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ORIGINAL ARTICLE

A decade of cardiac transplantation in Coimbra: The value of experience☆

David Prieto, Pedro Correia, Manuel Batista, Emília Sola, Fátima Franco, Susana Costa, Pedro E. Antunes, Manuel J. Antunes*

Centro de Cirurgia Cardiotorácica e Transplantação de Órgãos Torácicos, Centro Hospitalar e Universitário e Faculdade de Medicina de Coimbra, Coimbra, Portugal

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KEYWORDS
Heart failure;
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Abstract
Introduction and Objectives: To analyze the experience gained in 10 years of the heart transplantation program of the University Hospital of Coimbra.
Methods: Between November 2003 and December 2013, 258 patients with a mean age of 53.0±12.7 years (3–72 years) and predominantly male (78%) were transplanted. Over a third of patients had ischemic (37.2%) and 36.4% idiopathic cardiomyopathy. The mean age of donors was 34.4±1.3 years and 195 were male (76%), with gender difference between donor and recipient in 32% of cases and ABO disparity (non-identical groups but compatible) in 18%. Harvest was distant in 59% of cases. In all cases total heart transplantation with bicaval anastomoses, modified at this center, was used. Mean ischemia time was 89.7±35.4 minutes. All patients received induction therapy.
Results: Early mortality was 4.7% (12 patients) from graft failure and stroke in five patients each, and hyperacute rejection in two. Thirteen patients (5%) required prolonged ventilation, 25 (11.8%) required inotropic support for more than 48 hours, and seven required pacemaker implantation. Mean hospital stay was 15.8±15.3 days (median 12 days). Ninety percent of patients were maintained on triple immunosuppressive therapy including cyclosporine, the remainder receiving tacrolimus. In 23 patients it was necessary to change the immunosuppression protocol due to renal and/or neoplastic complications and humoral rejection. All but two patients have been followed in the Surgical Center. Fifty patients (19.4%) subsequently died from infection (18), cancer (10), vascular (eight), neuropsychiatric (four), cardiac (two) or other causes (eight). Forty-six patients (17.8%) had episodes of cellular rejection (>2 R on the ISHLT classification), eight had humoral rejection (3.1%), and 22 have evidence of graft vascular disease (8.5%). Actuarial survival at 1, 5, and 8 years was 87±2%, 78±3% and 69±4%, respectively.

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* Corresponding author.
E-mail address: antunes.cct.chuc@mail.telepac.pt (M.J. Antunes).

Conclusion: This 10-year series yielded results equivalent or superior to those of centers with wider and longer experience, and have progressively improved following the introduction of changes prompted by experience. This program has made it possible to raise and maintain the rate of heart transplantation to values above the European average.

PALAVRAS-CHAVE
Insuficiência cardíaca;
Transplantação cardíaca;
Imunossupressão

Uma década de transplantação cardíaca em Coimbra. O valor da experiência

Resumo
Introdução e objetivos: Analisar a experiência adquirida em dez anos do programa de transplantação cardíaca dos Hospitais da Universidade de Coimbra.
Métodos: De novembro de 2003 a dezembro de 2013, 258 doentes com idade média de 53,0±12,7 anos (limites 3-72 anos) e predominância do sexo masculino (78%) foram transplantados. Mais de um terço dos doentes tinha miocardiopatia isquémica (37,2%) e 36,4% idiopática. A idade média dos dadores era 34,4±11,3 anos e 195 eram do sexo masculino (76%), com disparidade de sexo entre dador e recetor (F:M) em 32% dos casos e disparidade AB0 (grupos não idênticos mas compatíveis) em 18%. A colheita foi feita à distância em 59% dos casos. Em todos os casos foi utilizada a técnica de transplantação total, com anastomose bicava, modificada neste centro. O tempo médio de isquemia foi 89,7±35,4 minutos. Todos os doentes receberam terapêutica de indução.
Resultados: A mortalidade precoce foi 4,7% (12 doentes), por falência do enxerto e acidente vascular cerebral em cinco cada, e por rejeição hiperaguda em dois. Treze doentes (5%) necessitaram de ventilação prolongada e 25 (11,8%) requereram suporte inotrópico por mais de 48 horas, sete necessitaram de implantação de *pacemaker*. O tempo médio de internamento foi de 15,8±15,3 dias (mediana, 12 dias). Noventa por cento dos doentes foram mantidos com terapêutica imunossupressora tripla, incluindo ciclosporina. Os restantes receberam tacrolimus. Em 23 doentes foi necessário alterar o esquema de imunossupressão devido a complicações renais e/ou neoplásicas e rejeição humoral. Todos os doentes, exceto dois, são seguidos no centro cirúrgico. Cinquenta doentes (19,4%) faleceram tardiamente por infeção (18 doentes), neoplasia (dez doentes), causa vascular (oito doentes), neuropsiquiátrica (quatro doentes), cardíaca (dois doentes) ou outras (oito doentes). Quarente e seis doentes (17,8%) tiveram episódios de rejeição celular (≥2 R da ISHLT) e oito tiveram rejeição humoral (3,1%), e em 22 há evidência de doença vascular enxerto (8,5%). A sobrevivência atuarial a um, cinco, e oito anos foi de 87±2%, 78±3% e 69±4%, respetivamente.
Conclusão: Nesta série de dez anos obtiveram-se resultados equivalentes ou superiores aos referidos em experiências mais vastas e mais longas, progressivamente melhorados pela introdução de fatores suscitados pela própria experiência. Com este programa foi possível elevar e manter a taxa de transplantação cardíaca em valores acima da média europeia.

Introduction

Cardiac transplantation is the most effective treatment for end-stage heart failure (HF) that is refractory to other therapies, not only increasing survival but improving patients' quality of life.[1–3] However, there has been a marked decrease in the number of donors, which is the main limitation to transplantation. This has led to a widening of the selection criteria in recent years to include older donors and those who have died of neurological causes, frequently with other diseases and/or cardiovascular risk factors.[3,4]

At the same time, progress in medical treatment of advanced HF has led to improvements in patients' clinical condition, delaying their entry to the transplantation waiting list. New inotropic and vasodilator agents, cardioverter-defibrillators and resynchronization devices, temporary mechanical circulatory support systems, and the widening of indications for conventional surgery, as well as the establishment of HF intensive care units, have helped to control recurrent HF crises, all of which improve survival but have little effect on patients' quality of life.[5–8] Transplantation thus remains the last resort for patients who do not respond to these new therapies and technologies, and referral rates have not fallen.[1,4,6]

The cardiac transplantation program at our center began in November 2003. Overall results of the first five years of