

Results of acute heart retransplantation in Eurotransplant

J. de Boer¹, B. Cohen¹, J. Thorogood¹, J. D'Amato², and G. G. Persijn¹

¹Eurotransplant Foundation, Leiden, The Netherlands

²Department of Immunohaematology, University Hospital, Leiden, The Netherlands

Abstract. In 1988 a special programme for acute retransplantation was introduced in Eurotransplant, giving patients awaiting acute retransplantation priority in the selection procedure. Due to scarcity of donor hearts the question arose whether graft survival after acute retransplantation justified the use of these hearts for this category of patient. A retrospective analysis on the results of transplantations performed in patients who were awaiting acute retransplantation within Eurotransplant was done. In 18 out of 46 cases the patient was treated prior to retransplantation with some kind of mechanical support device. Of the 46 grafts, 28 failed. The actuarial 1-year graft survival in this study group was 36%. In comparison, graft survival for primary cardiac transplantation is approximately 81%. Graft survival after acute heart retransplantation is very poor, especially when the patient has been pretreated with a severe mechanical support system.

Key words: Heart transplantation – Retransplantation – Graft survival – Mechanical support – Bridging

Acute graft failure, especially in heart transplantation, leads to a serious life-threatening situation, which can only be treated with immediate retransplantation. Therefore, a new programme was initiated in Eurotransplant in 1988. This so called 'High Urgency Program' included two rules:

- All donor centres had to offer each available donor heart for this special category.
- Patients on the 'high urgency' list had the highest priority in the selection procedure.

The question was raised if, in the light of the shortage of donor organs, the results justify acute retransplantation.

Patients and methods

As of 1 September 1991, 98 patients were assigned to the 'high urgency' category. A total of 45 patients, 43 male and 2 female, actually received retransplants and one patient returned to the high urgency list another retransplantation. In 18 cases, the patient was treated prior to retransplantation with mechanical support (five

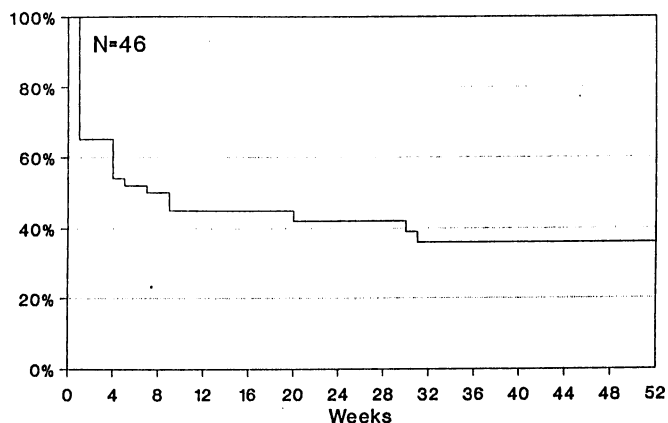


Fig. 1. Graft survival in heart retransplantation, Eurotransplant Jan 1988–Aug 1991

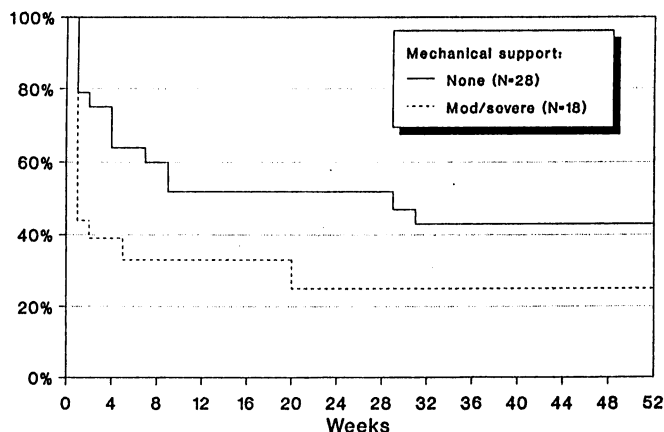


Fig. 2. Graft survival in heart retransplantation, Eurotransplant Jan 1988–Aug 1991

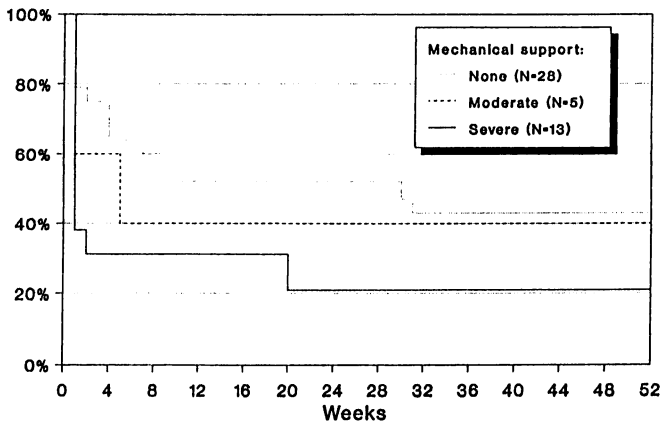


Fig. 3. Graft survival in heart retransplantation, Eurotransplant Jan 1988–Aug 1991

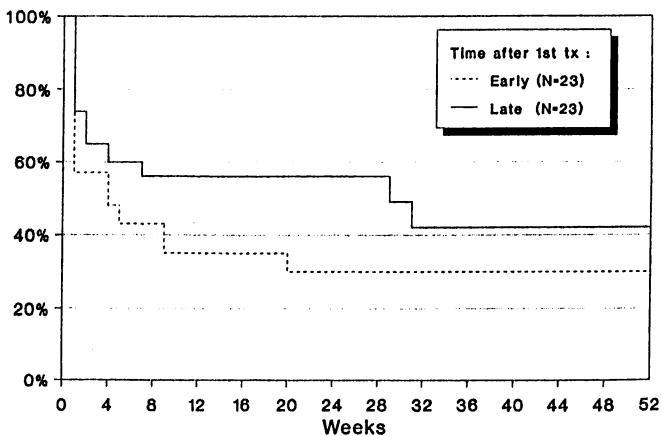


Fig. 4. Graft survival in heart retransplantation, Eurotransplant Jan 1988–Aug 1991

patients with intra-aortic counterpulsation and 13 with a ventricular assist device). In 23 cases the patient was retransplanted within 30 days (the early retransplantation group), the others were retransplanted after more than 30 days (the late retransplantation group).

Results

The results of the follow-up analysis of the 46 transplantations are shown in Fig. 1. The overall graft survival was 36% at 1 year. Of the 46 transplants, 28 (61%) failed with-

in 1–213 days (median 5 days), 17 of these within 1 week. From the group that received mechanical support prior to retransplantation, 13 grafts failed within 1–319 days (median 3 days), while 15 of the 28 without mechanical support failed within 1–213 days of retransplantation (median 21 days). However, the 1-year survival of grafts in the two groups were not significantly different (Fig. 2). Moderate support (i.e. intra-aortic counterpulsation) had no effect on the graft survival (40% at 1 year vs 43% for the group without mechanical support), while the graft survival of the severe support group (i.e. the ventricular assist group) was much lower (21% 1-year graft survival) (Fig. 3, $P = ns$).

The late retransplantation group did somewhat better than the early retransplantation group (42% 1-year graft survival vs 30%) (Fig. 4, $P = ns$).

Discussion

Our results are lower than those of the International Society for Heart and Lung Transplantation, which reported 49% patient survival at 1 year in regrafted cardiac patients [2], compared with 81% 1-year patient survival for primary transplantation [2], as also reported by Cabrol et al. [1]. However, these patients received a cardiac retransplant also after chronic rejection while the patients in our study received their second graft only after acute failure.

The question remains as to whether the poorer graft survival results obtained in patients after acute cardiac retransplantation justifies the use of a higher urgency code for those patients than for those awaiting primary cardiac transplant. The number of acute retransplantations is still too low to draw final conclusions.

Acknowledgements. We are grateful to the medical staff, nurses and administrators of the participating cardiac transplant centres for providing the necessary data for this special analysis.

References

1. Cabrol C, Gandjbakhch I, Pavie A, et al. (1991) Cardiac retransplantation, la Pitie experience. *Transplant Clin Immunol* 22: 169–175
2. Kriett JM, Kaye MP (1991) The Registry of the International Society for Heart and Lung Transplantation: Eighth Official Report. *J Heart Lung Transplant* 4: 491–498