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Drug-Eluting Stents in Heart Transplant Recipients with Transplant Coronary Artery Disease

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Background: Transplant coronary artery disease (TCAD) remains the major cause of mortality and repeat transplantation in orthotopic heart transplant (OHT) recipients. Although focal stenoses due to TCAD can be treated with percutaneous coronary intervention (PCI), the restenosis rate is high in this setting of inflammatory disease. Advances in immunosuppressant therapy including Rapamycin, and (PCI) technology with drug-eluting stents (DES), hold promise for improved clinical outcomes with decreased incidence of TCAD and restenosis. **Methods:** This study compared 36 OHT recipients with TCAD who were treated with PCI without DES, and a cohort of 12 OHT recipients with TCAD treated with PCI and DES. Primary endpoints were major adverse clinical events (MACE), including post-procedure myocardial infarction determined by elevated troponin I, hospital readmission at 30 days, and target vessel revascularization (TVR) within 6 months. The actuarial survival rate was also analyzed at 6 months post PCI. **Results:** Of the 36 OHT patients receiving PCI without DES, there was 50% MACE (18/36) which primarily consisted of patients requiring TVR. Of the 12 OHT recipients with TCAD receiving PCI and DES, there was 42% MACE (5/12), which consisted mostly of post-procedure myocardial infarction. TVR at 6 months was 19% (7/36) in PCI without DES and 0% (0/12) in PCI with DES. Actuarial survival at 6 months post PCI was 90% for PCI without DES and 92% for PCI with DES. **Conclusion:** OHT patients with TCAD who are treated with PCI and DES have less restenosis and TVR. Despite the intense inflammatory nature of transplant CAD, DES are effective in treating focal epicardial stenoses.