EDITORIAL

Lessons Learned from Cardiac Transplantation

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Heart failure, the final of several pathologies, is the first cause of morbidity and mortality in developed countries.

Heart transplantation is by far the best available therapeutic alternative able to modify the prognosis and quality of life of these patients. (1-5)

The current scene shows: growing disparity between the number of available recipients and donors; increasing age of recipients, continuous improvements in the treatment of heart failure, changes in the profile of donors, more cardiac emergencies and increase in mortality of patients in waiting list.

The success of transplantation programs is due to an ideal use of available donors.

Dr. Margarita Peradejordi et al. work (6) show that the majority of the hearts came form death donors due to head traumatisms and had a mean age of 26. In Spain, the profile changed to an increase in the donors with cerebral haemorrhage and the mean age of them in 2009 was 37. (7) In 2008, Argentina obtained 13.1 donors per million, while in Spain the number is elevated to 34.2 donors per million, conditioning the number of cardiac transplantations performed per million inhabitants of 5.9 versus 2.3 per million, respectively.

The Complejo Hospitalario Universitario de A Coruña, until December 2010, has performed 618 orthotopic cardiac transplantations, what means that the use of donors over 50 years-old decrease mortality in waiting list, without affecting survival in the short and medium term of patients who underwent a transplantation. The acceptance criteria of these donors are: normal echocardiogram (left ventricular hypertrophy less than 15 mm), time of ischemia lower than four hours, absence of diabetes and peripheral vasculopathy in the donor. (8, 9)

An important observation of the study is that in Argentina there are 23 authorized centers to perform cardiac transplantations (1 center each 1.8 million people), that perform between 70 and 80 cardiac transplantations in a year. In Spain, between 250 and 350 transplantations per year are performed, in 18 centers (1 center each 2.6 million people).

Another important aspect is considering mortality of transplantation programs as the sum of mortality in waiting list plus postoperative hospital mortality. The waiting of an ideal donor increases mortality in list, but decreases hospital mortality.

The use of resuscitation techniques during transplantation (10, 11) decreases the primary failure of the graft and increases the possibility of using limit donors. Such continuous antegrade reperfusion haematic technique decreases ischemia time and improves those problems caused due to reperfusion after cold ischemia.

The results obtained by Favaloro Foundation are excellent, despite the number of urgencies or emergencies performed; the results of the Spanish registry of Cardiac Transplantation shows greater mortalities and worst results in urgent patient.

In summary, Peradejordi et al. show us the importance of the work in group of the hospital with more experience in cardiac transplantations of Argentina.

Future challenges, recipients with more risk: we must use older donors. There would appear new immunosuppressive agents, with less toxicity (nephrotoxicity, neoplasias, hypertension or diabetes). Prevention of chronic cardiac rejection will play an important role in survival. It is important to create new techniques of myocardial protection. In the future, we will have biochemical and anatomical parameters of viability in order to determine the viability of the organs before the transplantation.

To conclude, I will comment the most important learned lessons: 1) the rational use of available donors, 2) the best candidate for a cardiac transplantation is the recipient under 65 years-old, 3) pulmonary hypertension is an independent factor of risk, 4) urgent cardiac transplantation has less survival, 5) donor-recipient compatibility is crucial to decrease the primary failure of the graft, 6) surgery bicaval technique is the technique of choice, 7) meticulousness in the prevention of infections, 8) better control of post-transplantation risk factors: hypertension, obesity and diabetes, 9) mortality of a transplantation program includes mortality in waiting list, 10) cardiac transplantation is the ideal indication for patients with refractory heart failure.

Finally, it is important to keep the illusion that all of us workers of transplantation programs have, as it is the basis of the success.

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BIBLIOGRAPHY

1. Juffe A, Rodriguez MA, Caputo E, Cuenca J, Crespo M. Long-term results of Cardiac Transplantation. J Card. Surg 2003; 18:183-9.

2. Juffé A, Stein A, Cuenca Castillo J. El cirujano de trasplantes. Filosofía Quirúrgica. México: McGraw-Hill Interamericana; 2001.

3. Díaz Molina B, Ortega Montoliu T, Montoliu Sanclement MA, Almenar Pretejo M, Juffé Stein A, de la Mata M, et al. Estudio prospectivo multicéntrico de cohortes de calidad de vida relacionada con la salud de pacientes que reciben un primer trasplante de corazón. Rev Esp Cardiol 2007; 60:110.

4. Juffé A, Pradas G, Rodríguez E, Figuera D. Aspectos quirúrgicos del trasplante cardíaco. Clínica Cardiovascular 1985;3:29-32.

5. Spotlight: Juffé A. Interview by Mark Nicholls. Juffé A - Circulation 2007;115:88-9.

6. Peradejordi M, Favaloro RR, Bertolotti A, Abud J, Gómez C, Absi D y col. Trasplante cardíaco ortotópico: resultados del Hospital Universitario Fundación Favaloro. Rev Argent Cardiol 2011; 79:508-13.

7. Almenar L, Segovia J, Crespo MG, Palomo J, Arizón JM, González-Vilchez F, et al. Registro Español de Trasplante Cardíaco. XXI informe oficial de la sección de insuficiencia cardíaca y trasplante cardíaco de la Sociedad Española de Cardiología (1984-2009). Rev Esp Cardiol 2010; 63:1317-28.

8. Cursack G, Crespo MG, Paniagua MJ, Estévez F, Adrio B, Muñiz J, et al. Trasplante cardíaco con donantes mayores de cincuenta años: ¿aumenta la mortalidad? Rev Esp Cardiol 2006; 59:56.

9. Caputo E, Cuenca J, Portela F, Herrera JM, Rodríguez MA, Campos V, et al. ¿Tiene valor pronóstico la utilización de donantes mayores de 40 años para trasplante cardíaco? Cirugía Cardiovascular 2000; 7:47-9.

10. Pradas G, Cuenca J, Juffé A. Continuous warm reperfusion during heart transplantation. J Thorac Cardiovasc Surg 1996; 111:784-90.

11. Pradas G, Valle JV, Cuenca J, Campos V, Rodríguez F, Hermida LF, et al. Continuous warm blood perfusion in heart transplantation: A new preservation technique. Thoracic Organ Transplantation 1994; 19:25-31.