Influence of Preexistent Donor Coronary Artery Disease on the Progression of Transplant Vasculopathy

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Abstract

Background

Transplant vasculopathy (TxCAD) limits long-term survival of allograft recipients. The possibility that preexistent donor coronary disease (PEDD) might accelerate this process is of concern. The serial progression of sites with and without PEDD as assessed by intravascular ultrasonic imaging is explored in this study.

Methods and Results

Thirty patients with baseline intravascular imaging within 3 weeks of cardiac transplantation who had at least one annual follow-up study were included in this study. Vessel luminal area (LA), total area (TA), intimal index (II=TA−LA/TA), mean intimal thickness (MIT), and Stanford classification were expressed for each image site and for each patient at each study. Progression of sites and of patients with and without PEDD on the baseline study was compared. Patients with PEDD (n=9) still had significantly more intimal disease than those without PEDD (n=21) at the first follow-up study (MIT=0.35±0.13 versus 0.13±0.11 mm; II=0.29±0.11 versus 0.11±0.1; class=3.7±0.5 versus 2.2±0.94; P<.001 for all comparisons). However, the increase in intimal thickness during the 1- year interval was not significantly different between the two groups. In 4 patients in whom both types of sites were present, no difference in progression was found. Data were similar for patients and sites studied over >1 year.

Conclusions

PEDD does not accelerate the progression of TxCAD within the first few years after cardiac transplantation. The pathophysiology of TxCAD is most likely immune mediated and does not seem to be accelerated by native coronary artery disease.

Keywords
Transplantation, ultrasonics, coronary disease