survival, death censored graft survival, and patient survival have been analysed. Similarly, in another article, the use of angiotensin-converting enzyme inhibitors or angiotensin receptor blockers and its association with outcome are presented. Steroid withdrawal in Spain is also reviewed. Selection criteria for steroid withdrawal are analysed, and the outcome after steroid withdrawal is thoroughly described. The evolution of induction therapy in Spain during the study period is also reviewed, its indications and its relationship with outcome. Additionally, other topics such as outcome in re-transplant patients, relationship between new onset diabetes after transplant and weight gain, outcome in hepatitis C-positive recipients and factors associated with renal function decline are analysed.

*Acknowledgements.* This study was supported by a Wyeth Spain grant (currently Pfizer Spain). We thank Jordi Curto and M. Luz Samaniego, MSc Statistics, for their statistical advice. We are grateful to Jorge Muñoz, MD and Gabriela Alperovich, MD, PhD (Wyeth Spain, now Pfizer Spain) for study coordination and critical revision of the manuscripts.

*Conflict of interest statement.* None declared.

### References

1. Meier-Kriesche HU, Schold JD, Kaplan B. Long term renal allograft survival: have we made significant progress or is time to rethink our analytic and therapeutic strategies? *Am J Transplant* 2004; 4: 1289–1295
2. Serón D, Arias M, Campistol JM *et al.* Spanish Chronic Allograft Nephropathy Study Group. Late renal allograft failure between 1990 and 1998 in Spain: a changing scenario. *Transplantation* 2003; 76: 1588–1594
3. Hernández D, Sanchez-Fructuoso A, Gonzalez Posada JM *et al.* A novel risk factor for mortality in renal transplant recipients beyond the first post-transplant year. *Transplantation* 2009; 88: 803–809

Received for publication: 18.12.09; Accepted in revised form: 29.3.10